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ErISFaVIA
Early Intervention Services for Families with Children with Vision Impairment and Additional Disabilities

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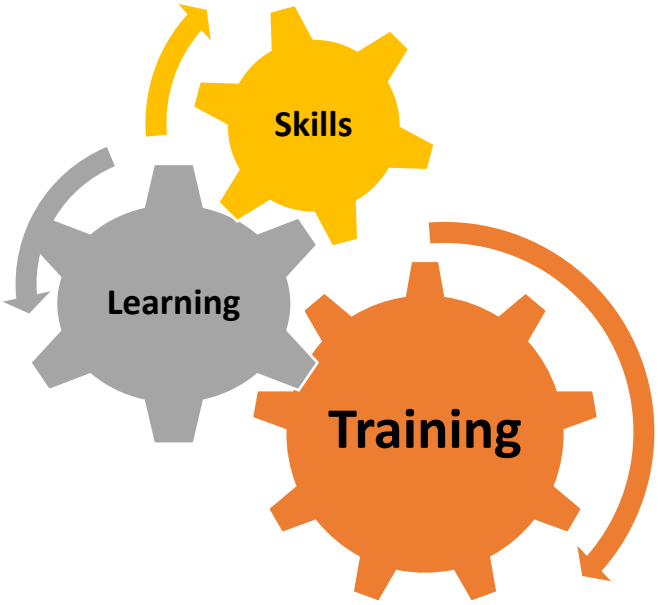

Early Intervention Services for Families with Children with Vision Impairment and Additional Disabilities

Blindeninstitut München

mali dom

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Intellectual Output 3 (IO3)

ErISFaVIA

Early Intervention Services for Families with Children with Vision Impairment and Additional Disabilities

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SECTION A

GENERAL PRINCIPLES AND PRACTICIES IN EARLY INTERVENTION

THEORETICAL DETERMINATION OF EARLY INTERVENTION PROGRAMS

SUMMARY POINTS

Although experts often state that the first three years of life are the most important for early intervention, it is important to emphasize that neurodevelopmental plasticity and the possibility of influencing the quality of development exist after the third year of life of the child as well.

Changes depend also on environmental influences, primarily family characteristics, since the early development of a child is largely determined by the context in which he or she grows up.

Although there are different approaches and models of early intervention, contemporary early intervention approaches tend to focus on the whole family, not just the child and the difficulty.

THE HISTORICAL DETERMINANTS OF THE MEANING OF EARLY INTERVENTION

Scientific and professional interest in early childhood development has grown tremendously over the last few decades. In the last thirty years, various scientific studies and analyzes of available theories in the social and medical sciences have led to new concepts in Early intervention that emphasize precisely the interplay of services and specific expertise in health, education and social care, thus sharing responsibility for the successful implementation of Early childhood intervention services. Early intervention in childhood, as a process in which professional services are provided, is usually defined by the age of 3 of the child, which has its stronghold in neurobiological settings and developmental theories. However, by placing early intervention in the legal, educational and social context of each country - especially in European countries, the limit for providing early intervention services implies the age of inclusion in the school system, up to 7 years of age. Despite the different interpretations and the age range of early childhood intervention, what is emphasized in all systems as the most important and starting point is that appropriate services should be started as soon as possible, since the early intervention program is most effective if started immediately upon determination of risk or deviation from normal development. At an early age, from birth to age 3, and especially during the 1st year of life, child's development in different areas is the most intense. Child learns the first movements, the first steps, learns how to pronounce voices and words and attach meaning to those words. He learns to understand the moods and feelings of the people around him, becomes aware of himself and struggles to deal with various emotions that occur to him. All the development we see, which is visible, could not take place without internal development at the biological level. By matriculation of the nervous system, the child acquires the prerequisites for mastering various developmental tasks. Biologically, the outcome of the intervention depends on the ability of the nervous system (at the cellular, metabolic and anatomical levels) to modify depending on experience. This process, which we call plasticity, is often time-limited because there are so called windows of opportunity or sensitive periods to alter neurological function. Furthermore, there is evidence that sensitive periods and neurological systems interact with individual characteristics. Although experts often state that early intervention in the first three years of life is paramount, it is important to emphasize that neurodevelopmental plasticity and the possibility of affecting the quality of development persist beyond the third year of life of the child (1).

The second half of the 20th century marks the beginning of structuring Early childhood intervention, with the development of many creative programs in the care of children with developmental disabilities. Conceptually, Early childhood intervention is on the rise in the United States in the 1970s. The turning point is the emergence of Head Start program, which is based on the premise that early childhood experiences are the basis of later development. It is this program that has provided the framework for the further development of early childhood intervention, which continues to this day (3).

A review of the literature concludes that biological, psychological and sociological factors are important in the development of children. There is a continuing dilemma among scientists researching early childhood development, which of these factors should be given greater prominence. According to Tartas, Baucal and Perret - Clemont (4), we can distinguish and define the following factors: a) biological: genetic and organic (neurophysiological); b) environmental: physical, social and cultural environment; and c) the activities of the individual: to strike a balance between the environment and the individual (interactivity) and to establish an internal balance (intraactivity).

Most scientific evaluation research comes from the North American area and reflects changes in their Early intervention system. The previous research (5) focused on demonstrating the effectiveness of rehabilitation by comparing children who were enrolled in certain programs and those who were not, after which the first programs were conceptualized as compensatory interventions for developmental deficits. The general conclusion was, of course, that early intervention has its justification, but research has not answered the essential question of which intervention is best, for whom and under what conditions. The answers to these questions are focus of contemporary research, which should provide practitioners with a basis for more secure decision-making regarding the selection and implementation of activities and programs. Most studies highlight the plasticity of the brain (creating new pathways and using existing synapses in reorganization) as the greatest benefit of early intervention at an early stage of development, that is, in programs started before the ninth month of chronological age.

Changes in Models and Approaches

Early intervention is becoming increasingly important in the world as programs have been proven to be cost effective, efficient, have a long-term impact on development and maximize the developmental potential of the child (6). Many studies show that early intervention has a positive and significant impact on the lives of children with disabilities and their families. Of course, some authors (7) criticize the importance attached to early intervention and point to the lack of scientificity of the research conducted.

One of the better-known researchers on the influence of parents in the early intervention process is Gerald Mahoney (8), who already in 1985 in his first study indicated that the effect of parental responsiveness in everyday interactions with the child on developmental outcomes was neglected. Many of his associates (9, 10) state that early intervention programs are effective when they are parent-focused and support parental responsiveness in the child's daily environment. Research over the last ten years has increasingly focused on the role of parents in the early intervention process itself.

At present, the most successful practice points to the importance of family involvement in early intervention programs. Dunst (11) states that early intervention involves parents or other primary caregivers who, through their experiences and capabilities, provide children with the development and

acquisition of competencies that will enable them to meaningfully participate in day-to-day activities in the environment.

In the contemporary approach to early intervention, the idea of prevention should be emphasized because early support starts from a recognized risk. The intervention must be a balanced and planned process in which rehabilitation procedures designed to develop and improve the child's skills are applied in parallel with strategies that should minimize the negative effects of disabilities.

There are four theoretical approaches to today's assessment and early intervention approaches:

a) The Environmental model of Bronferbrenner and Sameroff (12) looks at the development of a child in a social and family environment and recognizes the importance of their interconnectedness

b) Papoušek's parent-child interaction model (13) considers the social relationship between parent and child a key role in child development

c) The principle of dynamic assessment and intervention is based on Vygotsky's theory on the concept of the area of proximal development (14)

d) The synactive model of organization and development of child behavior presented by Als (15) focuses on the child's internal subsystems, their interaction with one another, and interaction with the environment.

Based on these theoretical approaches, different approaches and models of early intervention are applied that are critically evaluated and systematically sought to improve. Some of the resulting models are Newborn Individualized Developmental Care and Assessment Programs - NIDCAP (15), which is implemented in a large proportion of neonatal intensive care units, Kangaroo Care described by Charpaak et al (16), Responsive teaching (17), Developmental stimulation (18) and many others. It should be borne in mind that there is no universally successful model and form of intervention, so a form of intervention that can be effective for preterm infants is different from an intervention that is effective for children born in the period with perinatal injuries.

In modern approaches, ecological understanding of the child's development prevails, that is, the role of the child's environment in the dynamic relationship of change and reactions. The developmental outcome is thus not only the result of the efforts of the individual and his experiences, but the product of their combinations. Sameroff (12), in a Transactional model of early intervention, emerging from a transactional understanding, indicates that the scope of the intervention should be as small as possible and the effect as large as possible by acting on different systems of the family in intervention. The main marks of such a model are the three “R” of Early intervention; *remediation* (child-centered therapy), *redefinition* (changing the parental perspective of the child's behavior) and *reeducation* (teaching the parents specific skills). In summarizing contemporary approaches in early intervention, it should be noted that the Systemic perspective prevails in the appreciation and understanding of concepts and different

models (19), that is, the theoretical framework according to which practice is created based on the analysis of hierarchically placed systems, subsystems and their interrelations. The model respects the diversity of existing models and national legislations and analyzes many results of interdisciplinary research on very different groups of children with disabilities or developmental risks. The central task of an intervention under such a model is to create optimal interaction forms between the participants in the process (parent, child) if they did not exist before or re-establish them at the best possible level to encourage the child's development.

The concept of early intervention focused on family has three key elements: an emphasis on the child's capabilities, the promotion of family's choice and control of the resources selected, and the development of collaboration between professionals and parents. Although research has shown that this model is neither simple nor easy, practice consistently states that, in this model, the family has a wide range of opportunities to work with the child for the benefit of the child and the whole family and for that reason the family is satisfied and happy to accept the model (20).

Since the 1990s, there has been a change in the concept of an early intervention program, with a shift in the focus of the intervention on the child towards the development of a family-oriented program. Thus, Goodman (21) introduces the term parenting model for those early intervention approaches and curricula that are no longer solely focused on the child's teaching methods but on the empowerment and teaching of the parent. In the literature, this approach is often referred to as a relationship-focused approach (17). Keeping in mind that the child's primary context for development is his or her family, it is important to keep in mind in the process of working with the child that the changes that occur with each member in that family affect all other members and the family as a whole.

Numerous studies (20, 21) indicate that the developmental outcomes attained by children with developmental disabilities are not only conditioned by the neurobiology of the developmental disorders but are also influenced by parental actions and changes. Responsive teaching should certainly be mentioned as one of the most significant approaches here, as an example of an intervention aimed at changing the parent/child relationship in stimulating the child's communication, cognitive and social - emotional functioning (18). The approach has been analyzed through numerous studies that have come to the conclusion that parental responsiveness is one of the main factors that influence a child's developmental outcome. An expert in early intervention in working with a child in the family establishes a triad relationship that should be characterized by support, trust, open communication and mutual respect. An approach to the family, the so-called parental model, is much more than supporting parents and creating a plan and activity for the child. The key to the success of an early intervention is to identify those risk factors or inadequate family resources needed to provide the optimal intervention relevant to the child's developmental outcome.

In the early intervention program, it is important to be familiar with the concepts of risk and protection as well as the concept of family resilience. Knowing and recognizing these factors helps in the process of family empowerment, that strengthens the already existing protective factors of individual families and guides them in the use of family resources. This can effectively influence the development of resilient families that will successfully cope with the stress and crisis situations they find themselves in. Enhancing parental confidence and competence through education and counseling processes is one of the ways in which a child's well-being is achieved by involving other persons important to him in the early intervention process, as parents who have more knowledge and skills can more effectively stimulate their child's growth and development.

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THE DEVELOPMENT OF EARLY INTERVENTION SERVICES: PERSPECTIVE FROM BLINDENINSTITUT MUNCHEN

EARLY INTERVENTION FOR VISUALLY IMPAIRED CHILDREN WITH ADDITONAL DISABILITIES

In recent decades, a dense network of early intervention centres for disabled children has developed in Germany, including special early intervention centres for children with sensory impairments. Today, hardly anyone questions the usefulness of early intervention. There is a consensus in society, in politics, among doctors, psychologists and special educators that early support is necessary. Of course, there are still discussions about the exact "how": the question of the focus of the content and the necessary qualification of the professionals and, of course, questions about financing.

Since the beginnings of our early intervention, we have constantly dealt with the current educational trends and different concepts. Many things have changed since then, others have remained the same (see History and roots of Early intervention).

Today, early intervention in Bavaria is clearly regulated by law and thus financially secured. Early intervention is an independent institution, but embedded in a superordinate system of medical services, such as those provided within the framework of the Mother and Child Passport (this includes prenatal, peri- and postnatal medical measures in different disciplines). Furthermore, there is a wide range of early support services such as after birth projects or various counselling services (e.g. **KoKi** - Netzwerk frühe Kindheit- Koordinierende Kinderschutzstellen). In addition, there is further support for counselling people with disabilities and their relatives, such as the Supplementary Independent **Participation Counselling (EUTB),** which we have also established in our house as a separate office. This requires a high degree of interdisciplinary work from us with the entire network.

Our mobile early intervention centre offers a highly specific range of services for visually impaired, blind and multiply impaired children from birth to school.

Vision in children with multiple visual impairments is often imprecise, usually slow and very prone to disturbance and therefore unstable. It may not work at all times of the day, not in all positions and not under all optical conditions. Maybe it only works in a darkened room, maybe only when there are no other disturbing stimuli at the same time.

In dealing with these special children, we must therefore know and integrate methods of physical and mentally handicapped education in addition to the blind or visually impaired specific approach. In addition, there are other concepts and methods such as TEACCH, elements of music therapy and aromatherapy, as well as basal stimulation, which help us to stabilise the emotional and physical wellbeing and give us valuable input into our work.

As we work holistically and transdisciplinary, we always try to integrate basic principles from different medical-therapeutic methods into our work and we try to include elements from the fields of physiotherapy, speech therapy and occupational therapy into our work.

The focus is on the individual design of support situations in which the various principles, instructions and methods are integrated as far as possible.

A comprehensive diagnostic serves as a basis, which cannot simply be made with a developmental test for normally gifted children but requires in particular the involvement of the parents and a precise (systematic) observation in the sense of a support assessment. The Befindlichkeitsorientierte Entwicklungs Profil für Kinder und Menschen mit Intelligenzminderung (BEP-KI) for example is a developmentally psychologically based instrument and assesses the developmental status of children with multiple disabilities in the dimensions of emotionality, social development, thinking development and language development.

A complex diagnosis of the vision of a child with multiple disabilities is an important basis for our work. This should be carried out in an interdisciplinary way and include the different aspects of visual perception. This is also reflected in the promotion of vision. In addition to the general promotion of perception and a good adaption of the environment, basic skills can also be specifically promoted. Together with the parents, ideas for the individual design of the environment and for concrete supportive play and interaction activities are developed.

As a conclusion, it can be postulated that children with visual impairment and multiple disabilities and their families need individual support services and a various amount of support treatments.

HISTORY AND ROOTS OF EARLY INTERVENTION

Roots from special education

Early intervention was initially part of special education. As early as the 1950s, with the compulsory education of disabled children, there were dedicated teachers for the blind who made home visits to blind children who were to be enrolled in school. The teachers saw the often deficient early learning environments of blind children at home and the ignorance of the parents regarding the educational needs of the blind young child.

In the formulation of the decisive expert opinion for the German Education Council, which ultimately brought about the emergence of early intervention for blind children in 1973, it says: "The birth of a blind child or blindness in infancy usually triggers unusual emotional crises on the part of the mother, parents and family, which, if not positively dealt with, result in negative developmental conditions for the blind child" (Speck, 2008).

On this background, in 1975 the Bavarian Ministry of Education and Cultural Affairs commissioned the Foundation for the Blind to develop a model for pre-school care for children with multiple disabilities and visual impairments in the whole of Bavaria; in particular, the development of early intervention structures for its catchment area and clientele, and thus the early intervention programme at the Munich Institute for the Blind starts.

Roots from social pediatrics and politics

Early intervention received decisive impulses and methods from the field of social medicine. The names Hellbrügge and Pechstein must be mentioned here as the most important representatives of German social paediatrics. Both physicians drew on their experience from working with children in care with deprivation syndromes, where it had been shown that developmental delays could be made up for through targeted stimulation. Pechstein published his standard work on the "environmental dependence of early childhood central nervous development" in 1974. The core statement was:

In the first months and years of life, the decisive course is set for the development of a human being - because it is precisely during this time that he or she learns the most and most effectively. The functions of the human organism can be influenced to a greater extent during these "sensitive phases". If there is a lack of stimuli for the development of the child's abilities during the first months and years of life, they will remain underdeveloped. Therefore, the first years of life represent a great opportunity for every child. These opportunities of early development must be used, especially in the case of disabled children

or children at risk of becoming disabled. The earlier an impairment or abnormality in the child's development is recognised, the better help can be provided.
The buzzword "plasticity of the child's brain" was coined at this time. It was assumed that the developing brain could repair itself almost without limits or compensate for failures if it only received the necessary external stimuli in the form of therapy in time.
The first social paediatric centres such as the Munich Children's Centre were established. Even today, most of our children receive specialist medical examinations, care and treatment there, and so these institutions represent an important network partner for us.
The "Developmental Physiological Tables for Infancy" compiled by Hellbrügge and Pechstein and later the Munich Functional Developmental Diagnostics served as a basic diagnostic tool and as a guideline for setting up therapeutic measures.
The early and systematic promotion of children's movement development received excellent working tools through Bobath and Vojta: . Children with delays or disorders in their movement development could receive physiotherapy (see physiotherapy in early intervention).
Politically, regular preventive medical check-ups for infants were legally anchored and thus children with developmental abnormalities and impending disabilities could be detected at an early stage.

Roots from developmental psychology and behavioural therapy

Many studies on early childhood development had shown that development takes place through a close and intensive exchange between the child and its parents as the first and most important attachment figures. This applies not only to emotional development, but also to the development of perception and motor skills. Constant, regular, attentive interaction and communication between the mother and her child are emphasised as prerequisites for development in general.
With many studies on hospitalised children, or on the fatal consequences of deprivation for child development, developmental psychology has done much to emphasise the importance of parents, especially the importance of the mother for well-being and development.
Another important cause and prerequisite for the rapid establishment of early intervention was behavioural therapy and its methods. Behavioural therapy made elementary learning principles therapeutically usable - especially operant conditioning (consequences of a behaviour: Reinforcers, rewards and punishments).

In the learning theories underlying behaviour therapy, it is assumed that some of the retarded children could not learn more complex behaviours only because they never had the opportunity to systematically build up the individual elements of the complex sequence in their behavioural repertoire.
The first support programmes in behaviour therapy were based on conventional developmental tests. The test items were reformulated into tasks and these tasks were then combined into a support programme according to the modular principle.
The essential elements of the behavioural therapy approach were:
- Precise definition of the stimulus offer, i.e. standardised stimulus material
- Precise definition of therapist behaviour
- Break down the task into small steps
- Systematic insertion and fading out of assistance for the child
- Prompt and clear feedback for desired and undesired behaviour.

At the same time, this directive form of practising also posed the danger of reducing the children's motivation to work on their own. Many children developed the attitude that their own attempts to solve problems were undesirable or not promising.
However, these disadvantages only became apparent over time. At first, behaviour therapy seemed to be the tool that practitioners had long been waiting for. Because behaviour therapy was simple, it was easy to understand, easy to handle and easy to communicate. That is why it opened up the possibility of lay involvement. In fact, a novelty of behaviour therapy was the involvement of parents in the therapeutic work and working in the child's natural environment, the parental home.
When we talk about a partnership between early intervention and parents as a matter of course today, it is worth remembering that this was not a given from the start, but the result of a process of experience over many years of working with families.
Basically, the work in the first years was still characterised by the idea of the "feasibility" of child development. At that time, many standardised therapy and training programmes were developed that were primarily oriented towards the healthy child, towards "normal development".

Problems in the beginning of early intervention:

The principle that the visual nerve can be systematically stimulated was still new and controversial in the 70s of the last century (before that, the prevailing principle was to protect the vision). For the area of visual stimulation, pedagogical procedures and support media first had to be developed by us, and these were then very deficient, behaviour-therapy oriented (In-Put approaches).

But gradually the limits of this "deficit-oriented" approach became clear and it became apparent how relative the possibilities of reorganising the brain damaged in early childhood ultimately are: There were children who did not develop well despite early support, who refused therapy and those who were sent from one therapy to another.

The role of laypersons and mere agents of therapeutic orders was also questioned more and more and gradually changed from that to a more cooperative partnership.

The therapists began to realise that the parents shaped a much larger part of the child's life field and that they should not see themselves as the only experts in supporting the child.

In addition, there were disillusioning empirical studies on the effectiveness of early intervention as a repair facility. They forced us to relativise ideas about the ability to influence children's development through pedagogical and therapeutic means. In particular, it had to be recognised: Disabilities cannot be cured and isolated therapies have little effect.

This resulted in a paradigm shift in FF (Schlack 1986):

- The phrase "the earlier and the more, the better" alone is not applicable. It is much more about the right time and especially the right quantity of support measures. These must be carefully chosen in interdisciplinary exchange and with the parents.
    - The subjective experience of the child, his or her state of mind in the support situation, is an important guideline for the design of early intervention. It is important to take the child's signals seriously in order to avoid excessive demands, reluctance and resistance.
    - Directive behaviour, constant steering and authoritarian control of the learning situation, constant stimulation and offering can ultimately have a more inhibiting effect on the child's development.
- An interaction is optimal when the child and the adult influence and react to each other to the same extent (reciprocal interaction).
- This presupposes that the adult is able to pay attention to the child's signals, to take them seriously, and thus to regard the child as an equal partner.
- The quality required of the adult - the therapist or the mother - is called responsiveness. This is an attitude that gives the child space and time for its own activities, but is ready to respond to them in a confirming and formative way.

The disabled child does not simply need a large amount of additional stimulation. Rather, they need - just like the healthy child - the opportunity to test the effects of their own initiative, to practise their

own remaining abilities, to gain experience and self-confidence and, on this basis, to expand their competence, understanding and social skills.

Overall - at the latest since the end of the 1980s - exaggerated ideas of a direct pedagogical-therapeutic influence on child development had to be abandoned: Early intervention does not bring about massive developmental acceleration in the case of biological-organic disabilities, but it does have an effect on different levels and thus supports the whole family system.

On the level of sensory impairments, positive changes could also be observed through early intervention. Children who received support used their visual test much more effectively, showed improved search and exploration behaviour, used their vision more frequently and efficiently in everyday life and were thus able to perceive their environment in a more differentiated way and react to stimuli in a more variable way.

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DEPARTEMENT OF EARLY INTERVENTION, BLINDENINSTITUT MUNICH - HOW WE WORK

Our early intervention not only relates to the child, but also to the entire family in their social environment.

The respective goals include:

1. The development of the child's inherent abilities, the development of curiosity, initiative and self-confidence (as a basis for learning) and the prevention (or reduction) of development delays and behavioral problems

2. Strengthening parents and their parenting skills as well as promoting social inclusion and participation for the entire family

In order to achieve these goals, the offers of our early support include not only child-related development support, but also advice for parents and other key caregivers (e.g. specialists in kindergartens), as well as the interdisciplinary coordination of support with other specialist disciplines (especially physiotherapy, speech therapy, occupational therapy) and networking with internal and external bodies (especially clinics, self-help groups, advice centers such as supplementary independent participation advice).

Strategies, who are important:

* Establish reliable alliances with families and other service providers based upon family and child strengths, respect for diversity and culture, and collaboration.

* Serve as an effective member of the early intervention team, help families and other team members understand medical information, and be familiar with service coordination responsibilities.

* Make weekly home visits that promote functional outcomes for both the child and family.

*Since vision is so much important for the overall development of the child in the first few years, holistic child-related support always takes place in all areas of development and perception:

The focus is on the child with his/her visual impairment and individual characteristics, interests and preferences in their living environment.

The environment as well as the playing materials are individually designed according to principles specific to the individual visual impairment according to the motto "Seeing in relation to life":

The aim is to awaken, expand and optimize the joy of seeing by discovering the environment:

"Everything is worth looking at closely."

In general, we are supported by various high-contrast, luminous or glittering, as well as game and everyday materials, media and aids adapted according to the low vision criteria.

In recent years we have been working increasingly with the “new” media such as iPads, laptops and mini projectors. These media show us many new possibilities and areas of application, in particular through the regulation of different light levels, easy handling and the fascination of moving images with acoustic support. In addition to the use in promoting the child himself (through individually designed stories and exciting apps from the different development areas), we also use them in our documentation and evaluation.

Regardless of whether it is analog or digital media: all materials support the children in using their individual vision better and more often in everyday life with joy and curiosity.

Through family-related offers such as counseling meetings with parents or further training offers for other caregivers (e.g. in the daycare center), a positive learning and development environment is created for the children to offer good opportunities to learn.

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SELECTED WORKING PRINCIPLES OF EARLY INTERVENTION

According to Thurmair and Naggl, there are four major working principles in the early intervention that have emerged as standards and as distinguishing features from other services for disabled children and children at risk of disability.

These professional standards are: Holism, family orientation, inter/transdisciplinarity and networking.

1. Holism is seen as the special orientation of all services: it is about the context of the child's overall development and the living environment. Here, not only the different areas of development are subsumed, but rather also individual motivational and emotional factors such as self-experience and self-esteem as well as integration into the living environment. According to the ICF, holism means the permanent networking of different areas of participation, bodily functions, bodily structures and the child's personality in a concrete environment. This is meant to be an antithesis to isolated pure functional therapies and methods. It is not about isolated functional training of one aspect without feedback with other areas of development. This is sometimes difficult to implement for children with multiple disabilities who receive many therapies from different agencies, but the holistic approach should always be kept in mind. Regular round tables for case discussion, support planning and evaluation can be helpful here.
2. Family orientation is understood to mean the focus of early intervention not only on the child alone, but on the family. The parents' concerns are taken into account in the support. The child's living environment together with the family's overall situation, also with all the parents' conceptual convictions and the family's ever-changing need for help, sometimes poses great challenges for early intervention. Good contact with the parents and clear agreements are urgently needed.

According to Pretis, this can be reflected in the:

Relationship-oriented aspects: The early interventionist

- Adheres to agreements
- Really listen to my worries/concerns
- Recognises the strengths of my child and family
- Recognises the positive things I do as a parent
- Is positive about my child and our family
- Understand the situation of my family and children

Participation-oriented aspects: The early interventionist

- Provides me with information so that I can make good decisions
- Responds to my requests for advice and help
- Helps me learn more about things
- Supports me in my decisions
- Is flexible if my family's situation changes

A setting-specific aspect here is our mobile way of working in the child's living environment and thus close contact with the entire family and the home environment.

3. Interdisciplinarity includes interdisciplinary cooperation between the educational, psychological and medical-therapeutic professions. This means that the different disciplines work together on a case-by-case and cross-disciplinary basis, e.g. in the context of support planning. The topic of interdisciplinarity is closely linked to the development. Historically, the understanding of work has changed from "team cares for the child" to "team cares for the family". The understanding of the team has changed in the same way. From multidisciplinary work to interdisciplinary work to transdisciplinary work.

The main difference here is in the position of the family and their own professional understanding. In the transdisciplinary team, parents are seen as part of the team and professionals share their competences towards joint planning and implementation of support and treatment measures.

4. Networking is understood as the embedding of early intervention in surrounding systems. This refers to the individual child and his/her informal family networks such as neighbours, friends or relatives as well as formal family networks such as authorities and institutions. In relation to the child and his or her family, the networking task refers above all to the goal of "empowerment". The aim is to make support systems transparent and accessible to the families, for example by referring them to other agencies for acute help. It also includes supporting parents in articulating their interests, for example towards doctors and clinics, kindergartens ... In addition, informal family networks are often great resources for coping with the internal and external stresses of parents.

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PRINCIPLES FROM THE MEDICAL - THERAPEUTIC AREAS

PHYSIOTHERAPY IN EARLY INTERVENTION

SPECIFIC LOGOPEDIC CONCEPTS IN EATING SITUATION

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

SIGNS TO STIMULATE LANGUAGE AND COMMUNICATION

SENSORY INTEGRATION IN EARLY INTERVENTION

PHYSIOTHERAPY IN EARLY INTERVENTION

"A child with a disability is first and foremost a child, and not first and foremost disabled"(Haupt,2011, 7).

Educationalists and sports scientists agree that physical activity is of great importance for the overall development of children. Physical activity is "considered a basic need for children and the driving force behind children's developmental processes" (Hunger & Zimmer, 2012,9).It not only has a positive effect on motor development, but also on children's personality development and social interaction. "Every little stimulation for the body and the accompanying neuronal networking achieves a long-lasting effect, stimulates independent thinking and later the shaping of one's own life"(Weber, 2012, 302).

Along with linguistic, cognitive, moral-ethical, social and emotional development, motor development is a central dimension of individual lifelong human development and can be positively influenced through a variety of movement opportunities and experiences (Bös et al., 2009; Bös & Ulmer, 2003;Willimczik & Conzelmann, 1999). Early childhood represents a phase in which some abilities develop more easily and with less effort (Conzelmann, 2009).

Physiotherapy aims to support natural movements and the child in its movement development, to recognise its individual resources and to promote the skills it has already acquired.

Holistic treatment approach

With therapeutic background knowledge and additional qualifications from neuro-paediatrics and orthoptics, the work in physiotherapy is holistic. The children are encouraged and inspired to conquer the world physically. They should experience what motor skills they have, develop them and strengthen them further. In this way, the children become more confident and their trust in the environment grows. Joy and self-confidence as well as a higher level of self-activity set in. With these competencies, a willingness to perform and make an effort becomes increasingly possible. The children begin to look for more and more challenges. Their motivation increases.

Through practice and repetition, they deepen their movements and thus strengthen their muscles. In addition, activities come into play that correspond exactly to the developmental level of the children. These activities are designed to be neither too easy and boring, nor too difficult and frustrating. Permanent functional limitations move into the background as soon as the children know and can use their abilities. If they know exactly what they can do physically and what is still possible, they can gain

perspectives and quality of life. For this, it is absolutely necessary that the children are as pain-free as possible. Here the physiotherapist offers possibilities and aids for pain relief.
These approaches are also combined in the Bobath concept.

The Bobath Concept

1. link

4. link

The Bobath concept is one of the best-known therapy concepts in physiotherapy. It is based on a neuro-physiological foundation and takes an approach that includes the child in its entire personality.
This approach requires close cooperation between the disciplines involved (doctor, educator, speech therapist, occupational therapist) as well as with you as parents.
The married couple Dr. h.c. Berta Bobath (physiotherapist, 1907-1991) and Dr. Karel Bobath) began developing the treatment concept in the 1940s. In the following decades it was expanded and differentiated. As a result of their treatment experiences, first with patients who had suffered a stroke and later with infants and children who were at risk of a movement disorder, the Bobath couple made the observation that pathologically altered posture and movement patterns can be influenced. This is how this interdisciplinary concept came into being.
The Bobath concept is and has been further developed through the experience gained in therapeutic work, new research results in brain research and suggestions from neighbouring sciences, such as developmental psychology and infant pedagogy. This enables orientation to the current state of scientific knowledge.
The child's development is subject to constant change. The treatment approach of the Bobath therapist refers to exactly this.
The development of the child is characterised by an interaction of sensomotoric, emotional and mental components. The child constantly engages with the social and objective environment.
his is taken up in the treatment according to Bobath. The Bobath physiotherapist manually triggers certain movements in the child by initiating rotational movements at so-called key points. The aim is to normalise the child's muscle tension as much as possible and to promote coordinated movements.
Bobath treatment is usually embedded in a play situation so that the demands on the child can be implemented in a playful way. It takes place on the floor, the inclined plane, the rocking board, the exercise ball, in the climbing tunnel or other child-friendly spaces.

The Bobath concept is also very suitable for babies with slight coordination disorders and/or developmental delays.
The therapist can, for example, initiate the movement sequence of crawling and support the developmentally delayed child to the extent that he or she finds the connection to normal child development.
Based on the medical and physiotherapeutic diagnosis, the Bobath therapist will make an individual assessment of the child.
The main focus of the assessment is the observation of the child's own activity. The findings are collected again and again in the ongoing process through the close connection between findings and therapy. In this way, the Bobath therapist guarantees regular monitoring of success and is in permanent exchange with the parents.
The goal of Bobath treatment is the differentiation of functional and motor skills, an expansion of the child's competence to act and the greatest possible independence in his or her living environment. For an infant at the age of nine months, this can mean learning to turn from the supine to the prone position, and for a 3-year-old child, helping to take off his or her shoes. The aim is to learn the most physiological movement sequences possible and to effectively reduce developmental delays.
A guiding principle of Bobath therapy is to enable optimal conditions for the development of the child's sensorimotor competence. The therapist takes into account the mental, social and emotional needs of her child. Optimal conditions in infant treatment include undisturbed parent-child interaction. Bobath therapy supports and strengthens parental competence and makes an important contribution to the undisturbed development of parent-child interaction. Professional discussions, explanation and information about diagnoses, developmental steps, milestones, environment design and goals give the parents the necessary background knowledge and create mutual trust.
The Bobath therapist will activate your child's alertness and attention. For example, somato-sensory and vestibular stimuli such as touching and moving, but also stimuli in the auditory and visual areas can be specifically offered.
By trying things out on their own and repeating them in a variety of ways, your child can learn in an action-oriented and functional way. Therefore, everyday situations are chosen that are particularly favourable for developing own ideas and experimenting. Action competence develops best in your child when it can realise goals that are meaningful to your child. In this way, your child's own active potential can be optimally utilised. The tonus-regulating offer of Bobath therapy supports your child in this.

In contrast to other therapy concepts, there are no fixed exercises in the Bobath concept. The focus is on individual and everyday activities. This concerns areas such as feeding, personal hygiene, dressing and undressing, locomotion and play. It is the therapist's task to find out the specific requirements together with you as parents. This results in some guidance for the parents. For example, you will be shown how best to pick up and carry your infant in a developmentally appropriate way or how to help your infant learn to crawl.

In addition, it is significant to say that all measures in Bobath therapy serve to prevent secondary physical damage such as contractures, luxations and deformities as far as possible.

In the early intervention of blind or visually impaired children and children with multiple disabilities, the cooperation of all persons involved with the child takes on a particularly important significance, since the goals of each individual discipline can only be achieved with the measures of all disciplines.

Visual development, for example, is only possible if the child can focus its full attention and concentration on it. For this, it needs a relaxed and suitable starting position that simultaneously stimulates physiological development.

Motor support is only accepted and integrated into everyday life if the stimuli via eye, ear, touch, evoke curiosity and create motivation, i.e. individual early support materials are used.

Eating or swallowing only becomes problem-free when the right setting of positioning, choice of food and possibly aids for feeding is found.

Therefore, there must be a regular exchange between all disciplines with a review of goals and measures.

Handling

2. link

GMFCS

3. link

The GMFCS system includes five levels of functioning or stages. They are used to classify the degree of motor impairment of children with cerebral palsy. The classification is based on the ability for independent mobility and the need for assistance from assistive technologies and mobility aids. Different age corridors are assumed: before the second birthday, between the second and fourth birthday, between the fourth and sixth birthday, between the twelfth and eighteenth birthday.

Physiotherapists, occupational therapists and doctors use the GMFCS to define the mobility level of children. It is also used in parent communication as a basis for jointly setting therapy goals. It may also happen that parents are involved in the classification by filling out a special parent questionnaire. Parents are often very good at assessing their children's motor skills using this method, so it is usually advantageous for them to participate in the classification.

GMFCS has proven to be a reliable method for classifying current motor skills, but also for predicting the motor skills of children with CP.The different levels of function within the system are relatively easy to distinguish from each other, and the system has proven useful in planning interventions. For example, it provides indications of what equipment or mobility aids a child is likely to need (for example, crutches, a walker or a wheelchair).

GMFCS can be used in different settings as well as in research (for example, in the selection, description and stratification of random samples). The system is also helpful in teaching students and caregivers how different the motor skills of children with CP can be, even if they have the same diagnosis.

GMFCS is easy to use and the assessment does not take much time. It takes a properly trained person about ten minutes to determine a child's level of functioning. Professionals who do not know the patient usually need about 15 to 20 minutes for the assessment and grading.

Environment design

In the Bobath concept, environment is understood to mean the patient's spatial, objective and social surroundings.

On the one hand, the therapist contributes to the environment by using his body and his ability to facilitate and by deciding to use hands-on or hands-off techniques. On the other hand, he or she uses or changes the spatial and objective environment in accordance with the mutually agreed therapeutic concern.

Aim and purpose

- Enabling the patient's own problem-solving strategies for the sensory-motor and cognitive learning process
- Self-perception and perception by others
- Orientation in space
- Experiencing self-efficacy
- Expansion of competences for / participation

Content

- Analysis of the environment
- Designing the environment with regard to interaction and the desired everyday-oriented action goal
- Observing the selection, nature and positioning of materials
- Targeted use of tactile, visual, proprioceptive, auditory and olfactory offers
- Use of necessary aids

Rules

- The designed environment must be adapted to the patient's current competencies and enable development.
- The environment is adapted in a supportive way in therapy and in everyday life.
- The environment design must be known and comprehensible to all persons involved so that it can be adopted
- The design of the environment must be documented

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LOGOPEDIC CONCEPTS IN EATING SITUATION

The development of sucking, swallowing and chewing begins at birth. It is regularly completed in the 2nd - 3rd year of life.

The following phases are experienced:

Sucking on the breast/bottle - liquid food

Eating with hands and spoon - pulpy food

Chewing - solid food

These abilities are closely related to overall physical and sensory development.

The meaning of food and drink in a social (European) context

Eating is a vital activity of daily life through the supply of nutrients for growth. It serves the development and maintenance of the body's functions.Healthy and health-promoting nutrition requires a balanced composition of food and an individually adapted amount of calories. Food intake as such is linked to mental well-being. Food intake is a communicative event and provides daily structure. Eating usually means a positive experience and feeling.

Eating milestones during typical development

Age in Months	0 – 4	5 – 7	8 – 10	10 – 12	12 - 18	18 - 24	24 - 36
Drinking	Bottle/ Breastfeeding	Breastfeeding/ Bottle	Breastfeeding/ Bottle/ Mug	Mug with loss	Self-Diges drinking	How 12 -18	How 12 - 18
Eating with a spoon		Pureed Breastfeeding	Paps with pieces	First spoon attempts	Family food independent experiments	Family food independent	Family food
Chew			First attempts Mam-pfen	First dia-gonal rotating chewing	Circular Rotate-of chewing		
Consistencies	Liquids	Pureed Breastfeeding	Semi-solid Kost Baby biscuit	Semi-solid until fixed	All consistencies		

				Kost			

Deviations from the physiological sucking, swallowing and chewing movements:

Terminology:

1. Ped-dysphagia (swallowing disorder)

Disturbances in the intake, processing, transport of food, drinking and saliva due to:

- Congenital neurological diseases
- Acquired neurological diseases
- Behavioural patterns (learned through possible traumatic experiences)

2. Feeding disorder (ICD 10/98)

Early Childhood Adjustment Disorder

- When breastfeeding
- Transition from breastfeeding to bottle feeding
- Transition bottle - baby food
- Introduction of solid food
- Characteristic:

  inadequate food intake. Duration longer than 4 weeks,

  occurs before the age of 6 and is usually associated with failure to thrive.

Eating disorder

For example, anorexia or bulimia, this does not occur in infants and young children. It is a psychogenic disorder

3. Myofunctional disorder:

   Muscular imbalance of the facial and oral musculature as well as jaw malpositionA non-physiological swallowing pattern is present. The myofunctional disorder is not a typical swallowing disorder in the sense of impaired food transport.

Swallowing disorder in children (paediatric dysphagia)

We now turn to swallowing disorders (dysphagia) in detail. These often occur in children with complex impairments.

Causes of dysphagia:

- Birth defects, premature births

- Various syndromes (trisomy 21, Prader-Willi syndrome...)
- Epilepsies
- Inflammatory tissue changes
- Mental disability
- Orofacial injuries
- Neuromuscular causes

Symptoms of dysphagia:

1. Problems in the oral cavity
   - No mouth closure: saliva and food leaks out of the mouth
   - Prolonged and/or restricted chewing, or chewing is impossible
   - Food is collected in the oral cavity or in the cheek pouches (thorough oral hygiene is necessary after eating)
   - Restricted tongue mobility
   - Difficult or no swallowing reflex triggering possible (risk of aspiration)
2. Problems in the throat
   - Coughing or clearing the throat when swallowing (ingestion)
   - Choking on food
   - Food gets stuck (lumpy feeling, shortness of breath)
   - Frequent post swallowing
3. Problems with sensory processes that can interfere with the eating process:
   - The ability of the sensory organs to receive sensory input is disturbed.
   - Control of the total amount of information processed by the brain may be disturbed
   - The brain's ability to recognise or interpret the sensory message is disturbed.

Possible indications of paed-dyphagia (infantile swallowing disorder):

These observations are important and should be referred to a doctor to discuss further action.

- Lack of coordination of sucking and swallowing
- Frequent swallowing (aspiration)
- Excessive strangulation
- Repeated coughing while giving food
- Breath interruptions
- Weak suction

- Damp or gurgling sounding voice
- Frequently increased temperature
- Weight loss
- Frequent respiratory infections, pneumonia
- Duration of feeding longer than 30-40 minutes
- Salivation (salivating) over the age of 5 years

When symptoms occur, it is very important to contact the parents and the attending doctors promptly in order to avoid aspiration and to discuss the further procedure. A swallowing test (FEES or videofluoroscopy) and/or a change in the consistency of the food may be helpful.

Practical therapeutic implementation

In the area of swallowing disorders, networking with the various therapeutic professional groups such as speech therapy, physiotherapy, occupational therapy and psychology is necessary. Each professional group can contribute to making eating and drinking a success for all involved (child, parents, caregivers).
In cooperation with speech therapy, sitting position and consistency of eating and drinking can be optimised. With the help of diagnostics, speech therapy can give decisive indications of paediatric dysphagia and initiate referral to an appropriate doctor. In addition, there are possibilities of using various forms of therapy such as Castillo Morales, Taktkin, etc. to give impulses to optimise eating. In addition, there are possibilities to set impulses that can facilitate and support feeding through various forms of therapy such as Castillo Morales, Taktkin, etc.
In cooperation with physiotherapy, body positioning and wheelchair adjustment can be optimised, especially in the head-upper body-feet area.
In cooperation with the occupational therapists, cutlery with different handles, specially shaped plates, techniques relevant to everyday life that affect eating can be discussed.
Already during the preparation of meals, decisive preconditions for successful food intake are created. The cooperation between kitchen and speech therapy is of crucial importance. Pureeing food is a process that should not be underestimated. The following can be observed here: what consistency does the child in care process well?
Mushy - smooth, acid-free, fibre-free (this form can possibly be probed).
Normal pureeing without pieces.
Puree to the consistency of mince sauce. This consistency can also help as a transition stage to normal food.

- To enrich pureed food, you can use oils (linseed oil), butter, cream, syrup
- The appropriate consistency of food is observed during feeding.

Appropriate thickening of drinks is particularly important. This can prevent the dangerous swallowing of liquids in advance.

There are the following fluid categories:

- Liquid: Water, tea, juice
- Nectar-like: more viscous than liquid, flows easily from the spoon, e.g. smoothies
- Honey-like: higher viscosity than nectar, but not as firm as cream or porridge

Thickening agent: It is useful for many of our residents to thicken the drink with an agent that is available in pharmacies. The advantage is that the drink can flow into the mouth/throat at a slow and manageable pace.

It is important to know that a thickener:

- Not necessarily tasteless is
- Becomes thicker over time
- settles after some time
- The drink should keep its consistency for max. 2 hours.

Important: Each drink (acidity in juices, sugar content...) reacts differently to the thickener and must be tried out beforehand.

Therapeutic cues that can make a good eating situation:

- Good erection of the child, head in middle position, stable position, feet need solid ground
- Devote all attention to the person being cared for
- For people with spasticity: do not apply pressure to the lips or tongue - this can cause spasticity.
- Do not force yourself to eat
- No food without a child's signal
- Limit mealtime

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION (AAC) IN EARLY INTERVENTION

In the case of children with multiple disabilities, speech comprehension is also impaired in addition to speech. Promoting communication is therefore one of the main aspects of the work of early interventionists. Here it is particularly important to use the sensitive developmental windows for the acquisition and development of communicative competences.

Many of the children affected can only acquire spoken language skills to a very limited extent or not at all. Impairments in self-determination, identity development and participation could be the result. It is therefore necessary to look for alternative possibilities and techniques that supplement or replace spoken language at a very early stage.

In the past, there was a widespread belief that early use of AAC measures could hinder children's language acquisition. Today, we know that the targeted and early use of AAC is an important, indispensable factor for development.

What is AAC?

The term AAC covers all measures that promote and expand a person's communication. The existing endogenous abilities are supplemented by alternative strategies and techniques so that the person concerned can be involved in decision-making processes at an early stage. Examples are:

- supplementing spoken language with the signing of key words,
- the introduction of reference objects for activities or spaces,
- the introduction of picture cards and communication boards for understanding,
- the supply of voice output devices

(cf. Wilken 2002)

Basically, a distinction is made between endogenous and external forms of communication (modes). The body's own modes include, for example, facial expressions, gestures, breathing, sounds, eye contact, pointing gestures, gestures, tactile signs, spoken language etc.

For the external modes, a division into

- non-technical (photos, symbol cards, symbol boards, symbol folders, writing) and
- technical (Power Link, Simple Talk Buttons, Serial Talk Buttons, Anybook-Reader, Static Symbol Oriented Communication Devices and Complex Communication Devices with Touchscreen) has been established. In recent years, some very useful AAC-apps for tablets have also been developed. (See link at the end of the text)

The list above already shows that the AAC toolkit is very extensive. In order for the person concerned to benefit from it, a targeted support approach is therefore necessary, which is resource-oriented and based on a thorough diagnosis. It is equally important that the early interventionist knows the possibilities and limitations of the various communication aids. After all, he should also train the parents in how to use them. It makes little sense to limit oneself to one form of communication. Rather, a multimodal approach to support must be pursued from the very beginning, which includes elements from all the modes mentioned.

There are various diagnostic procedures that help to classify the early developmental stages of communication (see Sachse 2010).

It is important that, in addition to language skills, resources in terms of motor skills, fine motor skills and sensory perception are recorded very precisely. In our house, we pay special attention to the knowledge of a person's eyesight. This helps with orientation as to which AAC aids can be used in principle.

A diagnostic tool that is frequently used by us is the "UK-Förderdiagnostik" by Irene Leber. It quickly provides information about whether the child is in the pre-intentional or intentional stage of communication, for example, and whether an understanding of symbols can already be recognised. From this, concrete short-term, medium-term and long-term support goals and the necessary support measures can be derived. Ideally, these are based on the goals mentioned in the ICF. In addition, it is recorded who intervenes when, where and how often.

The accompanying poster provides a lot of useful and practical information. It also shows at a glance how important the areas of "giving security" and "understanding better" are in the first stages of development. It is therefore an excellent tool for joint discussions on development goals.

The poster has also been published in English translation as "Assessing and Supporting Communication - Poster with Guidance Notes". The corresponding questionnaires "Record Sheets, Gathering evidence for intervention" can be downloaded free of charge (see link).

Irene Leber describes the development of communication in following stages:

A: Me, Pre-intentional Communication

B: Me and You, Early Intentional Communication

C1: Me, You & Things, Intentional Communication

C2: Me, You & Things, Active Communication

D1: Me, You, Things & Symbols, Symbolic Communication

D2: Me, You, Things & Symbols, Active Communication

E1: Expanding Vocabulary

Regardless of which diagnostic procedure you choose, you should answer the following questions, for example:

- Where do we find opportunities for communication in everyday life?
- How can the person take part in decision-making?
- How does the person get more control over popular activities?
- How does the person experience that they can influence the environment?
- How can the person show what they would like?
- What can we do to ensure that a tool is experienced as meaningful and effective?
- How can we support the child to reach a higher level of competence?

How does AAC support work?

The measures should always be oriented towards the child's interests and fit into the child's living environment or the everyday life of the family. Parents, siblings and other close contacts should be involved in all processes.

Frequent repetition is necessary to understand cause and effect.

The more often and early the child can experience and feel the power of its communication and self-efficacy, the more likely it will use all its communicative abilities.

Modelling: It is always helpful to visualise the normal language development of children. Why? Because it is the best way to understand that children receive a lot of language input in their first years of life. They have a lot of time to observe the effect of communication on other people. And at some point, the first words "come naturally". In contrast, AAC children are often confronted very quickly with the fact that they should actively use their new tool for communication. It is all too often forgotten that they actually need much more time than normally developed children. They do not learn to communicate with assistance by themselves.

We, the adults, must therefore make a start and patiently and repeatedly use the AAC system in our communication as a model. Only with us as a competent language model can AAC language development succeed. Admittedly, this is not very easy because these supportive forms of communication are foreign to us and we have to learn them ourselves first.

It has proven to be very helpful in the AAC promotion at our house to observe partner strategies, such as those formulated in the COCP programme by Vera M. Jonker, Margriet J.M.Heim in Heliomare, Holland, 1994:

1. preparing and structuring the environment
2. follow the child's lead
3. establish joint attention
4. take advantage of opportunities
5. have expectations of the child
6. Allow sufficient time; proceed gradually and slowly.
7. be a communication model
8. adapt the language level
9. give assistance
10. reward communication attempts

Finally, one more important aspect should be pointed out: We all know how helpful it is that, for example, our computer keyboards are standardised and we can write on them quasi "blindly".
The same applies to the design of the AAC aids to be offered to the children.
This includes, for example, the selection of a uniform sign language, the definition of a specific symbol system (e.g. Metacom), the definition of a uniform grid for symbol boards and symbol folders. Also with regard to a later transfer to another institution or school, it is of crucial importance that the child's sign language system is understood and used there as well.
Due to its limited scope, this paper can only be an initial impetus to explore the broad but exciting field of AAC. It has mentioned possibilities for intervention and highlighted the requirements that the communication partners must fulfil for successful communication. A well-developed AAC system enables users to communicate in a more differentiated way and to make themselves understood to a wider circle of people and in different situations of daily life. It opens up the chance for them to break out of the passive corner and take an active role in everyday life. Again and again we experience how positively children can surprise their caregivers/parents and show them what unexpected abilities they have when we have succeeded in familiarising them with the appropriate AAC support system.
Anyone who has been infected by the enthusiasm of a child who has just understood the new possibilities opened up by an accurate AAC idea will eagerly want to get involved in the future. For those who are interested, there are many sources of information and training opportunities.

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3. The COCP programme in the UK : http://www.vonloeper.de/uk-tagungsbaende/userfiles/downloads/14/Dortmund%20presentatie%2016%20Nov%2017%20web.pdf Slide 51-77.
4. Heim, M.J.M. & Baker-Mills, A.E.: Early development of symbolic communication and linguistic complexity through augmentative and alternative communikation. In: Tetzchner, S. von & Jensen, M.H. (Hrsg.). Augmentative and alternative communication: European perspectives. London: WhurrPublishers. 1996.
5. Heim, M., Jonker, V., Veen, M.: COCP: An intervention programme for non-speaking persons and their communication partners. Handbook of Augmentative and Alternative Communication. 2nd rev. ed. 2005.
6. Boenisch, Jens and Stefanie Sachse (2007): Sprachförderung von Anfang an: On the use of core and fringe vocabulary in early intervention. In: Augmentative and Alternative Communication 3/2007. 12 - 20.
7. Sachse, Stefanie (2007) : Zur Bedeutung von Kern- und Randvokabular. In: Augmentative and Alternative Communication 3/2007. 7 - 10.
8. Sachse, Stefanie (2010): Intervention Planning in Augmentative and Alternative Communication, von Loeper Fachbuch.

Sources of supply, software and helpful links:

1. Source of supply Poster "Assessing and Supporting Communication - Poster with Guidance Notes" : https://inklusiv-shop.ariadne.de/kommunikation/unterstuetzte-kommunikation/fachliteratur/10005/leber-assessing-and-supporting-communication-n/000-221/
2. Link to "Record Sheets, Gathering evidence for intervention":

https://www.cluks-forum-bw.de/aus-der-praxis/konzeption-und-organisation-in-der-schule?tx_cforum_listpost%5Baction%5D=downLoadPostFiles&tx_cforum_listpost%5Bfilename%5D=assessing_and_supporting_communication_record_sheets_1567780095.pdf

3. Boardmaker, software for creating symbol templates

4. ipad apps lists: https://uk-app-blog.blogspot.com/p/aktueapps-listen.html
5. Explanations of core and marginal vocabulary and source of reference for uniformly designed communication boards, etc. https://www.hf.uni-koeln.de/34091 and https://shop.fbz-koeln.de
6. https://www.lifetool.at/beraten/rat-tat/uk-tipp/uk-tipps/2011/2011-07-kommunikationsmappe/
7. isaac-online.org
8. https://www.cluks-forum-bw.de/unterstuetzte-kommunikation

SIGNS TO STIMULATE COMMUNICATION AND LANGUAGE IN EARLY INTERVENTION

In order to participate in life in society in the best possible way and in a self-determined manner, people need a wide range of communicative skills in all their forms, such as speech, facial expressions, body language, gestures and signs.

Babies and toddlers without developmental disabilities acquire these language and communication skills in a language-stimulating environment with competent communication partners, usually without further support.

Babies and toddlers with developmental difficulties such as cognitive impairments, genetic syndromes, sensory disabilities, autism spectrum disorders, neurological or motor impairments as well as mutism need support in the acquisition of language and communicative skills. This support takes place, if possible, in the form of language (early) support and speech therapy services in consultation with the social environment such as family, crèche, kindergarten.

In this context, augmentative and alternative communication (AAC) is also successfully used.

In addition to the use of graphic symbols, simple buttons or communication devices (talkers), the targeted use of gestures or sign language is particularly suitable for early intervention. The latter belong to the body's own communication systems and can therefore be used without further technical effort.

Gestures are preverbal or paraverbal (non-linguistic) elements; they are bound to the respective culture and can have different meanings.

They are naturally used by the communication partners in conversation with the baby or toddler. Living beings and objects are pointed at and named, attention is drawn to sounds or movements, the head is nodded or the hand is used to wave goodbye.

The growing child observes these gestures and begins to imitate them around the developmental age of 9 months, to point to objects and subjects that are currently visible (deictic, refrentional-contextual, pointing gesture), to seek the gaze of the communication partner and thus to establish a field of shared attention (joint attention). This process is also called triangulation.

The signs made by the child are in turn taken up by the communication partners, linguised, expanded, given meaning and thus the child's understanding of language develops even before the first language is produced.

Non-deictic/symbolic gestures are used by the toddler with regular language acquisition from around the 12th month. Here, reference is already made to objects or contents that are not directly visible. These gestures are thus context-independent / context-unbound and have a concrete, meaning-bearing

significance. Thus the gestures can be equated to a concept and are very close to that of a gesture. The absence of the pointing gesture or other gestures is already to be understood as an indication of conspicuous language development.

A gesture ("sign" in the Anglo-American world) is always assigned a concrete meaning, thus it corresponds to a sound, letter, word or whole phrase (see Rudolph, p. 61). In addition to the hand movement, the term is formed with the mouth and made unambiguous through facial expressions and body posture that support the meaning. "Speaking and signing at the same time facilitates understanding and gives the user more security and transparency in the communication situation" (Nonn, 2011, p.46). Signs are agreements that are (systematically) established. There are very different sign systems depending on the country, which can also be dialect- dependent. Therefore, care should be taken to use the respective country's sign language.

Signs are a bridge to spoken language: children who sign benefit from it in their language development, in language comprehension as well as in vocabulary building. They have more positive communication experiences, fewer communicative failures and will therefore communicate more. Rules and courses of action are also better understood (see further communicative goals in Appelbaum, 2016, p. 10 & Rudolph, April 2018, slide 14-15). The frequently expressed fear that the use of signs delays or even inhibits the development of spoken language has not proven to be true. On the contrary, they support the acquisition of spoken language.

Basically, sign users can be divided into 3 target groups (Applebaum, 2016, p.33):

1. Expressive language group - these children use signs (temporarily) to support speech.
2. Supportive language group - these children use signs temporarily for language acquisition.
3. alternative language group - these children - mostly with hearing impairments - use signs as a substitute for spoken language.

When is the right time to use signing?

As a general rule, it is rarely too early and never too late for communication support.

Of course, a very small baby will not yet benefit from signing, but it will not harm it either. It makes sense to start offering signs around the age of 3 months. The baby will first observe them and then, depending on its motor and cognitive abilities, imitate them from the 8th to 12th month. Even if this is not possible, the baby will still benefit from the interaction and communication stimulating effect and will be supported in its understanding of language.

In general, the use of signs should be decided together with the communication partners in order to achieve the greatest possible acceptance and implementation of signs in everyday life.

What types of signs are there?

Baby sign language, i.e. the offer of first signs for hearing babies, has been offered in America as "baby signs" for quite some time as a communication option before the acquisition of spoken language. In the meantime, this has also become established in German-speaking countries and Europe (e.g. "Zwergensprache" by V. König, "Babysignal" by W. Gericke, "Babyzeichen" by Katrin Hagemann), which greatly increases the acceptance of signs among parents and has a very positive effect on the inclusion of children with developmental disabilities. MAKATON baby courses are particularly suitable for babies with developmental difficulties in the communicative area. In the scientifically evaluated Comenius project "Tiny Signers" from 2012, the use of baby signs was tested for various countries. In the scientifically evaluated Comius project "Tiny Signers" from 2012, the use of baby signs with targeted training of teachers for very young children with hearing impairments was developed for various countries.

Visual - manual gestures

Sign language (e.g. DGS in Germany):

It is one of the natural languages with an independent linguistic language system including an independent grammar that does not correspond to spoken language (group 3 alternative language group). Some of these are combined with the finger alphabet (FA). "A connection to written language exists in the form of the finger alphabet; proper names or terms whose signs are not known by either or both of the interlocutors are conveyed with the aid of the finger alphabet". (Nonn, 2011, p.47).

Linguistic support signs (LUG):

Here, important, meaningful key words are signed at the same time as spoken language, which are oriented towards the grammar of spoken language. Depending on the stage of linguistic development, one or a few meaningful words are chosen per sentence. (Expressive and/or supportive language group). Due to this simplification, LUGs are the most frequently used type of signing in the UK, because they can also be easily implemented by children with motor and/or cognitive impairments.

Signs accompanying spoken language (LBG), also called signed spoken language:
Composition and structure correspond to spoken language; the signs are accompanied by spoken language throughout, and the finger alphabet (FA) is also used in some cases. (Group 1 - expressive language group)
Phoneme manual system (PMS):
Formation of a phoneme by a specific hand signal". With this hand signal, the lip, jaw and tongue position as well as the place of articulation are made visible. The PMS thus has the function of an articulation and speech articulation aid." (Kaiser-Mantel, 2012, p.31). It therefore helps with articulation disorders such as developmental dyspraxia, but also to clarify articles, interrogative pronouns/W-questions or prepositions.
Tactile signing for children with hearing-visual impairments or deaf-blind people:
Here, communication takes place via tactile or felt signs. Depending on the degree of sensory impairment and the time of blindness/deafness, it can take a long time to develop successful communication.
A distinction can be made here between body signs according to Sandy Joints (hand signs performed on the body of the affected child without contact of the hands), on body signs according to Mary Lee (leading under the hands of the affected child, the sign is performed on his/her body**).** Sometimes guided signs are used, where the hands of a visually impaired child are guided to make a sign tangible. It is important not to guide the child's hands against any noticeable resistance!
Lormen for deaf-blind people. The "speaker" touches the palm of the "reader's" hand. Certain letters are assigned to individual fingers and certain parts of the hand. However, this method is not suitable for young children due to its complexity and is only mentioned for the sake of completeness.
Basically, a distinction can be made between sign collections and sign systems. The former consist of a collection of basic and core vocabulary terms that are limited in number and are particularly suitable for children with cognitive and/or motor impairments or children who are already on the way to spoken language. The latter are complex systems with extended vocabulary that allow unrestricted communication and are recommended for people who will use sign language in the long term.

Presentation of selected sign collections:
"Look at my hands" (SdmHa) of the Federal Association of Protestant Aid for the Disabled. For the initiation and promotion of language of non-speaking people with a cognitive disability. It is important to

bear in mind that the signs were not taken from a sign system, but different, partly modified signs were used.

Signs Aided Communication (GuK) by E. Wilken:

Originally developed for children with Down syndrome, this is a card set that appeals to both children and adults. The first set is based on SdmHa, the second set on DGS, so it is more recommended for children who are temporarily dependent on sign language support.

The MAKATON language development approach from England, named after the speech therapists Margret Walker, Kathy Johnston and Tony Conforth already includes the combination of sign and graphic symbol, which are learned in 9 steps. This was adapted for Germany by Gudrun Siegel using DGS. Special MAKATON baby signing courses, which are particularly suitable for inclusive support, are also offered.

A critical appraisal with advantages and disadvantages of the individual collections can be found in Wolf, 2015, pp. 7-12.

How should signs be presented?

It is important to ensure that a chosen sign system is used as consistently as possible in all areas of application (signs, picture books, videos, etc.) in order to avoid confusion due to different hand signs or differences in meaning. If a child has developed its own signs, these can of course also be used and, if necessary, relearned later with corrective feedback - the aim is always successful communication!

Signs should always be made clearly with facial expressions, mouth pictures or spoken language clearly visible in front of the body.

In order to promote a meaningful language structure from the beginning, it is essential to use core as well as peripheral vocabulary with verbs and "little words" and not only nouns.

Ideas for promoting sign acquisition:

Ideally, professional diagnostics should be carried out by speech therapists/social pediatric centres before selecting the sign system or sign collection to be used. In early development, the "Assessment of communicative abilities" according to I. Leber, "Schau hin" (Rehavista) or the "Target groups of augmentative and alternative communication" by Weid-Goldschmidt or diagnostic questionnaires by Boenisch and Sachse (see Nonn, 2015, p. 100 ff & Kaiser-Mantel, 2012, p. 43 ff) have proven themselves as diagnostic procedures.

Then, taking into account the child's overall stage of development, the communicative necessities of everyday life, but also his or her special interests, a joint decision is made as to which signs should be used in the future. To begin with, it is advisable to select a few signs that require only simple motor skills, have a high communicative and content-related significance and are oriented towards the topics of the immediate area of life.

In order to enable the child and its communicative environment to learn signs, it now needs an attractive, high-frequency offer with sign language role models who react flexibly to the child's communication wishes and have the corresponding knowledge. Signs should be used throughout the child's environment - at home, nursery or pre-school.

In addition, the acquisition of sign language is specifically promoted in speech therapy or in support units and the communication partners are instructed on how they can be good sign language models for the young UK learner. (Modelling)

It is helpful to place the signs in places where they will be used (e.g. the signs around washing and brushing teeth in the bathroom).

If an "I book" or "Book about me" exists, the current signs should also be listed there or, for children who already know many signs, the sign system used should be mentioned.

In addition to everyday situations, signing can be practised in a parent-child signing group, in the crèche and kindergarten especially well when singing songs (see appendix "Support materials and sign collections") and offering finger games in a playful way.

Signs can also be used wonderfully when looking at picture books or reading aloud. There are now some picture books that are already equipped with signs. If these are not at hand, the most important signs can also be stuck directly into the book with Velcro dots. Of course, it is important to make sure that the books are oriented towards the topics and interests of the children, as this will lead to greater learning success. Books with refrains or repetitive text elements are recommended, as the signs are easier to learn through the given repetitions.

Since you need your hands to sign, it is helpful to use the book placed on a desk.

In order to introduce current signs, the "sign of the week" can be established. This seasonally or thematically appropriate sign can be distributed by e-mail, on the information screen or as a notice in the institution and the parents' house. Signs can also be added to the digital shuttle book between the parents' home and the institution, e.g. in the "GoTalkNow" programme.

Thematically arranged "story boxes", e.g. on seasonal themes or stories, filled with real or miniature objects, matching smelling boxes and symbol cards can be extended with signing cards.

For strongly visually oriented children who already develop or have an understanding of symbols, signs can be combined with symbols (e.g. metacom symbols according to Annette Kitzinger) in the sense of a multimodal approach.
This can also be used to make Memories (symbol card plus sign) or Lotto games for kindergarten children

Further possible applications of gestures:
Use of signs in the case of multilingualism:
Signs also help multilingual children with language acquisition, as they can be used in all the languages used and help the toddler to learn to distinguish between the languages. Baby signs or LUG are good to use here.
These children often also benefit from clarification of articles, question words or prepositions using PMS hand signs (see Kaiser-Mantel's tables in the appendix).
PMS also helps children with apraxia of speech to differentiate sounds tactilely and kinaesthetically.
Preschoolers/school children with dyslexia or children with autism spectrum disorders (ASD) can also benefit from using them.
Use of signing with children with sensory disabilities:
Care must always be taken to wear aids such as glasses, contact lenses, hearing aids or CI implants so that the child has the best possible perception possibilities.
Children with persistent profound hearing loss, or deaf children without severe cognitive impairment, benefit greatly from learning a complex signing system because they are likely to use this throughout their lives and therefore need a communication system that allows for all linguistic utterances and can be signed quickly.

Children with visual impairments:
For these children, ensure good lighting without shadows, clear contrasts and that the signs are presented in the area of best vision (appropriate distance, appropriate orientation). If this is unclear, it is advisable to consult an orthoptic specialist.
Wearing white gloves, using finger puppets or nail polish may also help to draw attention to the hands.
Deafblind children:
They learn to feel the gestures. The receiver of the message feels or palpates the sender's signed utterance with his hands.

This form of signing is difficult to learn, especially for children born deafblind. It can help to give real or miniature objects in the hand for the signs to be learned in order to link the sign with the object in a meaningful way. The sign system "Porta" (formerly Tanne) of the Swiss Foundation for the Deafblind is especially adapted to the needs of deafblind people - however, it should be noted that the signs are taken from the Swiss-German Sign Language (DSGS).
References to sign collections or sign systems (some with videos), sign lexicons, courses for learning sign languages, picture and song books together with play suggestions can be found in the following appendix.

APPENDIX:

Songbooks:

Butz, B. & Mohos, A. & Kindl, M. (2017). Singing, playing, telling with children's signs (book incl. sign video clips). Münster: Ökotopia

Butz, B. & Mohos, A. (2019). Spring, Summer, Autumn and Winter with Children's Signs (Book incl. Sign Video Clips)

Leber, I. & Spiegelhalter, J. (2020). Singing with your hands. A children's songbook for young and old with signs from DGS, MAKATON or "Look at my hands". Von Loeper Literaturverlag

Michel, A. (2019). Chief speaking hand: Sign songs for the vocabulary box with German Sign Language signs and many play ideas. Von Loeper Literaturverlag

Wilken, E. (2018). GuK mal- Songs and speech verses to accompany GuK. German Downs Syndrome Infocentre.
https://shop.ds-infocenter.de/de/foerdermaterial/guk-mal-sprechverse-und-lieder-mit-guk-begleiten?xd8535=77448948df7975d36c991724e1005cd8

Picture books with signs:

Butz, B. et all. (2015/2016). Otto plays, Otto goes for a walk, Otto goes shopping. Publishing house Kindergebärden

On the website "Talking Hands" you can find more play suggestions
https://kindergebaerden.info/spielidee-fuer-otto-spielt/

König, V. (2015). Discovering the world with baby signs: animals in the garden. Publisher Dwarf Language

Smith, S. (2018). Exciting things for toddlers in DGS. Greetings and manners, colours, weather, creepy crawlies, birthday song. Stockton -on-Tees: Co-Sign Communications
Wulf-Schäfer, M. (2014). Various sign picture books with the storytelling characters Nora and Ben. E.g. Nora and Ben at the playground. Karlsruhe: Loeper

Baby gestures:

Baby signal by W. Gericke. Talking with the hands- courses etc
https://www.babysignal.de/
Zwergensprache by König, V. With babies on the way to language. Here you can find baby signs, courses, training opportunities http://babyzeichensprache.com/
Baby Signs by Hagemann, K. Hilf mir es selbst zu sagen. Baby signs, courses, literature
https://www.babyzeichen.info/Das-sind-Babyzeichen.40.0.html
German finger alphabet
https://www.gemafa.de/fingeralphabet/

Sign language encyclopaedia online" Spread the Sign"- internationally used sign language systems
https://www.spreadthesign.com/de.de/search/by-category/
Learn to sign, online (signs sorted by different areas, also parent sign course)
https://gebaerdenlernen.de/
"Das Vokabelheft" General online sign dictionary of the University of Hamburg http://www.sign-lang.uni-hamburg.de/alex/index.html
Link collection to sign languages of different countries
https://www.taubwissen.de/content/index.php/sprache/andere-gebaerdensprachen.html

Lormalphabet
https://stiftung-taubblind-leben.de/public/dateien/lormen_alphabet.pdf
PMS phonetic hand signs in: Kaiser-Mantel, H. (2012): Unterstützte Kommunikation in der Sprachtherapie. Building blocks for working with children and adolescents.
Munich, Basel: Ernst Reinhardt
https://www.reinhardt-verlag.de/_pdf_media/Zusatz1b_PMS-Lauthandzeichen_DINA4_02263.pdf
Kestner, K. Hausgebärdensprachkurs für hörgeschädigte Kinder, Verlag Karin Kestner
https://web.kestner.de/shop/lernen-lehren/hausgebaerdensprachkurs-fuer-hoergeschaedigte-kinder/

Find home sign language classes for parents and children:
https://www.kenhilfe/liste/gebaerdensprachkurs-liste1.htmstner.de/n/elter
Kestner, K. S. (2017). The great dictionary of German sign language. Karin Kestner Publishing House. Also available as an app:
https://web.kestner.de/das-grosse-woerterbuch-der-dgs-app-fuer-ios/
MAKATON Signs. Mainz: Makaton
https://www.makaton.org/
Malottke, K. Children's Signing Courses Magical Baby Hands
https://kelly-malottke.de/zauberhaftebabyhaende/
Malottke, K. (2015). Kindergebärden Stundenbilder (Band 1): Meine bunte Gebärdenwelt (mit Kurshandbuch und Arbeitsmittel). Loose-leaf collection
Malottke, K. Sign lexicon with 80 signs https://kelly-malottke.de/babygebaerden-onlinelexikon-mit-80-gebaerden-dgs/
Porta (formerly Tanne) Signs in DSGS. Swiss Foundation for the Deafblind. Signing, courses, Porta App
https://www.tanne.ch/porta
"Look at my hands" by the Federal Association of Protestant Aid for the Disabled. Source of supply for book, sign collection DVD or app:
http://www.schau-doch-meine-haende-an.de/bezugsquelle.html
SIGNbox 1+2 The sign box- also available with poster
Source of supply:
https://www.os-hho.de/sign-angebote/gebaerden-mit-sign/produkte-signbox-co/signbox-i-signbox-ii/
Talking Hand Flipbook. Sign flipbook makes signs as visible
https://talkinghandsflipbooks.com/home
Wilken, E. GuK 1, basic vocabulary; GuK 2, advanced vocabulary; GuK plus, supplementary signs for school. Also available as CD. German Downs Syndrome Infocentre. https://shop.ds-infocenter.de/de

The perception of the environment with the sensory systems is a process that takes place continuously throughout life. Sensory systems are already created prenatally in the womb and are partly active prenatally. The process of perception only ends with death. The perception of the environment is individual for every living being. With their sensory systems, humans, like other higher creatures, absorb information from the environment. A large part of the perceptual impulses received is not consciously processed in the brain but filtered out at deeper levels of the central nervous system. It is assumed that only about 10 percent of all perceptions are consciously evaluated by the central nervous system. The consciously perceived information is evaluated in the cortex and always results in motor activity as a reaction. The transmission of sensory impressions to the central nervous system takes place via the afferent nerve pathways. The stimulus response, which is transported from the brain to the executing organs, takes place via the so-called efferent nerve pathways.

A sensory system never works singularly, but always in complex neuronal networks with other sensory organs and other body structures and organs.

Humans have 7 sensory systems. These sensory systems are divided into distance and near senses.

The following sense organs form the near senses:

Sense of touch or tactile system, the sensory organ is located in the skin and is the largest sensory organ in humans

Sense of balance or vestibular system. The sensory organ is located in the inner ear.

Deep sensibility or proprioceptive system. The sensory organ is located in the tendon and muscle spindles and in the connective tissue sheaths of the muscles.

Sense of taste or gustatory system. Here the tongue forms the organ of perception

The sense of touch and depth sensitivity are combined in the literature and described as the tactile-kinaesthetic system.

Proprioception, vestibular system and tactile system are called body senses

With the near senses, the source of stimulation is directly on the sensory organ. For example, food rests directly on the tongue. In the area of the sense of touch, one feels touch, warmth, cold or texture through direct contact with the skin.

The following sensory systems make up the remote senses:

Vision or visual system, the sensory organ is the eyes

Hearing or auditory system, the sensory organ is the ear

Smell or olfactory system with the sensory organ nose.

With the remote senses, the source of the stimulus is distant from the sensory organ. I perceive a cloud at my eye, although it is hundreds of metres away. I hear the singing of a bird even though it is not directly at my ear. I smell the fragrance of a food without having to bring my nose into direct contact with the food.

Neurophysiology also describes the so-called chemical senses, which include the gustatory and olfactory senses mentioned above.

The body senses (tactile system, proprioceptive system and vestibular system) are called basic senses in therapeutic literature. A more current term is basic perceptual areas. Many therapeutic concepts refer to these three sensory systems and use them in therapy. They form the basis of all learning.

In modern therapy, the treatment of motor and sensory disorders is no longer considered in isolation. Rather, sensory stimuli are used to favourably influence motor activity. In the same way, motor activities are used to influence sensory systems.

This is due to the afferent and efferent parts of the nervous system that work together in stimulus reception and response.

Thus, the therapy concepts have also changed and in the different therapeutic concepts, parts of the respective other concepts can usually be found. Parts of sensory integration can be found in the Bobath concept, parts of the Bobath concept in the Castillo Morales concept and so on.

Especially when working with complexly impaired people, the pure and exclusive use of one concept is often not effective. The experienced therapist will always use helpful approaches from different therapy concepts and apply them in a client-centred way.

In addition to therapy, the treatment and promotion of the basic perception areas also has a high priority in modern supportive care. Here, the concept of basal stimulation by Professor Fröhlich and the nurse Christel Bienstein was groundbreaking.

The following concepts are generally known and use the basic perception areas therapeutically: Sensory integration according to Jean Ayres, Bobath concept, Basal stimulation, Castillo Morales Concept, Padovan concept, Takt-Kin concept

General principles of treatment in the concept of sensory integration

Sensory integration deals with the interaction of the body's senses and motor functions. We assume that there can be insufficient and inaccurate perception in the sensory areas. As a counterpoint, perception beyond the tolerable level is possible. Sensory integration tries to promote a function of the body senses that is as balanced as possible.

People with complex disabilities are not diagnosed with sensory integration disorder. The symptoms of a complex disability go well beyond a Sensory Integration Disorder. Nevertheless, knowledge of the Sensory Integration Method helps us to better understand the behaviour of people with disabilities. Sensory therapy services can contribute to the well-being of people with disabilities, promote emotional security and support the acquisition of action skills.

Sensory integration deals with the following environmental stimuli:

- Vestibular stimuli
- Proprioceptive stimuli
- Tactile stimuli.

Sensory integration therapy includes the following building blocks:

- Dealing with sensory stimuli (tactile, vestibular, proprioceptive)
- Orientation on one's own body (imagination of body parts, imagination of movement possibilities, spatial orientation on the body)
- Orientation in space (locomotion, estimation of distances, estimation of obstacles, estimation of speed of movement)
- Body coordination (moving skilfully, handling objects skilfully, coping skilfully with challenges relevant to everyday life).
- Learning from motor challenges (choosing the right level of difficulty, motor adaptation to movement challenges, developing courage and confidence).
- The self actualisation of the human being (drive and motivation, confidence in one's own abilities, developing competence to act)
- The regulation of the arousal level (arousal)

(from advanced training in sensory integration therapy, Erhard Beer, at the Institute for the Blind in Munich, 2003. Erhard@ergobeer.de)

Diagnostic assessment in sensory integration

The "targeted observations" provide a task compendium of about 50 motor tasks and offer interpretations of task performance. For people with complex impairments, the targeted observations are often not applicable. The therapist is dependent on the observation of everyday situations.

The following areas are observed/assessed diagnostically:

Observations on coordination:

- Postural control
- Movement control
- Body side integration
- Skill
- Dissociation (the ability to perform isolated movements)

Observations on the psyche/emotion

- Self-update
- Emotion
- Drive
- Attention

(from advanced training in sensory integration therapy, Erhard Beer, at the Institute for the Blind in Munich,

Treatment principles in sensory integration

Sensory integration is not an exercise treatment. Rather, motor challenges are offered and mastered together in a playful setting. Special therapy materials are used for this as well as everyday objects and the normal environment. The therapist is responsible for designing the therapy framework. The choice of specific activities is in the hands of the child. The therapist is responsible for dosing the stimulus supply and thus ensuring optimal arousal. Sensory Integration treatment always involves active activity. Passive stimulation by the therapist is not Sensory Integration treatment. However, they can be justified in the context of people with disabilities.

- Fidelity measure: Therapy principles
- Providing opportunities for sensory input
- Offering just the right challenge
- Help with the decision for therapy activities
- Support for an optimal arousal
- Support for self-organisation
- Creating a playful framework
- Ensure maximum success of the child
- Ensure physical safety
- Spatial design to motivate and involve the child

(from advanced training in sensory integration therapy, Erhard Beer, at the Institute for the Blind in Munich, 2011. Erhard@ergobeer.de)

PRINCIPLES FROM PEDAGOGICAL CONCEPTS

TEACCH APPROACH

MUSICAL ELEMENTS AS A RITUAL IN EARLY INTERVENTION

POSSIBILITIES OF AROMATHERAPY IN EARLY INTERVENTION

BASAL STIMULATION

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TEACCH - APPROACH

TEACCH means "Treatment and Education of Autistic and related Communication handicapped Children", which was developed at the University of North Carolina/USA. The aim was to actively involve parents in the support of their autistic children. The TEACCH program emerged from the research project in 1972. due to the initiative of many parents.

Principles of the TEACCH program:

- Understanding the typical difficulties of people with autism
- Individual diagnostics and support
- Cooperation with parents/families
- Optimizing the ability to cope in one's living environment
- Holism (promotion of all aspects of the personality)
- Competence orientation and respect for difference
- Structuring, cognitive approaches and behavioral theory

The elements should give the children more clarity and orientation: a map or compass, which gives them security and makes learning possible.

The elements of the TEACCH approach that can also be used in early intervention for multiply impaired children are explained in more detail below.

Structure

Through clear structuring, the children are to be made aware of meanings, connections are to be clarified and skills are to be taught in order to better cope with everyday life.

Five aspects are considered:

1. Structuring space
2. Structuring time
3. Organization to carry out an activity as independently as possible (work organization) and
4. Structuring of tasks or design of working materials.
5. Practising routines, i.e. courses of action that prescribe a certain procedure for certain recurring problems or situations (cf. Houses).

The concrete form of structuring on these different levels can be completely different and depends entirely on where the respective difficulties lie and what can be filled with meaning for the person

concerned. Likewise, it must be decided individually in each case which aspects should be structured to what extent.

Helpful questions:

(1) Does the person know where things are or where they are supposed to be?

(2) Is he aware of what is coming and when something will happen?

(3) Does he know which tasks to do and in what order?

(4) Is there clarity about how to handle the material and how to complete the task?

(5) Does the person have a strategy to deal with certain recurring (problematic) situations, such as finishing an activity, for example, by the gesture "done", starting an activity systematically or using aids independently?

Examples of spatial structuring:

- Room dividers (e.g. shelves)
- Carpets that mark specific areas
- Lines on floors
- Assignment of objects to specific places
- Images

Examples of temporal structuring:

- Bell
- Signals
- Starting and ending routines like a gesture
- Schedules at the appropriate level of abstraction

Examples of structuring material and tasks

The tasks themselves should also be structured in such a way that they can be carried out as independently as possible. The basis for this is that the requirement profile of the task is individually adapted. This means that the requirements of a task in the different areas such as motor skills, language, eye-hand coordination, problem solving, etc. should be designed in such a way that the child can cope with them.

A first possibility is to put a game in a box on the left side of the child and when the game is finished it goes into the box on the right side of the child (finished box).

Visualization

Visualization was included because people with autism prefer the visual channel as it is more consistent and explicit than speech. For visually impaired children, clear picture cards adapted according to the low vision criteria can be used for this purpose.

Here, too, visualization refers to the dimensions of space, time and action. In visualization, for example, functions can be better conveyed through visual barriers in the room (e.g. shelves) that separate the individual areas (work, break, etc.). Furthermore, the individual areas can be marked with symbols or real objects (e.g. headphones for the break area, room signs for orientation in the school building) or shelves/cupboards can be labelled with photos/symbols.

For temporal visualization, for example, visually vivid daily schedules can be designed.

For the action, for example, table sets with plate, glass and cutlery imprints can help as a guide for setting the table.

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MUSICAL ELEMENTS AS A RITUAL IN EARLY INTERVENTION

Rituals give people security and support and are also an important element in early intervention units - whether at the beginning of an encounter or when saying goodbye. They form an important support for the children with disabilities, as well as a reliable framework. The possibility of recognition and the resulting attention is important. Depending on rhythm and melody, different effects can be achieved on the physical and psychological level. Simple offerings such as breath, voice, simple clear tones producing instruments (such as drum) reach even severely multiple handicapped children in poor health and can make these children calm down, relax and also become attentive. One reason for this is that biological sounds of the mother as well as external sounds can already be perceived in the womb and infants have a differentiated hearing for different pitches from birth and recognize the mother's voice in particular. Therefore, music therapy appeals on a primal level.

Multiple handicapped children with visual impairment need to a high degree:

- physical closeness to be able to have direct experiences at all and to overcome fears and insecurities
- stimulation for all available senses
- Acceptance of their otherness
- Reliability of the interaction and structuring of the offers

For each child, regardless of the level of impairment, a ritual can be found that signals the beginning and end of a lesson. It is crucial that this is authentic to both the child and the early interventionist. If possible, this also provides a good basis for establishing eye contact under favourable conditions (appropriate light, suitable sitting or lying position of the child, the early interventionist).

Usually short songs are suitable, which are adapted to the age and the possibilities of the child. If sign language can be used to accompany this, or if the child can be involved with various movements, the first dialogues often begin, even for children who do not speak, and this sets the mood for the following time together. Alternatively, this can also be a saying, a little finger game or something similar. Furthermore, this can also be used to let a repetition take place, or to "ask" the child for a repetition. It may also be possible for the non-speaking child to express a "again" through some channel of communication - for example, a smile, a body movement, or a raising of the eyebrows. In this way, the child can experience a form of self-efficacy and become involved in the dialogue. To do this, it is crucial to give the child time to act - in whatever form - after the ritual. It may also be possible for the child to express through his or her facial expressions, gestures and body language that he or she has enjoyed the ritual, and so, for example, a smile is interpreted as a "do it again".
The importance of rituals is particularly evident in the reaction of older children who have been accompanied for several years. Often the children demand exactly these songs, which they have known from an early age and which have accompanied them the entire time. Because singing and making music together is fun!

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POSSIBILITIES OF AROMATHERAPY IN EARLY INTERVENTION

The sense of smell is often neglected in early intervention, although it is very impressive and olfactory experiences can be remembered well over years, some even over a lifetime. For example, everyone has clear memories of what Christmas smells like. When specific smells are perceived, we usually also immediately have associated emotions as olfactory experiences have close neural connections to the limbic system through subcortical processing.

For children who have problems with vision, the sense of smell can be an additional and important orientation, e.g. by using smells in the context of referrals - e.g. smell of shampoo before washing the hair as an orientation for the child what happens next.

In the context of aromatherapy, the proven active ingredients of essential oils should have a positive influence on the child's individual state of mind. In early intervention, we can use elements of aromatherapy, especially to support the regulation of children with multiple disabilities who are often over-excited, over-sensitive, anxious or even listless. This can be particularly helpful with sleep and crying problems in the context of introducing a calming ritual.

The consent of the parents and the attending physician should be sent in advance before starting the mindful application.

Application:

Essential oils should always be naturally pure and well-known and established manufacturers should be used. As a general rule, less is more and thus never more than a maximum of 5 drops of the oil should be used:

- Direct use of the essential oils e.g. on the child's pillow or fragrance lamp.
- Indirect use of the essential oils on the skin, by adding them to fatty base oils such as jojoba oil or to odourless creams, e.g. in the context of massages (5 drops to 50 ml base oil).
- The oils must never be applied pure to the skin!
- Soothing and relaxing oils are e.g. lavender or orange blossom.
- Balancing and regulating oils are e.g. rosewood or geranium.
- Restorative and invigorating oils are e.g. lemon or Swiss stone pine
- Mood-enhancing oils are e.g. orange or rose.

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BASAL STIMULATION

The concept of basal stimulation, which was founded by Andreas Fröhlich and his colleagues in the 1970s and has been continuously developed over the last 40 years, is about creating contact between people with severe disabilities and their social and emotional environment.

The dialogue-communicative concept gives us the opportunity to build a relationship with these children through touch and movement and to open up their isolation (at least temporarily). For this, the child does not need to have any prerequisites or previous knowledge – only his being is important. Basic activities can serve as a stimulus for the children with multiple disabilities, as compensation for the lack of their own active experiences.

We offer these children - individually adapted - somatic, vestibular and vibratory stimulation. These stimuli must correspond to the speed of perceptual processing, the state of alertness and the needs of the child.

- The child's communication signals must be closely observed reactions to our offers (e.g. through changes in breathing, eye movements, facial expression, changes in tone).
- Systematically offered, body-related basal experiences support the development of their trust. They give the child orientation and security for joint activities.
- Basic activities provide the child with information about his or her own body and about the environment.
- Through the targeted stimulation of all senses, the child learns experiences as pleasant, in contrast to many physically stressful experiences and medical necessities in their everyday lives.
- Curiosity can be awakened muscle tone and breathing can be influenced and thus a piece of well-being and more quality of life can be made possible.
- In basale stimulation we are always in very close contact with the children. The balance between closeness (too much is encroaching) and distance (too far away to be noticed) has to be adjusted individually.
- For a professional shaping of relationship and encounter, professional touch with adequate quality of touch while respecting privacy despite physical closeness is therefore of particular importance.
- It is also important to maintain an open and continuous dialogue between the professionals and the parents or relatives.

Basal stimulation in concrete terms:

The basic areas of basal stimulation go along with the early intrauterine experiences of an infant:

1. Somatic stimuli: Our skin is the largest of our organs and we make contact with the outside world through it. Many of the children can only move a little and therefore have a distorted image of their body. Through specific stimulation of the skin and muscles, we try to create positive experiences for the child with his or her body. Materials such as skins, brushes and touching with the hand or with oils and creams should give the child a better feeling for its own body and also have an emotionally stimulating and stabilising effect. These activities can be well combined with body care, e.g. massages after a bath or when changing diapers.
2. Vibrational stimulation : These offers help to feel bones and joints. Experiences that a healthy child can experience for itself early as an infant, e.g. by kicking, grasping, holding and letting go, and later when learning to walk and jump. Manual vibration, starting from the outer ends of the extremities (not on the muscles!) allows multiply disabled children to feel their whole body. Many children become very silent and alert and look forward to repetitions of these stimuli and show a general good relaxation afterwards.
3. Vestibular stimuli: The vestibular system gives the child feedback about its position in space and about changes in position. Stimuli can be, for example, moving slowly back and forth on a large ball or rocking in a hammock. These stimuli, if they are individually adapted to the needs of the child, help many children to relax and the muscle tone to return to normal for a period of time.

What is important here is not the mechanical offer imposed from outside, but the precise observation and the joint doing. Entering into somatic dialogue in the sense of swinging and moving together. The support through basal stimulation should also be embedded in a rhythmic daily routine with active phases and rest phases for the child.

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SECTION B

VISUALLY IMPAIRED CHILDREN WITH ADDITIONAL DISABILITIES

IMPLICATIONS OF MULTIPLE DISABILITIES

WHAT DOES MULTIPLY DISABLED MEAN?

If a child is affected by a multiple disability, a multitude of challenges usually begin for the child itself and its environment. In addition to the painful confrontation with the topic of multiple disabilities or the threat of multiple disabilities, there is also the exchange with medical institutions such as clinics, doctors in private practice and medical therapists as well as the confrontation with authorities such as health insurance companies. Treatments must be weighed up, aids must be applied for and their cost must be clarified, decisions must be made about suitable therapies and much, much more.

But what do we actually understand by multiple disabilities and what consequences can be derived from the understanding of this for a system of early support, such as early intervention is?

The difficulties of defining a term begin, for example, in the German-speaking world with the frequent synonymous use of terms such as "multiple disabled", "severely disabled" and "severely severely disabled" or "severely multiply disabled" without a clear demarcation between them.

The nature of the question and the occasion also open up different ways of definition. A person who is classified as having a "severe disability" according to official criteria may be able to go shopping independently and provide for themselves in some areas of life. A child who is classified as "severely multiply disabled" according to special educational criteria may be dependent on full support in all practical areas of life for the rest of his or her life.

And in international comparison, the understanding of (multiple) disability is of course also shaped by the particularities of a respective culture and social system.

At the very least, it can perhaps be generalized that these terms are intended to express a "gradual and not fundamental difference in the degree of a disability compared to a lighter disability"[1].

Speck suggests that the concept of multiple disabilities should at least be differentiated into

"1. multiple disability in the sense of multiple impairment" and

"2. the complexity of a disability, which manifests itself in the simultaneous and interacting impairment of several psycho-social functions". [2]

Speck also speaks of "intensive mental handicap" in this context, referring to a "condition" that "arises from severe and complex blocks to action and in which neuronal and mental concepts and structures can only form in rudimentary form due to being largely disengaged and out of general experience" (Speck 2005, 270). "We as non-mentally handicapped people cannot define it (the intensive mental

[1] Hahn, quoted by Samara 2015, 28

[2] Bacon 2003, 195

handicap - author's note) so easily. Responsibility for these people demands that we do not absolutise our own view and take attempts at definition only on the basis of respect for them" (Speck, 2005, 43). "Multiple disability is not a double, triple or sixfold disability, where each additional disability demands special respect from us, as if we were admiring a six-part fugue in music; each accumulation is a phenomenon with its own laws, with special diagnostic and methodological problems, and should be seen and approached as a 'disability' as complex as it presents itself in life" [3](Schröder 1979, 228).
Severe disability is not something shaped by fate, but a social phenomenon, i.e. severe disability is "something that has developed in the context of people's social lives and can only be understood in this context" (Dreher cited in Heinen & Lamers 2003, 32).
The "severely disabled" are "dependent on being understood by the caregiver in order to realize their wishes and needs" (Fornefeld 1995, 48).
The term severe disability always means a severe form of multiple disability as an accumulation of different forms of disability" (Fornefeld 2009, 108).
Fröhlich places the immediacy of perception and expression and the aspect of physicality at the center of an attempt at description: "They perceive other people through skin and body contact. They can gather and evaluate experiences directly with their bodies. They experience themselves, people and things in direct involvement. They use their entire corporeality to express and communicate themselves" (Fröhlich 1997, 148).

A multi-perspective approach

In the publication "Unterricht und Förderung von Schülern mit schwerer und mehrfacher Behinderung" (Teaching and Support of Pupils with Severe and Multiple Disabilities) by the Bavarian *State Institute for School Quality and Educational Research*[4], a group of authors approaches the concept of (severe) multiple disabilities through different approaches, thus pursuing a multi-perspective approach.
The concept of multiple disabilities or severe multiple disabilities is considered from the following perspectives:

- Description through exemplary individual cases
- Common features
- Specific support needs

[4] Cf. State Institute for School Quality and Educational Research, 24ff.

- ICF model

Even though this approach is an approach to school-age children and adolescents, many parallels can be drawn to the age range of early intervention.

Description through exemplary individual cases [5]

By compiling four portraits of children and young people of school age[6], the authors illustrate the heterogeneity of persons with severe and multiple disabilities. Each portrait begins with a typical situation from every day (school) life described by a reference person. In addition, the authors explain the individual characteristics and developmental conditions of the two girls and the two boys using several categories such as *communication*, *basic vital function*, *emotionality and behavior, senses and perception*, *cognition* or *ability to act and care.*

Description through commonalities [7]

In order to arrive at learning approaches, conducive conditions and suitable impulses, the group of authors in a further step lists common characteristics that connect people with multiple disabilities. According to this, these are above all:

- Multiple disability: "Severe disability (...) always means a form of multiple disability as an accumulation of different forms of disability" (Fornefeld 2009, p. 18). Often there are additional health burdens"
- High need for support, high need for therapy: Need for specific stimulation and support through access to educational and therapeutic services
- Lifelong dependence and care needs
- Need for individual attention and direct contact: (...) are highly dependent on familiar, reliable structures that provide security. For rapprochement and understanding, persons must be available who are willing to engage in a common journey.
- Need for adaptation of the environment
- Need for communication support

ICF and specific support needs [8]

The authors see another way of approaching the phenomenon of "multiple disabilities" and thus formulating a specific need for support in the approach of the International Classification of Functioning, Disability and Health, [9]ICF for short.

[5] Cf. State Institute for School Quality and Educational Research, 24ff.
[6] The examples are pupils who are personally known to the author team
[7] Cf. State Institute for School Quality and Educational Research, 32f.
[8] Cf. State Institute for School Quality and Educational Research, 34ff.

An important advantage in the ICF is that it uses a cross-professional, precise and transparent language and thus provides a basis for interdisciplinary work.

As a bio-psycho-social model, the ICF takes into account both the area of functioning/disability itself and so-called contextual factors in its approach.

In the recent past, other authors also refer to the concept of the ICF when describing people with (severe) multiple disabilities. The emphasis is mainly on the dynamic interaction and complex relationship between these factors and components. [10]

What does multiple disabilities mean for the concept of early intervention?

In the previous chapter, the challenges of defining multiple disabilities were presented. Different points of view in turn open up different perspectives and can provide answers to the question of learning access, pedagogical and therapeutic concepts, environmental conditions (also of a structural nature) or socio-legal issues. In an international comparison, the perspectives are further broadened by cultural and social differences, but also by structural circumstances and conditions.

With regard to the age group of children in toddler and preschool age, numerous parallels to other age groups of people with multiple disabilities can be seen. In addition, there are special challenges for these children and their families:

+ A final diagnosis and resulting developmental prognoses are often not yet conclusively clarified

The parents are highly unsettled by the flood of medical information and the resulting conclusions about action - such as medical and nursing activities like monitoring.

+ Their perspective on life changes radically and they have to incorporate innovations into their planning and organization as a result

From the very beginning there are great difficulties in "reading" their child, which leads to problems in the development of parental skills and parent-child interaction.

+ Processing the diagnosis can be accompanied by great anxiety at the beginning.

Therefore, early interventionists need to consider other things:

- The need for permanent interdisciplinary and multidisciplinary cooperation with all medical and therapeutic stakeholders. This can be complicated by the high complexity of this network, e.g. participation of many doctors from different specialities, different clinics, various medical-

[9] U.a.: https://www.who.int/classifications/international-classification-of-functioning-disability-and-health (Stand 12.01.2021) und https://www.dimdi.de/dynamic/de/klassifikationen/icf/ (Stand 12.01.2021)

[10] Cf. Heinen, Lamers 2003, 33

therapeutic therapists and different educational institutions. The concepts differ and the goals can be very different.

- A multiple disability is not a mere addition of the different disabilities, but rather a multiplication of them.
- The work with parents is often very intensive and emotional and there are far-reaching requests for support and advice, which in many cases go far beyond the actual early intervention work with the child and the family. Here, the focus is on good networking with other institutions, such as the supplementary independent participation counselling, which can help to cope with these additional tasks.
- The choice from different concepts and approaches to developmental support depends on the individual prerequisites of the child and his or her family and therefore a high level of professionalism and willingness to deal with new (pedagogical as well as medical, therapeutic) concepts is necessary.
- The flexibility of the early intervention specialist is often required, especially in terms of time organization, e.g. because of breaks due to hospital stays or the presence of other therapists, but also in terms of content, in order to adapt individually to the changing child and the current family situation.
- Dealing with regressions due to accompanying health problems is not only a challenge in terms of content, but also in the process of support planning and evaluation.

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VISUAL FUNCTIONING IN VISUALLY IMPAIRED CHILDREN WITH ADDITIONAL DISABILITIES

VISUAL IMPAIRMENTS IN MULTIPLY DOSABLED CHILDREN

Vision provides information about the environment, about the things and people that surround us. Visually, we can orientate ourselves at any moment, reassure ourselves about where we are. Seeing facilitates communication by constantly providing us with information about the other person's state of mind when we can read their facial expressions. Vision, when it is good, constantly provides us with information about distant objects and events and thus makes a degree of overview, foresight and planning possible that cannot be achieved with other senses.

However, truly useful visual performance suitable for everyday life requires a high degree of attention, memory and thinking functions. Only their interaction guarantees a coherent and meaningful visual perception that is necessary for mastering everyday life.

In all these areas, severely disabled people have massive limitations. It starts with the restriction of visual curiosity and independent search activity, which are the very hallmarks of vision in severely disabled people.

You have to be awake, alert and curious to look for things in the environment that you like, that you could get, that you could play with, that you could eat, that could benefit you in some way.

If you want to look around, head control and agility are prerequisites. But you also need to have a minimum level of visual acuity, contrast vision and visual field to be able to gather worthwhile information. Above a certain degree of visual impairment, when differences in brightness and color fade or images are incomplete due to visual field defects, stimuli can no longer be interpreted appropriately. The images are then so vague, so unclear and unreliable that it is better to do without them. Then our brain says: "I can't do anything with that! Even if I try hard! I'd rather close my eyes! " It is understandable and "biologically" sensible that vision is often not the preferred perception for multiply handicapped children with a visual impairment. It brings little benefit and is often exhausting and confusing.

Good vision is sharp, it is accurate, it works very quickly. It is robust in the sense that it works in a wide variety of situations under almost all boundary conditions.

Vision in people with multiple disabilities is mostly imprecise, it is slow and prone to interference. It may not work at all times of the day, not in all positions and not under all visual conditions. It may only work in a darkened room, perhaps only when there are no other disturbing stimuli at the same time.

For many children, hearing, touching and feeling are therefore less demanding and more useful. They do not use their sight because elementary, tangible or audible stimuli are obviously much more significant

for them. They are also easier and safer for their brain to process. They do not use their vision because it is easier and more profitable for them to process tactile information or because it is easier for them to orient themselves to sounds. Or they do not do it because their perceptual competence does not allow them to process information from more than one sensory channel.

However, we have made the experience that in the vast majority of cases it is not a question of "either seeing or not seeing", but that through comprehensive diagnostics it can be specified whether and which possibilities of seeing exist in the concrete case in individual areas of life and what the necessary boundary conditions are for this.

When it comes to the vision of multiply disabled children, i.e. mostly brain-damaged children (see chapter CVI), there are always general performance deficits in the sense of

1.) a slowdown in any task to be performed visually in particular also a slowing down in search and exploration behavior and in gestalt acquisition)

2.) a reduction of the attentional capacity, connected with the reduction of the ability to perceive differences in detail

3.) a reduced resilience, i.e. temporal limitation

4.) increased distractibility

Summary of the difficulties of vision for the multiply disabled visually impaired child

These are:

1.) Weaknesses in perceptual reception: The visual impairment provides the brain with little sharp, distorted, incomplete images. Mental retardation provides the brain with poorly sorted, incomplete and often unstable sections.

2.) Perceptual processing weaknesses: Such input is difficult to process and store. The images are difficult to analyse, order and sort, the critical features are missing.

3.) This leads to quantitative and qualitative imagination deficits, to incomplete information about the environment. There is a lack of concise object conceptions.

4.) All of this makes further information intake, search behaviour (where?) and exploration strategies (what?) more difficult.

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IMPLICATIONS OF MULTIPLE DISABILITIES ON ASSESSMENT

THE CONCEPT OF CEREBRAL VISUAL IMPAIRMENTS IN CHILDREN WITH MULTIPLE DISABILITIES

The children who are the subject of this chapter are all impaired by severe damage to the central nervous system, the effects of which can be seen extensively and severely in all areas of development. The causes and concrete effects are very different.

In children with severe damage to the central nervous system, visual perception is very often affected. This chapter will attempt to relate the concept of Cerebral Visual Impairment (CVI) to medical, psychological and educational perspectives on children with severe multiple disabilities. However, it is also and above all intended to establish a reference to the living environment of these children.

As already indicated, the causes of severe multiple disabilities are very diverse.

The following diagnoses are then often found in the medical reports:

Related to the damage in the brain:

- Periventricular leukomalacia
- Hydrocephalus
- Microcephaly
- And more

Related to the damaged function:

- Combined developmental disorder
- Reduced intelligence
- Language development disorder
- Pronounced psychomotor development disorder
- Spastic cerebral palsy
- Epilepsy
- Nutritional disorders
- Hearing disorders
- And more

In terms of vision, the following diagnoses are found

- Optic atrophy
- Septooptic dysplasia
- Strabismus
- Nystagmus

- Cerebral blindness
- Retinal-choroidal coloboma
- Retinopathy praematurorum
- Amaurose
- Hyperopia / Myopia / Astigmatism
- And more

As a rule, no conclusions can be drawn from these diagnoses as to the consequences for the respective child's vision and what concrete measures are to be taken. The effects are too different. Even with diagnoses such as "cerebral blindness" or "amaurosis", we experience time and again in everyday life that some children show more visual behavior than was apparently the case in the situation at the pediatrician's or ophthalmologist's office where these diagnoses were made. This means that special methods and framework conditions have to be chosen for a diagnosis that is to do justice to these children. The children usually have no active language. Therefore, it is important to use the method of precise and standardized behavioral observation. The slower pace of the children must also be taken into account, which means that diagnostics takes time.

Living environment of visually impaired children with additional disabilities

What shapes the lives of children with severe multiple disabilities? In addition to the visual impairment, these children have massive motor limitations, have very few ways of communicating, they often have feeding disorders, epilepsies, hearing disorders, etc. Often their health condition is very fluctuating, many are prone to infections, some are very plagued by frequent epileptic seizures that cannot be controlled with medication. In such phases, the focus is certainly not on what visual or other support is offered to the child, but on dealing with the health issues.

In addition to all the medical necessities that often very much shape everyday life, they, like any other child, have the need to experience themselves and their environment within the scope of their possibilities. Experiencing oneself in exchange with the external world is an important factor for psychological well-being. This is proven by medical studies on self-efficacy research. (According to medical studies, self-efficacy experiences have health-promoting effects in psychosomatic contexts.)

In doing so, they are dependent on the support of the carers. These persons need empathy and appropriate knowledge. Furthermore, they are required to question their own patterns of thinking and evaluation and to get involved in the world of these children: a world of small steps, slowness and little scope left. So it takes time, patience, knowledge and the willingness to look very closely.

Parents of these children often experience their children being described as having a bundle of deficits. For a child with a severe multiple disability, the world is of course very different from that of a healthy child of the same age. Even eating, speaking, grasping, sitting, walking, these are all things that a healthy child learns in a relatively short time and then masters as a matter of course. The scope for development of a child with multiple disabilities is much narrower, but it is there, even in children with the most severe disabilities. They too want to experience the world and develop within the scope of their possibilities. Seeing is of particular importance in this context. The child cannot decide whether to change the nappy or not, it cannot escape a background noise, but whether it wants to look at something or not is something it can usually decide for itself, namely by turning towards a visual stimulus or closing its eyes. Seeing, even if it is only a very reduced vision compared to normal vision, can be very important for a child with multiple disabilities. Experiencing oneself as a sighted person is a great gain in quality of life and enables a form of self-determination on a very basic level that is not available to the child on many other levels due to the severe impairments.
In this respect, it is regrettable when some ophthalmologists refrain from prescribing glasses because the vision seems to be so low (compared to the non-disabled normal-sighted child). However, the standard here must be different, namely the living environment of the respective child and the significance of vision within his or her living environment.

Cerebral visual impairments

As already mentioned, children with severe multiple disabilities have complex brain damage that can have far-reaching effects on their vision. If one now attempts to classify CVI within the framework of the concept, one encounters certain difficulties. CVI is commonly defined as a dysfunction of visual perception as a result of damage to the visual system behind the optic chiasm (Bals 2009). In children with a pronounced brain damage, it is hardly possible to distinguish whether an ability is impaired due to postchiasmatic damage to the visual system or whether the site of damage is different. In children with cerebral palsies, for example, we often also find impaired visomotor skills. Involuntary eye drifts are not uncommon here, as are various types of pathological nystagmus. Head control is limited or non-existent. All this makes fixation and the scanning and exploration of a visual stimulus with saccades considerably more difficult. The visual perception process is already severely impaired at this point. This is highly relevant for the child and his experience of the world. For if it does not succeed in "catching and holding something in its eye" because it cannot control its head, because it has to deal permanently with involuntary eye drifts, then the child will have great problems in obtaining a coherent visual image of the

surrounding world. Learning to see in all its facets, from visual acuity to the formation of visual schemata to the comprehension of complex pictorial relationships, depends on whether a reasonably stable fixation is possible. CVI is commonly understood to mean visual field loss due to damage in V1, disturbances in visual recognition and spatial perception, but not visual motor function that is disturbed due to brain damage. But even with such an apparently simple visual activity as a saccade, many different areas of the brain come into action in the sense of a network. Besides cortical regions, structures of the midbrain and cerebellum are also involved. *(Diagram from Zihl/Dutton, p.14, Fig.2.2).* Zihl and Dutton (2015, p.13) also point out that the oculomotor system and the visual system are intimately linked and that if oculomotor control is impaired, the process of visual processing can be severely disrupted. Therefore, when it comes to supporting a child in the development of his or her possibilities in the best possible way, it is very important in the context of vision diagnostics to record these basic visual activities of the child in detail (Gömann 2010, 57ff).

Other aspects of visual perception can of course also be impaired in children with severe multiple disabilities. For example, there may be visual field limitations, visual acuity and contrast vision may be affected. The cause of this can be found in the eye itself, but also at the level of the brain. However, the exact localisation of the disorder is not decisive for a child-oriented diagnosis. As Unterberger (2015) notes, it is of great importance for a diagnosis and ultimately for the benefit of the patient to specify the sub-abilities that are affected. This can only be achieved through a precise analysis of the visual functions. A differentiated observation, recording and description of the visual environmental conditions and the visual stimulus qualities under which a child shows which visual behaviour enables the derivation of educational and therapeutic measures precisely adapted to the child's visual ability. Furthermore, it is also and especially important with this clientele to see and evaluate visual perception in the context of the child's overall development. Motor, sensory, cognitive, emotional and motivational aspects must be considered in their entirety, making an interdisciplinary approach indispensable.

DIAGNOSTICS OF VISION IN THE CASE OF MULTIPLE DISABILITIES

The aim of a diagnosis of vision in children with multiple disabilities is to provide the child with therapeutic and educational support appropriate to its possibilities so that it can develop its vision. As described above, the description of the visual functions is at the center of the diagnostics. Since the vast majority of children with severe multiple disabilities have no or only limited speech comprehension and usually also have motor impairments, this must be taken into account in the diagnostic procedure. The exact observation and description of behavior is of great importance, preferably according to a certain system. A method that was developed in psychological research on the visual development of infants, Preferential Looking (Banks and Salapatek 1983), is used here. Infants, like children with severe multiple disabilities, still show little directed motor activity and have no understanding of language. This method is based on the assumption that the human perceptual system shows a fundamentally increased readiness for the acquisition and selection of new stimuli ("hunger for stimuli", Fantz 1961). Therefore, it is observed to which stimulus configurations the infant reacts with a specific visual behavior. It is assumed that when presented with two stimuli, he reacts to the one that corresponds to his interest and possibilities, and he shows this by looking at it preferentially over the other. The child's reactions must be observed and documented by the diagnostician. This principle is applied in the same way to diagnose vision in older children with multiple disabilities. A number of the well-known procedures for determining a visual acuity equivalent (Teller Acuity Cards, Lea Gratings, Cardiff Acuity Test) are based on this.

The diagnosis and the measures that can be derived from it must be seen against the background of the child's entire development, so that an interdisciplinary approach is indispensable.

Thus, the following elements belong to a diagnosis of vision

- Ophthalmological findings
- Orthoptic findings
- Observations from everyday life by parents, educators and therapists
- Behavioral observation and assessment using standardized and validated examination methods in standardized situations

However, it is precisely the standardized and validated examination methods that are lacking. In the area of multiple disabilities and visual impairment, it is difficult or even impossible to apply common developmental tests. The existing tests usually require intact vision or only rudimentarily record vision. As Süß-Burghardt notes, visual-perceptual, visual-constructive and visual-memory abilities up to the age

of 3 are only very inadequately tested with the common developmental tests (Süß-Burghardt 2005, p.54). Separate developmental psychological tests that record visual behaviour in a differentiated way from birth onwards are largely lacking. This is indeed a gap in psychological practice. Assessing early visual development, especially in the context of the other developmental domains, is unfortunately not the focus of child psychology, neither in research nor in practice. For this reason, a diagnostic procedure was developed in the 1980s and 1990s by the graduate psychologist Hanns Kern at the Blindeninsitut Würzburg, Germany, which enables the differentiated diagnostic recording of visual activities and visual abilities of people with multiple disabilities, the „Entwicklungs- und Förderdiagnostik des Sehens für mehrfach behinderte Menschen (EFS)“ (Kern 1996, 2003). This procedure is described in more detail below.

Again and again one hears or reads that children with multiple disabilities have to be tested in an everyday situation in order to do justice to them. There is no doubt that observations in everyday situations are an integral part of a vision diagnosis. However, in everyday life one has to deal with so many general conditions whose effect on the child's visual behavior is often not even noticed or misjudged. Under everyday conditions, lighting and contrast levels of environmental stimuli are variable, which often results in an analysis of inadequate environmental conditions rather than a differentiated analysis of actual vision. Therefore, in order not to underestimate the children's visual ability, it is necessary to offer the best possible visual situation so that the child's actual visual repertoire can be captured. Otherwise, it can happen that the diffuse reaction to a visual stimulus is entirely attributed to the child's "poor" vision. It is possible, however, that the child is overtaxed by the whole situation. It goes without saying that it is very important to recognize and take this overload into account.

It is therefore essential for the diagnostician to pay close attention to what he or she is actually testing. It is not for nothing that there are clear instructions in test manuals on how and under which conditions a test is to be carried out in order to obtain valid and reliable results. By the way, this applies equally to visual acuity tests or tests that determine a visual acuity equivalent (see, for example, the manual on Teller Acuity Cards).

One gives away a central source of knowledge if one completely forgoes controlled conditions. This is undoubtedly time-consuming and difficult to ensure. However, experience shows that with appropriate methods and under appropriate conditions, these children show more clearly their visual capabilities, which in turn leads to a more targeted selection of support goals and measures. If one does without standardized conditions, and there may be reasons for this in some contexts, one must be aware that one is working diagnostically less precisely than is possible under controlled conditions.

„Entwicklungs- und Förderdiagnostik des Sehens für mehrfach behinderte Menschen (EFS)“ - an example of a standardised procedure for behavioural observation and description

The „Entwicklungs- und Förderdiagnostik des Sehens für mehrfach behinderte Menschen (EFS)“ (translated in English: Diagnosis of the development and intervention needs for vision in people with multiple disabilities) is a comprehensive diagnostic procedure with which the level of visual development up to a developmental age of 2 ½ to 3 years can be recorded in a very differentiated manner. The examination takes place in a specially equipped room that allows different visual conditions to be created. It can be completely darkened and half of it is black (ceiling, walls, floor and curtain as a room divider). The aim is to create a stimulus environment that is as selective as possible, as some children only react clearly to visual stimuli under these special conditions. The other half of the room can be examined under normal daylight conditions.

The EFS examines the basal visual activities on the one hand and the visual-cognitive visual activities on the other. The overview shows the chapter headings of the investigated visual activities.

1. VISUAL REFLEXES

1.1 Pupillary reaction

1.2 Blink reflex

2. VISUAL ATTENTION, VISUAL INTEREST

2.1 Visual attention

2.2 Spontaneous visual interest

2.3 Movement (eye, head) to targets in different spatial positions (of the visual field)

3. VISUAL-MOTOR FUNCTIONS

3.1 Eye movements, head movements, coordination

3.2 Fixation

3.3 Vergence

3.4 Visual scanning

3.5 Shifting of attention (visual 'comparison')

3.6 Saccades

3.7 Pursuit movements (tracking)

3.8 Optocinetic nystagmus

4. VISUAL-MOTOR COORDINATION

4.1 Gripping reflex

4.2 Eye-hand coordination

4.3 Coordination between looking and walking

5. PERCEPTION OF MOVEMENT, SPACE PERCEPTION

5.1 Perception of peripheral radial movement

5.2 Perception of central movement

5.3 Perception of three-dimensionality

5.4 Monocular depth perception

6. PERCEPTION OF BRIGHTNESS, CONTRAST, SPATIAL FREQUENCY

6.1 Perception of brightness

6.2 Contrast sensitivity

6.3 Perception of spatial frequency

6.4 Differentiation between gradiations of grey

7. RECOGNITION OF VISUAL PATTERNS/IMAGES

7.1 Recognition of the face pattern

7.2 Other visual patterns/images

8. COLOUR VISION

8.1 Colour sensitivity

8.2 Recognition of color

9. FIGURE ("GESTALT") PERCEPTION

9.1 Perception of figure and ground

9.2 Recognition of uncomplete figures

10. SELECTED FEATURES OF OBJECTS

10.1 Size

10.2 Shape

10.3 Combination of size, shape and color

11. PERMANENCE OF OBJECTS (OBJECT SEARCH)

12. VISUAL MEMORY

12.1 Memory of shapes, colors, sizes

12.2 Memory of patterns

12.3 Memory of order

13. RECOGNITION AND CLASSIFICATION OF PICTURES

The examination comprises 101 test items, some of which are subdivided again. The procedure is oriented towards visual development from birth. In children with severe multiple disabilities, the focus is

usually on the basal visual abilities and visual activities. In this case, only those items that the child can fulfil are carried out. The great strength of this method lies in the very precise recording of visual behavior, even in children who are considered to be severely disabled. It allows the small margins of play that these children have to be recognized and appreciated. From there, visual support appropriate to these children can be provided. It is therefore not surprising that this examination is time-consuming. Depending on the child, 3-4 examinations of 30-45 minutes each are required. At this point it becomes clear once again what is of great importance in dealing with these children and what influences the result of a diagnosis considerably: the time factor! These children need much more time to adjust to situations. In normal medical practice, this time is usually not available, the examinations have to be done much faster.

What special materials does the EFS have to offer?

An important element of the EFS is the so-called projection box.

It is a black box with a milky glass-like pane. The specially developed materials of the EFS are projected onto this pane from behind with the help of a beamer or a slide projector. The child sits about 50cm in front of the screen. The advantage of this setting for children with multiple disabilities is that the image fills the child's entire field of vision, so that even if the child has little control over his or her visomotor skills, he or she "catches" at least part of the presentation. The materials presented are large, bright and very contrasty for most items. In addition, there is no irritation from other visual impressions in the darkened room, and the light source (beamer or slide projector), which is located behind the box, is not visible to the child. Thus, optimal conditions are created to enable the child to get a visual impression and to increase its motivation to become sighted.

Visual scanning

It has already been described above why scanning with the eyes plays such an important role in the development of vision. Therefore, the material used and how it is handled in diagnostics will be described here as an example.

Visual scanning is a coordination of motor skills and visual attention. It is an involuntary successive approach to distinctive points (e.g. light-dark transitions, corners, interruptions, overlaps) corresponding to presented structures of varying complexity.

"Visual scanning is one of the most important basal visual activities. The Soviet scientist Yarbus was one of the first (Luria 1970, 173) to study the scanning movements of the eyes when looking at a face, among other things, and found that the eyes, the mouth and the hairline are the preferred points. Already at the age of nine days, children begin with - albeit still rather imprecise - scanning movements. Up to the age of four weeks, only outlines of figures are scanned. At about 8 weeks of age, children also grasp the inner figure and feel it - still quite imperfectly. At about 12 weeks, they also grasp details, such as the interruptions in the figures shown in figure 4. With the help of such materials, we are quite well able to assess the development of children's visual scanning behavior and - if necessary - to initiate appropriate support for this important visual activity. The vast majority of the children we examine do indeed need intensive support in this area. "(from Hanns Kern, unpublished manuscript).

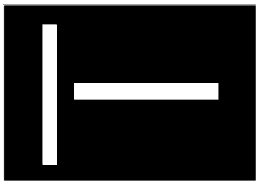

Figure 1

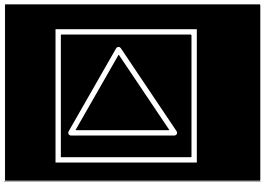

Figure 2

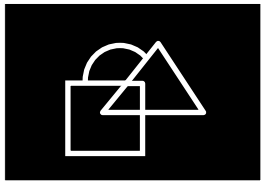

Figure3

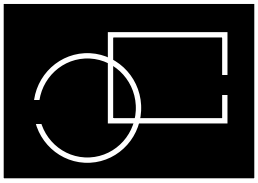

Figure 4

The templates are presented to the child in the projection box. Now observe how the child reacts to them. Is there a general visual interest? Is it stronger than under other conditions? Does the child try to take up the fixation? What is the quality of the fixation? Are involuntary eye drifts / nystagmus beats observable? Which parts of the pattern does the child pay attention to? Does the child make gaze jumps? Is there a systematic way of grasping the pattern? How persistent is the child?

There is no expectation that every child will look at these templates intensively for a long time. On the contrary, children who have already undergone visual development often only look at the templates briefly. The reason for this is that they are able to quickly grasp the essentials and then no longer find the template interesting. Other children, on the other hand, are intensively occupied with these

templates for several minutes. It is not unusual for the teacher present at the examination to tell me that she has never experienced the child as visually active as when looking at the tracing figures. As a diagnostician, I conclude from this that the child is only at the beginning of its development in this area and that this type of stimulus is obviously good "fodder" for its visual system at the current stage of its development. These are essential findings that are then reflected in the choice of support material and the support situation.

In summary, it remains to be said: Children with complex disabilities often also have impaired visual perception due to their brain damage, even if the eye itself should be intact. In order for the child's visual abilities to be supported in a way that is tailored to the child, standardized behavioral observation based on developmental psychology is required in addition to sound medical diagnostics.

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ASSESSMENT OF FUNCTIONAL VISION

The description of existing visual functions and perceptual performance is just as important as the identification of visual deficits.

This diagnostic work requires close cooperation between ophthalmology, orthoptics, psychology and education. Likewise the observations by educators, parents or siblings about the child's visual performance or reactions to visual offers are also integrated and can provide valuable information about possible visual disorders and existing visual functions.

Physiological or functional vision, which refers to the functional capacity of the eye, is assessed by ophthalmologists and orthoptists, for example, with the use of methods of preferential looking (Cardiff Teller Acuity Test, Lea Symbols, Hiding Leas) - (see also article Orthoptics in early intervention and article about CVI and the EFS Assessment).

On the other hand, especially with children with multiple disabilities, it is about functional vision - the actual use of the existing "objective" vision. It is oriented towards everyday life and examines vision under the conditions in which it is actually used. The aim is to gain knowledge for support measures and the use of aids. Lea Hyvärinen proposes to examine for example

- What a child's search and exploration behavior looks like
- Whether facial expressions can be recognized (facial expressions, lip movements)
- Whether vision is used for orientation (are movements recognized, are large objects perceived?)
- Whether there are activities in daily life, in play, that are visually controlled?

She recommends observations under the variation of lighting and material offer. In particular, the visual field, i.e. the area in which the child can use visual information, should be identified.

Zihl recommended focusing especially on the "basic-visual-skills": Can the child show visual attention fixate, track objects, switch gaze between objects or people, or scan an object with the eyes?

The analysis of functional vision is particularly challenging for children with multiple disabilities. The vision of these children is characterized by instability: Frequently changing, dependent on physical condition and current motivation, dependent also on the external environment, the people present, the stimulus of the materials offered and, last but not least, on confounding variables. Thus, a single diagnostic sample cannot be representative of children's visual behavior.

It is important here to explore both the "typical" and the "best possible" visual behavior. This is done in a procedure called "testing the limits", which systematically varies external and motivational variables of the situation. Our creativity is particularly challenged in this area.

Among other things, it is about clarifying the following questions:

1. Which "elementary visual functions" are revealed under which boundary conditions?
2. What is the search behavior? How are objects explored?
3. In which everyday situations and contexts is vision actually used?

   To recognize people and control communication

   To search for and recognize objects

   For visual fine exploration and detail recognition

   For eye-hand coordination and optically controlled handling

   For spatial orientation and control of locomotion

The aim is to get a better understanding and a clearer picture of the visual possibilities and difficulties. At the same time, this will help to uncover starting points for individual support.

Only by taking a close look at the child, by analyzing his or her interests in interaction and individual visual strategies, will it be possible to set priorities in visual perception support and, in this context, to narrow down and specifically select the support material.

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Link:

www. lea-test.fi/leaweb/

SECTION C

GOOD PRACTICIES IN EARLY INTERVENTION OF VISUALLY IMPAIRED CHILDREN WITH ADDITIONAL DISABILITIES

EARLY INTERVENTION PROGRAM COMPONENTS

ASSESSMENT

EARLY DEVELOPMENT PROFESSIONAL SUPPORT FOR CHILDREN AND FAMILIES

TRANSITION

SUMMARY POINTS

Regardless of the increasing number of assessment instruments available, when working with a population of children with visual impairments and additional disabilities, the most useful tools are observational skills of experienced professionals and non-standardized assessment instruments tailored to the population of children with disabilities.

Early development professional family support includes a triad of parent - expert - child. Support within the family over the estimated time period goes through numerous processes that affect its effectiveness, which are documented through weekly reports and the Individual Family Support Plan.

The perspective of parents and professionals should be taken into account when designing and planning the appropriate transition protocol.

PROCEDURES AND GUIDELINES OF ASSESSMENT

Early detection of developmental risks and deviations is necessary in order to implement early intervention programs. According to Pinjatela and Joković - Oreb (1), the term child with neurorisk emerged with the aim of isolating those infants who could develop developmental disabilities from the total number of live births. Therefore, screening methods have been refined and the number of risk factors more precisely defined as a result of numerous studies and long-term monitoring of at-risk children. On the other hand, we talk about developmental deviation when a child lags behind in one of the developmental milestones: motor, cognitive, communication, sensory or social-emotional.

We often encounter children who are subject to assessment from various experts on a weekly basis and therefore become overly sensitive to test situations and parents carry around folders filled with medical records. Identifying and recognizing developmental disorders at an early stage of development is not easy, as all aspects of the child's development should be carefully considered, and a unique picture of the child's functioning should be created. Determining developmental deviation alone can be extremely demanding because among other things, the wide range of differences among children of typical development allows individual deviations to go unnoticed.

There is no single definition that summarizes what is assessment and what it contains. It is most often seen as a tool to determine a child's current abilities, as well as the existence of deviations or developmental difficulties and thus the need to be involved in a particular program and create a support plan. In the contemporary holistic approach, assessment is a comprehensive team approach to family and child in which observations and information gathering from various sources are permeated. Assessment is also the first, initial step that precedes the creation of an Early intervention education and rehabilitation program. How effective it will be for the child and the family depends on the assessment itself. In the assessment process, the interdisciplinary and transdisciplinary approach to be pursued is aware that assessment is not just the use of purely diagnostic instruments. High-quality assessment provides valuable information about the child that reflects the current state of affairs but must be prognostic and advisory at the same time, providing insight into possible future developmental achievements. It is very important to choose the appropriate assessment instrument, the application of which can provide the information and guidance needed to create the program, which will maximally influence the development of the child's and family's potential.

Today there are a number of assessment instruments that can be used by speech therapists, psychologists, special education teachers, physical therapists, occupational therapists and other

professionals from the earliest age of a child or from birth. Many clinical and scientific studies confirm the high sensitivity and reliability of various standardized psychometric tests (such as Bayley Scales of Infant Development (BSID-III), Mullen Scales of Early Learning, Fagan Test of Infant Intelligence (FTII), Battelle Developmental Inventory (BDI), Denver Developmental Screening Test, etc.) in the predictability of later development of cognitive, communication and motor skills (2, 3). There are also many rapid screening tests (ASQ - Ages and Stages Questionnaire Third Edition, PEDS - Parents Evaluation of Developmental Status) designed for screening at-risk children, which can now be completed by parents or professionals as part of professional family home visits. Early recognition of symptoms through these rapid screening scales is often the first step on the path to diagnosis. Screening is defined as a short assessment intended to identify children who need a more detailed diagnostic, evaluation assessment because of the risk of a disability or established developmental deviation.

The use of standardized assessment instruments such as Pediatric Evaluation of Disability Inventory (PEDI), Gross Motor Function Measure (GMFM), BAYLEY development scales, etc. also enables evaluation of changes in the child's functioning, because by comparing repeated assessments we can evaluate the child's progress after Early intervention program. However, we should not forget that the result a child achieves is compared with the norms of average development, that is what can be expected of a child without developmental difficulty in the same chronological age or compared with the level of mental development. Therefore, the use of standardized measuring instruments in the population of children with visual impairments is inappropriate to the standards of assessment, because except that most subparts and tasks lack the ability to adapt to children with sensory deficits, the standards are set according to the population group without difficulty.

When working with children with developmental disabilities, the purpose of the assessment should always be taken into account. Assessment for the purpose of monitoring numerical results, with a group of children with disabilities always below average, is considered unethical by modern codes of helping professions. Emphasis should be placed on the observation of the child in the natural environment, within daily and familiar activities that make sense of the child's daily routine. This is precisely the origin of the concept of Functional assessment, which is carried out for the purpose of providing guidance to parents, creating an educational and rehabilitation program and evaluating the achievement of the set goals within that same educational and rehabilitation program. With this form of observational assessment, the child is compared only with himself/herself, that is, the advances are evaluated that can't be measured through standardized instruments, but are very important and essential for the child's daily functioning.

Experts in working with MDVI children most commonly use non-standardized assessment tools (e.g., Portage Guide to Early Education Checklist, HELP Checklist (0-3) and HELP Strands (3-6), The Oregon Project Skills Inventory, Communication Matrix, INSITE Development Checklist and others) that are curriculum oriented. Whether designed as a questionnaire or checklist, these types of instruments suggest activities and development areas to work on.

In practice, we are seeing an increasing number of children with the same diagnoses, but with different characteristics of functioning in everyday situations. Functional goals and tasks derived from functional assessment are reflected in the positive developments in the final assessment in all developmental areas, as well as in the positive qualitative changes in the characteristics of the child's daily functioning.

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THE IMPORTANCE OF THE TEAM APPROACH IN ASSESSMENT

In order to allow a comprehensive and consistent assessment of a child with visual impairment and additional developmental disabilities, a team approach is necessary. Holm and McCartin (1) describe the team as "an interactive group that performs integrated and interdependent activities." The introduction of a team approach to assessment and early intervention reflects the attitude and perspective of professionals who begin to view the child and his or her development as an integrated entity rather than as a set of particular developmental areas (2).

Characteristics of teams

Most teams working together in assessment and early intervention have some common characteristics: they are made up of experts of different profiles, very often in all segments of their work they include the child's family and share common tasks, i.e. goals. What differentiates teams from one another is the degree of interaction between team members. Given the structure and degree of interaction among team members, teams are divided into: a multidisciplinary, interdisciplinary and transdisciplinary team. Although these three forms of team collaboration are often compared, they can be viewed as points on a continuum of interaction, starting from low to high levels of interaction. The lowest degree of interaction among team members is present in the multidisciplinary team, while the highest degree of interaction is found in the transdisciplinary team.

In a multidisciplinary team, professionals of different profiles work independently of one another. Peterson (3) compares the work of a multidisciplinary team with parallel play in children (“side by side but separately”). Members of the multidisciplinary team share the same space and resources, but act in a completely separate way. Ultimately, such a team approach leads to the provision of a fragmented service, which can have negative effects on the child and his or her family (contradictory statements of experts, mismatches).

In conditions of interdisciplinary and transdisciplinary cooperation there is no such fragmentation of services as the degree of interaction between members is higher. Interdisciplinary teams work in a way that everybody conducts assessment separately, but they have joint meetings to discuss the results of the assessment and agree upon strategies together. Although the degree of interaction is much higher than in the context of multidisciplinary collaboration, communication and interaction difficulties remain, as professionals lack sufficient knowledge of related disciplines and misunderstanding or mutual non-acceptance is often present.

Transdisciplinary teams also consist of professionals from different disciplines and parents of the child, but teamwork seeks to push beyond the boundaries of individual professions to achieve a high degree of communication, interaction and collaboration among team members.

Team dynamics is a living organism that constantly needs self-evaluation and support. The process of transformation from a multidisciplinary to a transdisciplinary team is a lengthy and not always uniform process, which also makes a path to increase the level of interaction between team members and different disciplines within the team very demanding.

In order for a team to become transdisciplinary, its members should learn and work together and in that work cross the boundaries of their profession. The literature describes certain stages that a team must go through in order to become transdisciplinary. The United Cerebral Palsy (4) calls these stages of the development of transdisciplinarity “role release”. Role release is the sum of individual processes that take place separately but are also interconnected. There are phases from strengthening our own role in which we become more competent in our core profession, through acquiring the knowledge, skills and competences of related professions in controlled conditions to the so-called “role release” phase when the specialist applies the newly acquired skills in practice under the supervision of the specialist whose profession it is.

One of the main features of conducting an assessment in a transdisciplinary approach is the so-called Arena assessment. The parents/child and other members of the expert team are present in the assessment room. In most cases, only parents and one team member are in direct contact with the child, who doesn't have to make contact with many unknown persons. Given that the child is focused only on one adult and doesn't have to go through a series of consecutive assessments, the child is less tired and his/her performance is better. Arena assessment poses a great challenge for professionals and "orchestrating" the arena approach requires planning and consideration by all team members.

Assessment of children with visual impairments and additional developmental disabilities

Assessment of children with visual impairment is a growing challenge for professionals facing a wide range of tests, procedures, aids and observational techniques. An increasing challenge in assessment is the fact that we are facing increasingly complex needs of children and families, especially when it comes to children with visual impairment and additional developmental disabilities.

When conducting the assessment, the team should receive information not only on visual functions and functional vision, but also on how difficulties in visual functioning affect all other developmental areas and their causal relationship. The assessment itself is conducted in a broader context, including an

assessment of the environment in which the child is functioning. Based on the information provided, it is necessary to determine the child's strengths and needs that form the basis for determining intervention strategies for encouragement. The assessment and determination of the encouragement strategies are conducted through active collaboration with the child's parents, who are active team members.

All this is a huge demand for only one profession, thus cooperation between experts of different profiles and team assessment is imperative.

In order for the assessment to be comprehensive in terms of addressing all the developmental needs and strengths of the child, the cooperation of experts in the fields of medicine, education and the social service is required (5).

GLOSSARY OF TERMS

Arena assessment = an assessment during which professionals of different profiles approach the child simultaneously using standardized measuring instruments and informal assessment strategies. One to two experts play the role of facilitator and interact with the child while other team members observe.

Role release = a process that involves sharing knowledge and skills and evaluating the perspectives of other professional disciplines and the possibility of releasing one's own

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EARLY DEVELOPMENTAL PROFESSIONAL SUPPORT FOR CHILDREN AND FAMILIES

Parents are the most active participants in the process of creating optimal conditions for a child's growth and development. To create appropriate conditions, parents encounter a number of obstacles, such as geographical and social isolation, lower economic status, coping with additional care requirements for a child with developmental disabilities - which affects their ability to fully take care of their child. In order to prevent poor outcomes for the child and the family, the appropriate support is required. Support for

parents in particularly sensitive stages of adaptation, the so-called crisis periods, is a strong protective factor in the psychosocial stability of family life and its active social participation, but also in creating an environment in which the child is accepted and encouraged (1).

The child's natural learning environment is right inside the family in their home. Here in a familiar environment, both parents and child feel safe. Spending time with families in their home has proven to be an ideal way to understand the family situation and to individualize services and increase available resources (2). The method of providing services or intervention to families within their home has many advantages for parents as they do not have to arrange transportation, seek a nanny or a day off (3). Support comes to the families, so parents (most often mothers) are essential throughout the intervention process and are very often at the heart of the intervention itself (2). The modern concept of working with parents, views parents as partners, not as partners in terms of expertise, but as partners in working on a developmental outcome (1).

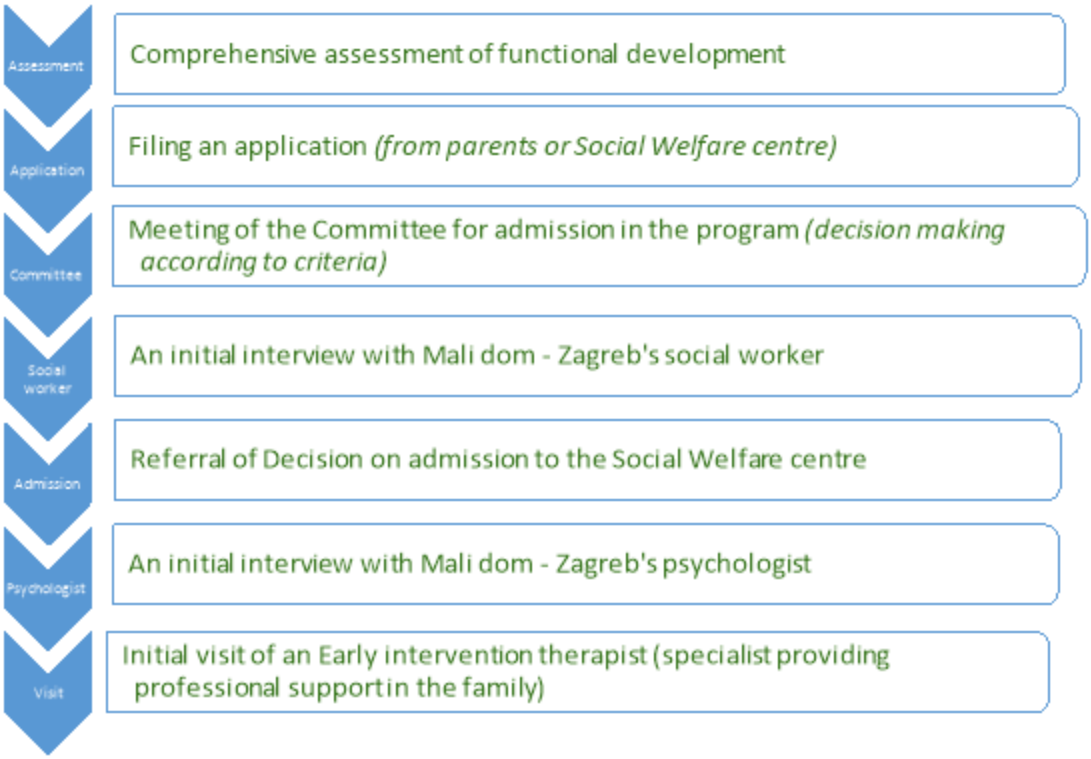
Early childhood intervention focuses on the crucial role of parents in shaping a child's life, which is why the most effective way is to bring early intervention services to families. The concept of working in the child's home includes direct work with the child, an intervention triad (specialist, child and parent work together) and parental counseling. An expert providing professional support in the family is responsible for establishing a relationship of trust, providing information and quality service (guided by relevant scientific research) and tailoring it to the individual needs of the family. An interdisciplinary collaboration of different professionals, with constant cooperation with parents, plays an important role in the implementation of early intervention (4).

Overview of the components of an Early intervention program in Mali Dom – Zagreb

Mali dom - Zagreb has been implementing an Early intervention program for children with visual impairments and other developmental disabilities since 1999, covering children from birth to the age of three. Early intervention is organized through professional support in the family and therapy services provided within the Day Care Center. The entire Early intervention program has several components:

1. Admission protocol in the Early intervention program
2. Providing professional support to the family,
3. Transition protocol to other programs after reaching the age of three.

Admission protocol in the Early intervention program:



After a team assessment of the child has been carried out, a Recommendation for admission in the Early intervention program has been proposed and the family has expressed interest in joining the program, the request is submitted to the Committee for admission with the results of comprehensive functional development assessment attached. The Committee decides on each request at the meeting. If a positive decision is made about admission, the family comes for an informative interview with a social worker and psychologist. During the initial interview parents are informed about the program, what they can expect from the experts and how they should be engaged in order for the cooperation to be as successful as possible. When a child and family are admitted in Early intervention program, it is agreed at the Expert team meeting which expert will provide professional support in the family and which experts will provide support within the Day Care Center according to the results of the team assessment. An expert who goes to the family in this way gains insight and receives information from all professionals who have been in contact with the family. Support at the Day Care Center is evaluated according to the child's needs and may vary according to the type of therapy services and their frequency. The experts involved in providing additional services include: physical therapist, kinesiologist, speech therapist, music therapist, psychologist, occupational therapist, special education teacher and sensory integration therapist.

STRUCTURE OF PROFESSIONAL SUPPORT FOR THE FAMILY

Professional support for the family takes place over estimated period of time where processes and support alternate during the encounter, which happen on a weekly basis. The process is monitored by various documentation that includes: Individual Family Support Plan (IFSP), Individual Education Plan (IEP) and Weekly Report.

Individual Family Support Plan (IFSP) – developed by team of experts in collaboration with parents, documents the early intervention process, serves as a guide to the service provider as well as family and evaluates services tailored to the specific needs, priorities and resources of the family.

Individual Education Plan (IEP) - a document that contains long-term and short-term goals, approaches, resources and who and under what conditions carries out activities determined by the set goals. It monitors and evaluates child's progress.

Weekly report - after each meeting, an expert writes a report on the activities carried out, showing the chronology of professional support to the family, giving an insight into the family dynamics and providing insight into the success in the application of procedures, their effectiveness and suggesting changes in procedures.

The structure of the visit consists of three parts that make up the whole: free play observation, structured activities and counseling of parents.

The processes that occur within the family during professional support can be divided into the following areas:

Establishing relationship. The first professional visit begins with expert getting to know the family and establishing a relationship with family and child. It is necessary to use a communication style and social behavior that is supportive and reflects empathy, with respect for the culture and life circumstances of the family. It is important to keep in mind the time to actively listen to family and share information. The family should be aware that you are interested in family issues and that you will find solutions together.

Defining professional support in the family. Explain how children learn best through everyday experiences of interacting with familiar people in a familiar context. Explain the role of the expert in supporting the parent in creating a multitude of learning opportunities. Use family interests and concerns as concrete examples to explain how early intervention programs can be effective in working with the child and the family. Explain that early intervention program has its own rules and protocols that must be followed by the professional and the family.

Collecting information about family dynamics and the child. Collect information about family daily routines and activities and about the child's behavior and interaction with others in these situations.

How the child is playing /exploring the environment, what keeps his attention the most, how he/she reacts to other familiar people, siblings. How parents know that their child wants something, how the child shows when he likes and dislikes something and what are the things he/she loves most and what are the things he doesn't, etc. Ask questions that encourage the family to share their thoughts and concerns about the child's development. Use open-ended questions: “What activities do you and your child do throughout the day or week?; Describe how your child participates in these activities. " Ask questions concerning interests: “What do you like to do together?; What do you wish you could do together? ”. Questions about family activities where challenges can be found: “What are the difficult times of the day or activities for you?; How is your child behaving and/or interacting with others in such challenging activities? ”. In parallel, while talking to parents, the expert observes the child's behavior in activities in a familiar space and conducts observation of the child's capabilities, reactions and ways of communicating with the environment.

Support Network. Talk to the family about formal and informal support they use or would like to use. Ask open-ended questions: “Who is important to your child and other members of your family?; Whom do you call for help ?; Who do you often see? ”. Ask family members if they would like to contact other families involved in the Early intervention program or family organizations, associations that provide support. Ask about the social programs that the family uses or wants to use (medical, social, support groups, workshops ...).

Interaction with the child. After talking with parents and observing child's behavior, the professional interacts with the child and conducts observation of the child's reactions, covering all developmental areas. Expert observes how the child responds to strangers, the presence of a social smile and eye contact, what emotions he/she shows and how, what mechanisms of self-regulation child possesses. The child's reactions to environmental stimuli are monitored; visual, auditory, tactile, vestibular stimuli etc. The expert observes the child's mode of communication, cognition, development of gross motor skills, manipulative abilities and how he/she plays and learns. Expert also observes the presence of specific behaviors: stereotypes, extreme sensitivity to strangers, negative reactions, strong parental attachment (which impedes communication with the professional), etc. The importance of observing the child's strengths, needs and interests gives the expert insight into the child's functional abilities to create a future intervention plan.

After comprehensive assessment and preparation of written expert opinion, observation of the child's knowledge and skills as well as gathering all relevant information about the child and the family, the expert team in collaboration with the parents develops an Individual Family Support Plan. After 3 to 6

months a re-evaluation of the set goals is carried out as well as setting the new ones. Up to four plans are created in a one-year period for the purpose of revising the plan for evaluating the achievement of the goals set by the Individual Family Support Plan. If necessary, during the implementation of early developmental professional support it is possible to carry out a team assessment or specific assessment of the characteristics of a particular developmental area in order to create support goals, deal with concerns etc. At the end of the educational and rehabilitation period, the expert team compiles a written opinion on the activities that were carried out, evaluates the child's progress and gives recommendation.

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EARLY INTERVENTION EXPERTS - THE FEATURES AND IMPORTANCE OF THE TEAM APPROACH

Professionals working in the Early intervention system besides a good knowledge of their main profession must also have additional knowledge and skills. An expert providing professional support in the family is responsible for establishing a trusting relationship, informing, providing quality service (based on relevant scientific research) and adapting it to the individual needs of the family. The professional identity of Early intervention professionals cannot yet be fully defined as it is a young profession that is being built and defined still, and the experts themselves who are trained in the field come with already defined professional identity of their primary profession. What is needed is the definition of the minimum desirable level of professional competence acquired through college education, that is, the basis on which all later education required for early intervention work will be further upgraded.

In addition to developing the professional competencies needed to work with families and children in early intervention, personal competences should be developed at the same time, i.e. those beliefs and expectations of professionals that enable them to grow and develop professionally.

To help define the role and responsibility of each team member, it is a good idea to answer the following questions and become aware of your way of working:

- What is our professional role and responsibility in working with family and child in the early intervention program?
- What is our view of the situation as a team member?
- What professional knowledge and competencies does an expert need to be able to work with children with disabilities in a quality way?
- What strategies do you use to integrate the goals of work into child's daily life?
- How to actively contribute to the development of effectiveness of team approach?

In the care of children with developmental disabilities or the risks of their occurrence, today we meet a large number of experts from different professions. Children born with a neuro-risk factor, given the sensitivity of central nervous system development and unpredictable clinical picture, require a team of professionals who with their knowledge and cooperation provide the appropriate care needed for the child. In the field of neurorehabilitation, we come across a team of different profiles and specialization consisting of special education teachers, psychologists, physical therapists, occupational therapists, speech therapists, kinesiologists, social workers and others.

The complexity of the clinical picture of a child with visual impairment and additional developmental disabilities requires a quality approach of the different profiles of professionals trained in the field of early education and developmental rehabilitation, that is, the complex field of early intervention. Acting in the field of early intervention itself requires highly structured forms of team collaboration, regardless of the model by which the early intervention program is implemented. Models of team collaboration in the field of early intervention (multidisciplinary, interdisciplinary and transdisciplinary) differ in the expertise and education of team members and the manner and amount of collaboration of professionals involved in working with children and their families.

The multidisciplinary model of teamwork represented in the therapeutic intervention process is the simplest model based on the parallel but independent action of experts in the areas of assessment and development of professional support plans and programs (1). Multiple therapists are involved in working with the same child on an individual basis, each monitoring and encouraging their primary area of work. Team collaboration between team members involved in working with the child is formal and is based on meetings where each team member provides information on the child's development and plans an educational-rehabilitation and therapy plan, but only for his or her area of professional activity. The basic feature of a multidisciplinary model of team collaboration is independence in the work of experts within their own professional qualifications.

An increasingly prevalent model of team collaboration in the field of Early intervention is an interdisciplinary approach. Compared to the multidisciplinary model, interdisciplinary team collaboration is a more complex model where professionals from different disciplines still work independently, but at periodic team meetings they exchange information on the child's development and agree on a common Individual support plan and program. Team members use knowledge from different fields to achieve a common goal, which is complete and individually tailored child habilitation and progress. Some participants in the habilitation process must also have knowledge of other developmental areas involved in the rehabilitation of the child in order to be able to participate equally in achieving the set goals. An interdisciplinary model of teamwork consists of integrated, coordinated and interactive work of experts, whereby mutual influence and sharing of information on the child's interests, strengths and needs and developmental difficulties occurs. The frequency of meetings is pre-arranged and constant.

The transdisciplinary model (2) of team collaboration is based on an extensive assessment of the child's condition and needs, joint goal setting and the development of an individual support plan and program. It is a model of service where one or two professionals are primarily involved in the process of re/habilitation of the child's development, while other necessary professionals are involved in the

process through the necessary consultations. Through such one segment of professional functioning, every member of the transdisciplinary team is always a bit more focused on solving the set goal. Transdisciplinary teamwork enables each team member to learn new, more effective ways to solve problems, plan, connect, make decisions and share information within the team.
In the contemporary approach to early intervention it is of the utmost importance to apply a transdisciplinary model where a team of professionals provides highly coordinated and integrated family and child-centered services to better respond to the complex needs of the child and his or her family (3). As part of the Early intervention program at the Day Care Center Mali dom - Zagreb, family support is provided by key worker, mainly early-intervention special education teacher, which involves working in the home of a child's family. Other members of the team are involved according to the needs of the child and family and professional support for specific development areas takes place at the Day Care Center.

The role of the expert team members in the early intervention program

- Creating an Individual Family Support Plan in collaboration with parents and team
- Carrying out activities aimed at achieving the goals set by the Individual Support Plan (while pointing out what the child can do)
- adjusting activities and resources to the interests and needs of the child
- supporting parents in the implementation of activities (providing information and presenting the implementation of activities)
- Encourages family resilience - helps families maintain healthy functioning patterns, recover from stressful events and strengthen protective factors; raising awareness of their strengths, defining them and supporting each family strength on a daily basis
- focusing on carrying out activities that will affect the optimal development of the child
- ensuring representation and integration of multiple developmental areas (communication, cognitive development, motor development, sensory development and sensory integration, social-emotional development)
- providing guidelines for arranging and adjusting the space in which the child is living
- Observing the child and evaluating achievement over a long period of time.

The team members agree on how to integrate the activities into the daily life of the family. The child is observed through the interaction of his present and future environments, through the analysis of activities and the opportunity to participate in them, to enable him/her to participate fully in the life of

his environment. Parents and professionals learn from each other and apply knowledge when interacting with the child. Therefore, it is important to consider all the characteristics of orientation within the domain of child, family and community.

Child Orientation: Knowledge of the developmental sequence (milestone) of all developmental areas. Integration of knowledge and skills of developmental areas to design activities/games that will stimulate learning and development of the child in accordance with his/her abilities, in order to develop the child's potential. Awareness, deepening and generalization of experience.

Focusing on family, parent: Empower, be supportive, explain the unknowns, point out what a child can do, emphasize values, respect the parent as a partner, advise on how to adapt the environment to the child. Implementation of educational and rehabilitation procedures in the daily life of the child and family.

Community focus: Raising awareness of the importance of Early intervention programs. Finding optimal procedures, forms of cooperation with other experts and institutions.

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TRANSITION

An important segment of Early intervention programs is transition. Transition refers to key moments and/or processes, that is, changes that occur at specific periods of life or crucial points over the life span (1). In order to make the transition in line with the needs of each individual family, it is important to consider the perspective of parents and professionals. Understanding the perspectives of the two parties who are continuously cooperating within a system will affect the quality of the transition itself. One of the important goals of a successful transition is to ensure the continuity of professional support to families during the transition.

Parental Perspective

Children with disabilities and their parents from early childhood to school are experiencing changes that may include transitioning from one program to another, relocation, changing access and support systems. How a parent adjusts to this dynamic process will affect their parenting experience. The transition from an early intervention program to a preschool or school program places great responsibility on parents for choosing the right program (2). Issues related to developmental deviation intertwined with responsibility for achieving the desired goals can result in a sense of insecurity and stress for parents, which increases if the system does not provide support (3). The success of the transition to an inclusive context depends on the capacity to cooperate and coordinate all systems involved and to inform parents about all available options (4).

Parents play an important role in the transition process because they are a link that interacts with the child, programs and community (2). Interaction between families and providers is therefore critically important in the application of a family-oriented intervention (5). It is a process that involves the collaboration of experts and parents. It is parents who can provide important information regarding the child's strengths, weaknesses, preferences and interests, which are of utmost importance for the development of effective transition components (3). In order to help parents and children in transition, all steps should be carefully planned, and family needs taken into account.

Research on the parental need for support during transition shows a number of different challenges that parents face (2): concerns about child's adjusting to the new program and their own adaptations to communicating with the new professional team; use of uneven terminology among experts; lack of legal framework and implementing documents, which makes it harder to establish uniform protocols and procedures within each institution.

Therefore, in order to improve the quality of transition it is necessary to (2):

- Ensure that the transition process is managed by a specialist who knows the child
- Introduce parents to the new educational and rehabilitation program before the transition, to gain insight into the work and services of the program that child will receive
- Conduct frequent interviews with parents and facilitate their active participation in transition planning.

Expert Perspective

Since the transition itself requires the cooperation and interaction of all participants involved in the transition process, the responsibility of experts for the successful outcome of the transition is often cited in the literature. Bruder and Chandler (6) state that the responsibility for transition planning should be shared between the sending institution and the one receiving the child with parental involvement. They also state that transition procedures should assist the family and the child while promoting cooperation and coordination between early intervention providers, service coordinators and families.

The early intervention system is still struggling with the problem of education and finding the right form of education for the so-called service coordinator or key contributor responsible for the coordination and transition process in individual systems. The lack of education is still an obstacle for successful coordination of services (7).

Seitz (8) presents the results of a study aimed at identifying the knowledge and practical experience of transition of professionals providing early intervention programs in the family:

- experts strive to inform parents in a timely manner that their child is exiting the early intervention program, thus leaving sufficient time for parents and the child to prepare for change
- consider transition important because it provides timely information, reduces stress and facilitates adjustment of the child to the new environment
- consider that both professionals and families need support during the transition
- the collaboration of early intervention team experts with experts from the program the child goes to is occasionally present but not systematically regulated
- the acquisition of competences for implementing the transition at an early stage of development is not systematic and respondents rely heavily on their own professional team and less on formal education.

Barriers to successful transition implementation are defined by experts at the level (1) of experts - lack of knowledge; (2) organizations - lack of time, organizational rules of the institution and (3) system - lack of cooperation between institutions, lack of coordination of the system, lack of protocols and information. Finally, experts say that in order to improve the transition process, transition should be an integral component of any early intervention program. The existence of a transition protocol would ensure the coordination of services and the continuity of support. It is also necessary to ensure joint meetings of all participants in the transition process with an aim of transferring and exchanging information, as well as to carry out systematic training of experts.

The example of transition model in Mali dom - Zagreb

At the moment of transition between the two social service programs parents find themselves at a new turning point and return to one of the previous stages of adjustment, the search phase. This is a very stressful and uncertain period, as there is no regulation in the legislation to monitor children with disabilities through their developmental pathways and to direct them to programs that meet their needs. To make it easier for parents to make the transition between the two programs we have developed a transition model at our Centre.

The model goes in two directions:

- The first is intended for children who do not continue their habilitation in Mali dom - Zagreb but are referred to other programs. In this case, the parent is advised by a team of experts about programs existing in different systems (education, health and/or social care) and is empowered through individual interviews and a support group to timely apply for those programs that are in compliance with the child's developmental needs
- The second part of the model is intended for children who after the Early intervention program continue with the education and habilitation program at the Mali Dom - Zagreb Day Centre. To this end a Transition protocol from Early intervention to a Day care program has been developed that aims to facilitate the transition of children and parents from one program to another. The established protocol communicates information on the work done so far, the achieved goals, methods and ways of working with the child as well as the activities the child was involved in. The goal is also for the Day Care program team to get to know the family and the child. On the other hand, parents are introduced to Day Care program activities, the specifics of work in relation to the program so far and the start of the Adjustment period is agreed upon with parents.

The model of transition implemented in Mali dom - Zagreb when it comes to switching from one program to another consists of the following steps:

1. Expert providing professional support in the family conducts an interview with parents and prepares them for the completion of the Early intervention program
2. Social worker interview with parents and referral to a Social Welfare center in order to apply for a Day Care program in Mali dom - Zagreb
3. Making arrangements with parents for the Transition meeting from Early intervention to Day Care program
4. Transition meeting
5. Transition to Daily program (Adjustment period)
6. Transition Monitoring Meeting at which parents are presented with an Individual Education Plan and a brief evaluation interview is conducted with a look back at the Adjustment period and Transition process that parents and child have undergone.

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CREATING AN INDIVIDUAL SUPPORT MODEL

COMPONENTS OF INDIVIDUAL SUPPORT MODEL
CREATING GOALS AND CREATING FUNCTIONAL ACTIVITIES

SUMMARY POINTS

An important part of Early childhood intervention is the Individual Family Support Plan (IFSP) as it describes all the services needed for quality and holistic support and serves to guide, plan, evaluate and review Early intervention programs.

The Individual Education Plan (IEP) is a system of identifying where a person is, where they are going, how they will get there and how we will determine if the path has been successful. The basic components of an IEP are the initial status in various developmental areas, goals, strategies and activities.

Activity-based intervention is a transactional approach directed by a child. This approach starts with the child's individual goals being achieved within routines that can be planned or initiated by a child.

COMPONENTS OF INDIVIDUAL SUPPORT MODEL:

INDIVIDUAL FAMILY SUPPORT PLAN AND INDIVIDUAL EDUCATION PLAN

In the process of Early childhood intervention, a very important segment is the documentation, monitoring and re-evaluation of the procedures implemented in each program. Early age is a complex process and a very sensitive period for both the child and the family. Creating child and family support programs requires the highest degree of team collaboration to provide optimal support to all participants in the least disruptive way.

The Individual Family Support Plan (IFSP) documents the Early intervention process and serves as a guide to the service provider and family of the child (Early support beneficiary). Through the creation of this document, family members and early intervention professionals work as a team to plan, implement and evaluate services tailored to the specific needs, priorities and resources of the family. The IFSP should help the inter-system cooperation and joint action towards the family and the child in order to facilitate coordination and integration of all approaches, thereby reducing repetition and exposure of the family to unnecessary actions. IFSP is a continuous process and an important link between the family and the Early intervention team. This process requires a key person/manager to follow the steps within the process and re-evaluate the services (1).

In some countries the IFSP is a mandatory document for all persons with additional needs and its content, process and development are legally regulated (2). In countries that do not have specific guidelines in the law for creating an IFSP, service providers can determine the scope and content of the document themselves.

An IFSP can vary between service providers within a system and depends on the agreement of the professional team and the needs of the family. Some of the components of IFSP are (3):

- the child's initial functioning in the areas of cognition, communication, motor skills, social-emotional development and sensory development
- family resources, priorities and focus on encouraging child development
- criteria and deadlines for determining the child's progress in various developmental areas
- frequency, intensity and method of providing specific Early intervention services
- environment in which the service will take place (Centre, family home)
- developing long-term goals through the teamwork of parents and professionals
- Statement of consent to the created Individual Family Support Plan.

The process of creating an IFSP consists of several steps (3):

- Identifying family priorities, resources and concerns. These three items are important throughout the entire process of creating an IFSP. In order for the first step to be successful, it is

necessary from the very beginning to work on a partnership between the family and the early intervention team.

- As each child develops within the environment and interacts with the environment surrounding it, it is necessary to determine the set of activities in which the family participates. It is important to document daily routines (e.g. bathing, feeding, playing, etc.) to assess whether they provide sufficient opportunities for the child to learn and gain new experiences, as well as community activities in which the family is involved.
- Conducting a functional assessment that will emphasize parental questions about the possibility of child's progress; give a clear and comprehensive picture of the child's strengths, needs, preferences. Observation and other forms of assessment should be carried out by a specialist with whom the family has already been in contact and in a familiar environment.
- After collecting the data, it is necessary to determine what the desired outcomes are by the joint cooperation of the team and parents. Active involvement of parents in goal-setting is imperative. Common goals are always aimed at enhancing parenting capacity and increasing child involvement.
- Assigning responsibilities to the intervention team that will lead to the achievement of set outcomes. In a transdisciplinary team collaboration, the individual responsibility of each team member is defined by the needs of particular situation rather than by the function of a particular profession.
- Determining a strategy that will help implement the plan. This step still implies a high degree of team collaboration to maximize learning opportunities, use the child's natural environment and effective strategies that will lead us to the desired outcomes.

Gaitmaitan (4) states that the outcome of an IFSP is that it contains sufficient information for parents about the skills or behaviors the child needs to master, and it should also identify possible obstacles for certain skills or behaviors to be generalized. Insight into this information can help parents monitor progress within their daily activities and routines.

In the United States, the Individuals with Disabilities Education Act - IDEA (3) distinguishes between IFSP and Individual Education Plan (IEP), stating that IFSP is for children ages 0-3 while IEP is for children from 3 years onwards. Among other things, the IFSP is focused on the needs of the family to support the development of the child, while the IEP is more focused on the educational needs of the child.

The IEP is a written document setting out a child support program. It is a system of identifying where a person is, where they are going, how they will get there and how we will determine if the path has been successful. It also refers to a process that reflects the way of thinking of those who created the

Plan. It should be borne in mind that the IEP is not just a summary document in which each of the early intervention team experts separately sets out their goals in their field but reflects a holistic approach that starts with the child and his/her current needs. The basic components of an IEP are: initial status in various developmental areas, goals, strategies and activities.

Initial status represents the skills that the child currently has and information about them can be gathered through the use of different assessment instruments, by talking to parents and observing the child.

The needs of the child are determined based on the initial skills. Needs are those skills that a child needs to develop and which, according to Vygotsky, belong to the so-called next development zone. These are the skills that the child demonstrates ability for and is currently performing them with support. The needs of the family should be taken into account when determining the needs of the child. Parents are key participants in planning because they know their child the best.

It is only after the needs have been identified that you move on to defining the goals - long-term and short-term.

Long-term and short-term goals are defined through a collaborative and environment-centered approach. The environment-centered approach looks at the child interacting with the environment and takes into account different environments and activities in which the child participates or is motivated to participate.

Long-term and short-term goals should be "SMART" (5):

- Specific: The goals should be specific enough for the team around the child to know exactly what behavior is expected. This ensures matching expectations and facilitates evaluation.
- Measurable: Goals should include criteria for measuring success, which allows monitoring and evaluating the success of a child's program.
- Attainable: Refers to being achievable within a time frame of up to one year or in a shorter period when it comes to children up to the age of 3. The appropriate time frame at this age is 2-4 months. Family members can sometimes suggest goals that can be achieved over a longer time frame, so the team’s task is to break down those family priorities into smaller steps that can be accomplished within 2-4 months.
- Routine based: Are the goals realistic, relevant, meaningful for the child and the family.
- Time-based: Can they be accomplished within the appropriate time frame (defined by the goal setting time frame).

Long-term goals refers to a longer period of time. At an early age the long-term goal defines the desired skill and field. An example of a long-term goal is "The child will use both hands while manipulating objects." The short-term goal includes steps that need to be taken to achieve the long-

term goal. A long-term goal may include multiple short-term goals, which may be successive skills or a series of related behaviors that contribute to the adoption of the targeted skill. In formulating a short-term goal we also use specific skill/behavior, but we also add the conditions of achievement and the measurability criteria. An example of a short-term goal based on the long-term goal defined above is „While lining objects on the cord, the child will hold the object with one hand and the cord with the other hand in 3 out of 5 times“.

Measurability criteria can be different: frequency of behavior, level of active participation, duration of behavior, appropriateness.

Goals should be functional, which means that it must clearly show why the specific goal is being worked on. Functionality is a term connected to skills that increase autonomy and contribute to a person's adaptation to the environment. An example of a non-functional goal would be "The child will stack 3 shapes on a cord", while a functional goal would be "A child will use two hands where one holds an object and the other performs movement". A functional goal contains skill and can be performed in many different environments.

One of the assessment tools that can help professionals assess whether a defined goal is a good one is the R-GORI list (Revised IEP/IFSP Goals and Objectives Rating Instrument (R-GORI) for Early Childhood) which contains questions about functionality, the context of teaching , the possibilities of generalization and measurability of the set goals (6).

In addition to the current level of functioning and goals (long-term and short-term), IEP includes strategies. Strategies include a description of the procedures by experts and the materials that will be used to achieve the goals. These are actually the goals of the team and are different from the goals for the child. An example of a team's goal is “Encourage joint attention in a way…” or “Provide three position changes during the activity”.

The IEP also defines the activities within which the objectives will be pursued. Given the early developmental age, activities are usually the child's routines during the day or activities the child likes to participate in.

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CREATING GOAL ORIENTED ACTIVITIES

Children at an early age do not easily generalize skills to other environments, persons, and materials, and the process of generalization becomes even more demanding as developmental difficulties become more complex. It is important to teach those skills that the child needs in the context where he/she will need it (1). Long-term and short-term goals should include critical or key skills that a child can learn in the context of daily routines and activities.

When working with children with visual impairments and additional developmental disabilities, the so-called activity-based intervention is often implemented.

Activity-based intervention is a transactional approach directed by a child. This approach starts with the child's individual goals being achieved within routines that can be planned or initiated by the child. Routines allow the development of functional and generative skills because they use logical antecedents and consequences (2).

A child-directed activity means that the child initiates the activity and the expert follows his or her interest and incorporates the goals of the IEP. It is based on child's interests, which means for example, that if we want the child to learn the names of clothes, we will create situations of playing with a doll, going to the park etc. Instead of exposing the child to picture cards and naming of various clothes. Activities initiated by the child include a natural sequence of actions, something that precedes and the result of the activity, which strengthens the motivation to perform the desired behavior (skill) because the child knows why he is performing something. For example, naming an item results in a game with a named item.

Picture 1. An example of integrating IEP goals into a child's day-to-day activities within a preschool program (source: Mali dom - Zagreb).

In addition to child-directed activities and actions, this type of approach also includes planned activities and routines throughout the day as a learning context. The integration of goals into the child's routines or activities throughout the day allows the child to learn skills in an environment where they will be used (Picture 1).

In the example above, the goal of naming of clothes is pursued within natural situations that occur often therefore providing more learning opportunities.

With this approach we develop functional skills, i.e. skills that are practical and useful in the context of the child's life and the life of the family. Speaking of IEP goals we mentioned the R-GORI list that can also help, among other things, to evaluate the functionality of a skill.

Attached is a List of Routines that allows you to collect information from the family about their child's routines throughout the day so that a Goal implementation plan can be created. In addition to List of Routines, a matrix of integrating IEP goals into the child's daily activities is useful, whether the activities are child-directed or planned.

GLOSSARY OF TERMS

Long-term goals = statement that describes what knowledge, skills, and/or behaviors the child is expected to display within a year. Long-term goals are future-oriented.

Short-term goals = are measurable intermediate steps that need to be acquired to achieve a long-term goal.

Measurability criteria = criteria that the achievement of the goals of an Individual Education Plan is measured by. They show how well a child needs to show knowledge/skill and/or behavior and for how long in order to conclude that he/she has acquired it.

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STRATEGIES FOR STIMULATING VISUAL FUNCTIONING

SUMMARY POINTS

For most children with visual impairment the usual living environment is not stimulating enough to use their eyesight spontaneously, therefore it is necessary to adapt the environment and procedures to the individual needs of the child.

Strategies for stimulating visual functioning should be defined in relation to the individual needs of the child and should be integrated into everyday activities.

CEREBRAL VISUAL IMPAIRMENT

Vision is a complex sensory function that requires a hierarchical involvement of receptors (photoreceptors of the eye), transmission systems (optic nerves and optical radiation) and processing (visual cortex) that transform visual information into meaningful perceptions (images). Damage to any part results in some degree of visual impairment with characteristic clinical and functional manifestations.

Cerebral Visual Impairment - CVI is temporary or permanent visual impairment caused by damage to the posterior visual pathway and/or part of the brain, or disruption of transmission system from retina to the brain or the inability of the brain to receive and interpret transmitted images (1).

The term Cortical Visual Impairment is commonly used in North America, while the term Cerebral Visual Impairment is generally used in Europe (2). For the same visual impairment, the terms cortical blindness, cognitive visual impairment, visual processing difficulties etc. are also used as attempts to define as clearly as possible the origin and nature of the difficulty (3).

CVI is one of the most common causes of visual impairment in children in developed countries (4). Cerebral visual impairment is often present in preterm infants, children with neurological deviations and children with acquired brain injury (2). Accordingly, children with CVI very often have other neurological disorders such as cerebral palsy, cognitive impairment, hearing impairment and memory difficulties (5).

The diagnosis of CVI is often difficult to establish as it requires the cooperation of professionals of different specialties, and is diagnosed when (1) the eye examination cannot explain the extremely impaired visual functioning; (2) medical history involves neurological problems and (3) special characteristics of visual behavior are present (2).

Since the symptoms of CVI depend on the area and degree of organic impairment, the only common feature of the visual functioning of people with this visual impairment is that each impairment is different, and their characteristics are different. Visual impairment can be barely noticeable, but also rank up to complete blindness. Roman - Lantzy (2) lists specific visual behaviors of children with CVI related to color preference (6) and moving targets, preference of a particular part of the visual field, difficulties with visual and environmental complexity, new visual targets, and distance vision. It may also include non-purposeful staring and staring at the light, as well as the absence of or difficulty of vision-stimulated reaching for something (see Appendix 3).

Authors Lueck and Dutton (7) also state that visual functions can vary from day to day and hour to hour. The child may get tired quickly when looking in proximity due to reduced focusing power. They may have difficulty reading due to the inability to quickly switch fixation from one point to another – saccade. We use saccade to quickly change the direction of our watching. A child with difficulty performing saccades will prefer to make rapid head movements rather than rapid eye movements (1). He may also have difficulty tracking and accurately fixing fast-moving objects or seeing details on a moving target such as a television (difficulties with motion perception). There are also difficulties in depth perception which affects walking up and down stairs, stepping over obstacles, stepping on and off the sidewalk etc. There may be difficulties with visual memory and visual imagination - the child has problems remembering things he have seen and learning new skills when visual imagination is needed to imagine the sequence of actions/movements required to complete a task (7).

Dutton (1) looks at features of visual behavior associated with damage to the dorsal and ventral branches of the primary visual pathway in the brain.

When there is damage to the dorsal stream, problems can occur with tracking moving objects, accurately locating objects in space, using stairs and reaching for and pulling objects. In these situations, the child may find it difficult to adjust the movement to what is seen and may show clumsiness, hesitation, insecurity or not even noticing the danger. Damage to the dorsal stream can make it difficult to see different things at the same time, which can lead to difficulties in finding a visual target on a saturated (colorful) background.

Children with ventral current impairment have difficulty finding a route that should be well known to them, remembering, recognizing things they have already seen and have problems imagining situations they have already seen in their minds (1).

Some children with CVI may also have difficulties with visual-cognitive functions, such as:

- perception of line direction (line orientation) and line length - the child may not see the length or line orientation but may use this information for hand movements. Then the damage is at the level of the primary visual cortex or in the temporal lobe. If the damage is at the level of the parietal lobe, the grasping movements are inaccurate, although the child can tell which line is longer/shorter.
- Prosopagnosia or inability to recognize human faces appears to be the least commonly recognized agnosia in children, especially in situations where the child is typically functioning in other areas of visual functioning. A child who has prosopagnosia will react equally to known and unknown persons when they approach him and will recognize a person only on the basis of

voice response. Usually the environment notices this behavior around the 11th month of a child's life (8).

- Picture recognition and picture comprehension are often difficult in children with visual impairment. It is important to examine these abilities, especially if images are used in assisted communication. Some children cannot see and recognize visually demanding pictorial materials even though they recognize only an isolated part of the same picture.
- Perceptions of surface quality and texture often occur in children who have a less developed understanding of spatial relationships and/or recognition and memory of landmarks. Movement is often stressful if the child cannot perceive the surface on which he is moving, standing or is a part of.
- Awareness of space and orientation in space may be less developed in the case of damage caused in the parietal lobe or in children who do not move independently but are often passively "moved" (carried, pushed in a stroller, etc.).
- Eye-hand coordination (Picture 1) can also be affected when the parietal lobe is damaged. Some children with CVI turn their heads away from the target they want to catch. This may be associated with poor visual feedback during movement and the child may be asked to close his eyes instead of turning his head. If capturing is easier with eyes closed than while the child is looking at a target, we can be sure that visual information interferes with motor performance instead of making it easier and more accurate.

Picture 1. Stimulating eye-hand coordination with high-contrast targets in daylight (source: Mali dom – Zagreb)

Although the visual behavior of children with CVI environment often describes as inconsistent and unexplained, children involved in intervention strategies based on visual functioning assessment show significant progress in visual functioning (2).

Strategies to stimulate visual functioning in children with multiple disabilities

Children with multiple disabilities very often have more or less pronounced difficulties in visual functioning. Visual impairment alone can have a significant impact on a child's overall development, and children with multiple disabilities who also have visual impairment are at significant risk for developing developmental disabilities and learning difficulties (9). The degree and etiology of visual impairment can be different, and the presence of both ocular and cerebral visual impairment is possible (2,10). Regardless of the type of visual impairment, it is definitely necessary to encourage the child to use vision through everyday situations. That is why one of the main goals in children with visual impairment and additional developmental difficulties is to facilitate the child's ability to see and motivate him to look. Through daily and optimal use of vision, the child empowers and strengthens his visual functioning (2).

For most children with visual impairment, the usual living environment is not stimulating enough to spontaneously use their vision and visually explore but these children require adapted environment and individualized visual input to be visually active. Only through the activity of seeing will children really learn to look.

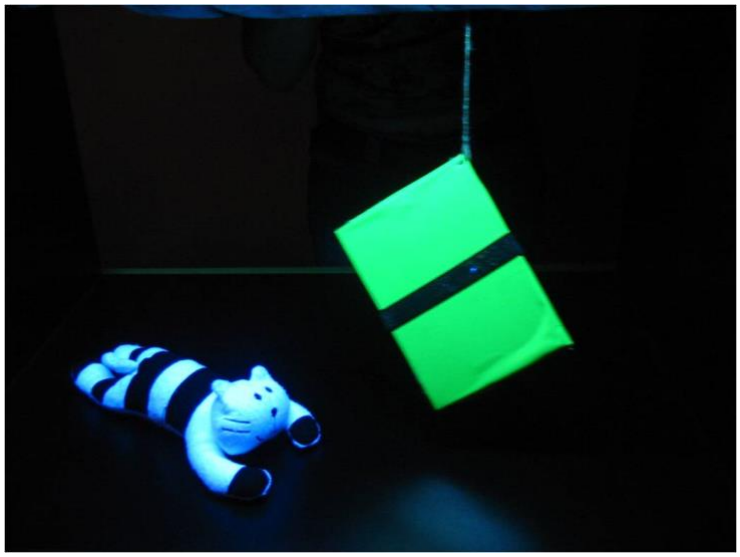
The intervention needs to be planned on the defined needs of the child. It is necessary to define exactly what the child can do and what challenges him in terms of visual functioning. Based on this information, strategies are agreed whose application will lead to the optimization of the child's visual functioning. For example, if the child visually explores red objects and does not look at the others at all, we will start with red objects in the intervention and we will not ask the child to look at other objects. After looking at red objects for a certain period of time a new element can be introduced, an object that is red - yellow, and it can be observed whether the child directs attention to it. If he shows interest in such an object it is a sign that the child has probably undergone changes in visual functioning. The child’s behavior will be our main sign when it is necessary to introduce some changes in the intervention itself (2).

In intervention, it is also important that strategies and activities are integrated as much as possible into the child's daily life and functioning, because in this way more frequent use of vision is enabled and

meaningful activity leads to meaningful visual function and learning. Thus, if the child likes to visually explore only red objects, they should be used through everyday activities in which the child otherwise participates (activities of everyday life, play, leisure activities, etc.).

The intervention will vary depending on the child's individual characteristics and needs related to the degree of visual impairment, age, stage of development and pre-academic/academic skills.

In order to stimulate visual functioning, different means are used, depending on the child's needs, i.e. the presence of certain visual functions and functional vision. Very often custom everyday materials are used, materials presented under ultraviolet light (Picture 2), light targets of different widths in different lighting conditions (Picture 3) and computer programs.



Picture 2. Presentation of objects under ultraviolet light (enhanced contrasts)

Picture 3. Directing attention and encouraging eye-hand coordination with a light target in dark conditions (source: Mali dom - Zagreb)

According to Roman-Lantzy (2), the basic principles in creating an intervention program are:

- precision - it is necessary to determine to what extent Cerebral Visual Impairment affects the child's functioning in order to create an intervention program that corresponds to the degree of visual functioning. Sporadic selection of methods and activities is not effective so the intervention should be based on the results of the assessment.
- intentionality - it is necessary to specify why and how the intervention is chosen, therefore it is necessary to be aware of "where" the child is now and which phase follows.
- reciprocity - is the process of sharing and accepting the perspective of another person and refers to the sensitivity to the perspective of a child with CVI. For example, whether the child's performance of an activity changes due to changes in the child itself or changes in the environment. Especially in cases of CVI, it should be taken into account that any change in the environment can affect the child's visual behavior (e.g. a change in the decoration of the room door in a child with CVI can lead to difficulty in spatial orientation).
- changes - in children with CVI we can expect changes in visual functioning in the form of improvement and we should plan an intervention accordingly.
- environment - unintentional changes in the environment often lead to inconsistent visual responses of a child with CVI. For example, a child who names objects when the object is on a monochrome contrasting background will not perform the same task if the object is in an unadapted environment full of detail. When planning the intervention, one should take into account the characteristics of the environment in which the child operates (contrasts, colors, lighting, size, distance).

In order to provide the child with visual stimulation through daily activities, it is necessary to:

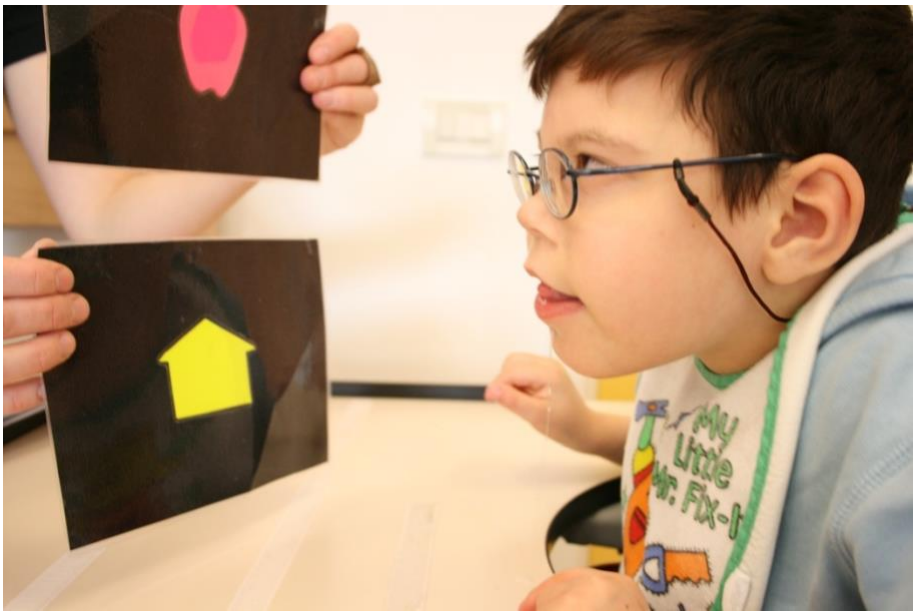
- arrange the environment in which the child is staying or the box according to the guidelines on adequate environment arrangement, taking into account the contrasts, light, color, size of the offered objects/targets, the distance from which the child looks at the object (Picture 4).
- adapt everyday toys and objects in a way that is visually stimulating for the child. For example, a canvas with a black and white pattern can be placed on the bottle from which the child drinks if it is noticed that the child reacts well visually to such a contrast and thus encourage viewing during daily activities. Existing toys can be adapted so that a contrasting color is pasted on them

(e.g. black dots can be placed on a yellow ball; a black dot can be pasted on a white diaper and shown to the child every time during changing), etc.

Picture 4. Adaptation of the table in the feeding situation - placing cutlery on a one-color contrasting background (source: Mali dom - Zagreb)

- observe at what distance the child is looking /showing interest in objects or persons. At that distance, bring him objects and approach him in communication. E.g. place a mobile on a crib in a contrasting color at a distance at which the child notices objects.
- give him enough time to visually explore the target in all everyday situations (very often children need more time than us).
- Introduce new objects, visual targets, activities gradually, some children find it difficult to accept novelties. The simpler, more constant and more predictable the visual information is, the easier it will be for the child to deal with it.
- in visual communication, emphasize facial features (eyes, mouth) in order to enhance the contrasts on our face and make it easier for the child to notice the other person's face and read facial expressions.

- use one-color toys/everyday materials on a contrasting background. Avoid variegation and lots of items in one place.
- The area where the child is staying should be well lit. The light source should be behind or to the side of the child, and in no way in front of the child to avoid glare.
- Avoid shiny surfaces and surfaces that produce glare.
- provide the child with an optimal body position to make it easier to focus on looking.
- illuminate the object or use strong contrast and reflective surfaces (if it suits the child) to draw the child's attention to the object (Picture 5).



Picture 5. Presentation of high-contrast targets in daylight (source: Mali dom - Zagreb)

- allow the child to look at the object in the way that suits him best (eg the position of the head can be tilted).
- place objects in the part of the vision field that the child uses.
- during activities with intense visual targets (especially light and flashing, Picture 6) it is necessary to monitor the entire child's condition to detect signs of overstimulation (changes in breathing rhythm, heart rate, large changes in muscle tone, anxiety, eye closure) or possible photophobia (11).

Picture 6. Teaching the perception of shape on a light box (source: Mali dom - Zagreb)

Given the proven effectiveness of interventions aimed at improving the visual functioning of children with CVI, there is a need for greater attention to specific, individually planned strategies based on individual assessment results. Strategies to improve visual functioning should be an integral part of educational - (re)habilitation programs that include children with visual impairments and additional developmental disabilities.

GLOSSARY OF TERMS

Cerebral Visual Impairment - temporary or permanent visual impairment caused by damage to the posterior visual pathway and / or part of the brain, or a disorder in the transmission system from the retina to the brain or the inability of the brain to receive and interpret transmitted images.

Optimization of Visual Functioning - the process in which we create the environment and procedures in a way that will allow the child to make the best use of their potential in the visual exploration of the environment through everyday situations.

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PROMOTING VISION

Since the visual system is very complex, basic medical information on the structure and functioning of the visual system as well as important psychological aspects of visual perception such as attention are indispensable. This also includes the regular visual development of the healthy child in the context of normal overall development, in particular also the "early preferences of the visual cortex". It should never be forgotten that seeing is an active process. Mrs. Strothmann and Mr. Zeschitz summed this up with the following sentence (1997): "It is not the eye that sees, not the visual cortex that sees, but the individual that sees".

At the beginning of visual supports, basic considerations should be undertaken in consultation with parents and other therapists:

1. A prerequisite for visual support is precise knowledge of the best individual conditions and the child's current situation. For many children with multiple disabilities, this is not only a question of the child's general level of development, but also of the child's form during the day, such as the child's level of alertness, as well as the possibility of positioning and positioning the child well. In order to be able to accept a visual offer, the child should be positioned in such a way that it does not have to make any effort to control its posture. It is therefore not self-evident that sitting is the most favourable visual position for the child; rather, the supine position, the prone position, the lateral position, the quadrupedal position with the upper body supported could be the optimal position for the child. Good cooperation with the physiotherapist in charge is therefore important. The physiotherapist can recommend a position in which the child is not preoccupied with head control, uprightness against gravity or overall body stability. Another question is which motor movements the child can perform: Can it turn its head, indicate the head in the supine position or in the prone position? Is there a preferred side of the body? Are there positioning aids in the house such as wedge pillows, towels, neck supports, breastfeeding pillows or are there already adapted aids such as wheelchairs, therapy chairs or standing stands?
2. Another prerequisite is a distraction-free environment with as few distractions as possible, as many children are very easily distracted. Many children are very sensitive to noise.
3. Furthermore, it should be clarified to what extent the lighting in the room can be designed (what light sources such as windows, floor lamps...are there?) and whether there are blackout possibilities. Therefore, it should be clarified with the parents which room in the home is most suitable for visual stimulation. This can then lead, for example, to visual stimulation taking place in the bathroom.

4. As in any pedagogical support, it is indispensable to always work with the child's motivation. The child's preferences and interests should be asked (see Functional Vision). Which colours and shapes does the child prefer? Can he/she recognise objects? What patterns, colours, shapes does the family prefer, e.g. the colour of the football team, if the family are big football fans and so often wear jerseys or have flags in the house. The importance of seeing in relation to life, the transfer into the child's everyday life should always be the focus of all efforts.
5. Furthermore, it should be clarified how the child deals with unknown people, new situations and play opportunities. Perhaps the child reacts with great fear and discomfort to any changes and so, especially in such cases, the focus should first be on building up a trusting relationship with the early intervention specialist with clear rituals that provide structure and security or the child should first be gradually introduced to the darkened room.

Important working strategies for performance:

a. The child needs a lot of time to see and react. It is essential to make sure that all offers are presented slowly.
b. Children with multiple disabilities need regular repetition. Therefore, it is important to show the same offer (e.g. visual story with the same pictures) again and again.
c. Overall, the support should be clearly structured and include rituals to give the children security and opportunities for anticipation.
d. New elements/objects can then be added as surprise effects after some time.
e. A multi-sensory approach should be carefully considered, i.e. conscious use of other sensory channels (acoustic and tactile stimuli). It is important to carefully consider and observe when this makes sense and when, for example, a linguistic accompaniment is too much and distracts the child from the visual stimuli.
f. By embedding them in everyday situations, a meaningful context should be created and the contents of early intervention should be transferred to everyday life.
g. In all offers, the balance between under- and overstraining must be kept in focus.

As already mentioned several times, visual stimulation in the context of early intervention must not be seen as isolated functional training. Rather, it is a training of the senses that addresses the child's overall personality - and includes individual psychological components such as motivation, feeling, will, decision. It is a constant reciprocal sensorimotor process.

Ideally, the basic features look something like this:

- all the above-mentioned requirements are fulfilled
- an optimal design of the environment was made
- Adequate stimuli and tasks are offered to the child so that he/she has the opportunity to actively increase visual experiences and to try out visually controlled behavior at his/her level.
- The child's own activity is thereby increased and thus not only the visual but also the overall development of the child (cognitive, socio-emotional, motoric) is promoted in these support situations.
- The child uses his or her vision more in everyday life, for example, by finding familiar colors and patterns from early intervention in his or her everyday life, recognizing them again and storing them further.

Setting:

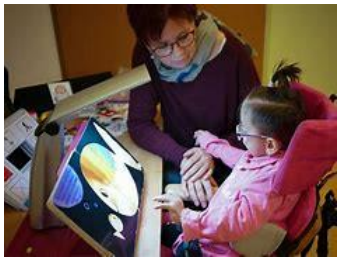
For children with multiple disabilities, the promotion and stabilisation of basic visual skills is not possible exclusively in everyday life. Whenever the stimuli available in everyday life are not sufficient to provoke any visual activity, we will try everything to improve the situation visually:

- We can darken or choose the lighting differently
- we can reduce the overall complexity
- we place the objects in such a way that they can be better recognised (figure background) e.g. on a light box, mini beamer and/or under black light.

General Low Vision Principles:

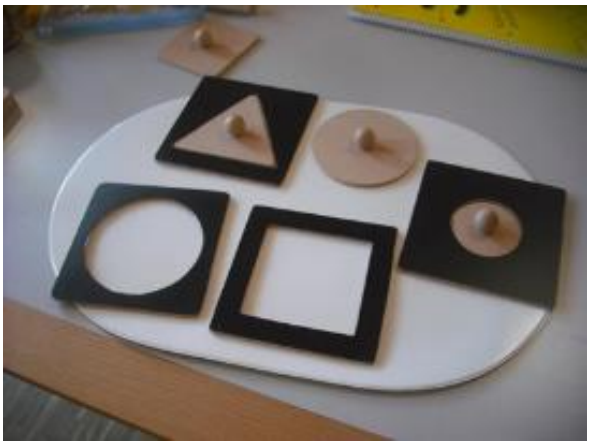
1. Adequate individual lighting (see setting):

- The light requirement varies greatly from individual to individual.
- As a general rule, the light must never blind a child.
- Therefore, the lamp/light source should never illuminate the child (eye), but should illuminate the surroundings



2. Use of good contrasts in visual offerings

- Clear, clearly visible objects e.g. black and white stripes
- Figure background design such as white object on white table- not visible



3. adequate individual distance

- at what distance can the child still perceive offers well?

4. adequate individual size

- Mostly larger objects are perceived

5. Reduction of complexity

- Attention steering
- Avoidance of sensory overload
- Perception of detail

Promotion Concrete:

According to ZIHL, basic visual skills comprise the elementary stages of visual orientation activity, including the attentional response, spontaneous visual interest, fixation, eye tracking movements, visual scanning and visual comparison (looking back and forth). These can be further developed, especially in children with cerebral processing disorders, through visual stimulation based on the principles of normal visual development through the systematic presentation of clearly structured materials.

Examples:

Visual attention

A visual stimulus is capable of influencing the child or the child's current activity in some way.

This is understood as the child's recognisable reaction to a purely optical stimulus. It is the prerequisite for active vision. In the case of severely disabled children, this is often *the first ability of the child that can be promoted in the area of vision*. The first signs of visual attention in these children can often only be recognised with closer observation:

Does the child show

- somatic reactions such as changes in activity levels like muscle tone or breathing,
- Verbal reactions such as a vocal expression
- Emotional reactions, such as joy, excitement or
- Behaviour change such as interrupts stereotypies.

Incentive to PROMOTE:

The aim of the support is to get the children to use their vision, even if it is only slight, more often and in a more targeted way.

- Generally work with strong differences (light/dark):
- Reaction to different light sources
- Multisensory integration

→ Well structured offer

➔ Danger of sensory overload

Objects that stimulate other senses, such as making a sound or being pleasant to touch, can be used to keep the child's motivation high, e.g. also for orientation as a start and stop signal.

It is essential to transfer the experiences from visual development into everyday life. For example, if the child enjoys black and white stripes or a certain colour, he or she should be able to find similar things in everyday life, such as striped bed linen or jumpers.

(Early Support Munich)

Fixation

To fixate a visual stimulus means to image it at the point of sharpest vision on the retina. You can see this when you examine a child with a point light source. If the child fixates the light, then you see the reflection of the point of light at about the centre of the pupil.

Visually impaired children often have problems with fixation, e.g. due to nystagmus. Fixation is often unstable and very dependent on the form of the day. Fixation behaviour is often very unstable and also depends on alertness and medication. As mentioned above, good positioning is important so that children no longer have to use their energy to regulate their motor skills.

Suggestions for PROMOTION:

The children should be offered interesting stimuli that are exciting enough to look at them closely. However, it is essential to create the external conditions for the children with multiple disabilities that enable them to fixate at all, e.g.

- Disturbance-free environment (switching off all other stimuli)
- Give the child enough time and thus the opportunity to be proactive.
- Start in the darkened room and then gradually move into the light
- Start in the centre of the visual field
- Ideal distance; possibly also in slight movement
- Self-luminous or illuminated objects with good contrasts and size

Eye tracking movements

Moving objects can only be perceived in detail if fast, smooth eye tracking movements are developed. Gaze and head motor skills are of central importance here.

Suggestions for PROMOTION:

- Visual stimuli with high prompting potential should slowly move into the field of vision
- From the periphery towards the child
- Move slowly in front of the child
- View moving objects from different distances
- First horizontal, then vertical and finally diagonal, circular and other movements
- Possibly additional information such as sounds as a start signal
- Media can be e.g. self-luminous balls, gloves in the dark room (black light material); torch games; light boxes, balloons, but also PC games, mini-beamers, iPads.

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Example Mini Beamer

In summary, the following questions can be asked (according to Walthes):

- Was the visual offer clear or was it too small, too big, presented too fast or too slow, too little contrast or not in the preferred color? Does the child need less complex images?
- Was the visual offer possibly offered outside the visual field in which the child is visually attentive?
- Could the child associate something with the object or recognize something? Can more opportunities be found to discover something visually by changing the environment, e.g. the

cot, or by creating special visually prepared play corners in the living room, eye-catchers in the home, etc.?

- What was the child's overall condition (tiredness, alertness, pain, medication)?
- What was the positioning like? Did the child have to use a lot of energy to hold his head or to secure his body balance?
- Do the offer and the child's interest match?
- Has an atmosphere been created in which relaxed vision is possible? Has the child felt comfortable?
- Was the room too cold or warm or not familiar enough for the child?
- Was the child able to be self-active?
- Does the child perhaps show more visual interest if the visual offer is combined with an auditory or tactile offer?

These questions once again show the complexity of visual support for children with multiple disabilities: the relationship between child, early interventionist/caregiver, time, space and offer in all variations. A good observation, documentation and analysis after the respective support units should always take place in order to avoid premature possibly wrong attributions being made, support measures being followed up, changed or even discontinued. Close interdisciplinary cooperation is particularly important here.

However, there are always children who "don't want to see" and these should not be pushed to use their vision. The maxim behind this should not be: "Use every visual organ to the fullest" but rather: Can the child somehow derive benefit or pleasure from seeing in any area.

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EXAMPLES OF MEDIA AND MATERIALS IN EARLY INTERVENTION

The light box (Lightscout) is suitable as a support medium for centring the child's attention. Its spectrum of use with the severely visually impaired child ranges from establishing an attentional response to sorting shapes, from distinguishing objects to painting and drawing. Self-activity with an almost unlimited number of materials is possible, the most varied possibilities for action are the defining moment.

Some children do not react to the usual visual stimuli, but to **black light** or to objects that are offered under black light conditions. The fluorescent material stands on its own, with high contrast and simultaneous absence of glare, it is much easier to pick out the figure and the ground.

The spectrum of **self-luminous objects of** all kinds is now very large. In addition to self-luminous spheres and cubes, there is a wide range of different luminous building blocks, cars and gloves. These can be used in a bright room as well as in a darkened room.

With the laptop/PC, we can offer many opportunities to the children and their families, including special games, that are designed for the use of visually impaired children such as the Würzburg Picture Series: Visual Stimulation of Visually Impaired Children (2018).

Another important medium is the **mini beamer**. It makes it possible to show pictures, photos, videos on walls, the floor, etc. in a very simple way (easy to handle) and has good contrasts. This means it can be used in a variety of very individual ways, e.g. also in the work of an institution.

In recent years, the iPad/tablet has increasingly found its way into our work with children with disabilities. Photos and pictures can be shown and there is now a wealth of apps available to support the different areas of development. In addition, the iPad/tablet is a fixed component in many families and thus family participation can be guaranteed. When working with children with multiple disabilities, care should be taken to ensure a good cover and a good holder (e.g. for positioning on the wheelchair).

In addition, there are of course a variety of self-made and purchased materials such as Leporello, dolls, books.... which are designed in good contrasts, shapes and colours.

Pedagogical design of visual promotion

Frank LAEMERS (2004) writes: "Many approaches also too often tempt us to remain on the material level. But the material is not the curriculum!"

It is never just the great, motivating super-medium that brings about visual activity. Nor is it the fact to have a large pool of funding material that guarantees this.

The key to profitable visual education does not lie in the medium and material but in the pedagogical design. Of course, this does not mean that the right choice of medium and material is ultimately meaningless. On the contrary. Only adequate material can set perceptual processes in motion. But for this process to be successful, additional factors are necessary.

Curiosity and motivation are important factors for learning, as already mentioned several times. Experiences of success facilitate the storage in memory, the future use of what has been learned and the transfer into knowledge and action.

A favourable, pleasant learning environment is very important.

On this learning climate, R. WALTHES (2005, 152) writes: "Learning to see and developing vision should involve as little effort and training as possible, but should involve as much joy and curiosity as possible. Effort often leads to tension and is counterproductive."

With regard to our support, we should always ask ourselves whether the child was able to participate actively or whether he or she just let something happen to him or her. Whether the offer and the interest corresponded and whether an atmosphere was created that made relaxed viewing possible. Where the child feels understood with its interests and in its emotional state, the best basis for its learning is given.

The success or failure of a pedagogical-therapeutic measure is determined by whether we succeed in addressing the child, strengthening the child's individuality and contact with the environment.

For us, this means that from the very beginning, we design visual education in such a way that it is also related to everyday life, i.e. that it is anchored in the daily routines of the family or group (in the case of children in day care centres) and especially in children's play.

Exercises must be replaced by experiences that are located within his emotional relationships and thus become meaningful for the child. Our task is to shape the child's environment in such a way that he or she can reliably and repeatedly have, stabilize and expand sensory experiences.

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STRATEGIES FOR STIMULATING SENSORY INTEGRATION

SUMMARY POINTS

Proper sensory integration implies the presence of appropriate adaptive responses. Proper adaptive responses to sensory information represent the ability of the central nervous system to successfully organize the sensory information it receives from the environment.

Appropriate stimulus processing by tactile, vestibular, proprioceptive, and other sensory systems is necessary for the development of more complex neurological functions. Therefore, disorders of these sensory systems need to be identified as early as possible.

Every child is born with the ability of sensory integration but must develop it by coming into contact with many things and stimuli around them in order to gain different experiences and adapt their body and brain to different challenges during childhood. Most sensory integration occurs during the adaptive response. An adaptive response is a purposeful, goal-oriented response to a sensory experience (e.g. a child with visual impairment directs himself towards the sound source of the sound toy and reaches for it. Reaching is an adaptive reaction while simple aimless waving is not). When the brain's sensory integration ability is sufficient to cope with the demands of the environment, the child's response is effective, creative, and satisfying (1).

The ability based on the appropriate integration of all sensory inputs is Praxis. (1) Praxis includes three components: ideation (creation of an idea of activity); motor planning and performance (action). It is important to emphasize that motor components (motor planning and the way of performing activities) should be preceded by ideation, so the cognitive development of the child should be considered.

The development of sensory integration in a child of typical development takes place gradually, as different types of sensory information are integrated in order to shape the functions required for goal-directed action. At the first level, the integration of the so-called internal senses- tactile, vestibular and proprioceptive. The integration of vestibular and propioceptive stimuli enables stabilization of the eyes during head movements and control over eye movements. Without this the child would not be able to focus visual attention on the presented object or make eye tracking movements. Good organization and integration of vestibular and proprioceptive stimuli enables the child to develop postural reactions as a basis for standing and walking, maintaining balance and orderly muscle tone (1).

Tactile, vestibular and proprioceptive senses are integrated into the perception of the body, which allows the child to feel, understand what the body is doing, without visually focusing on a particular part of the body. Proper perception of the body with clear tactile, proprioceptive and vestibular information is the basis of motor planning (1). Motor planning is the process of adapting body movements and positions to unknown situations and learning to successfully perform a task. If the perception of the body is deficient, the child will show insufficient ability to plan movements and will find it more difficult to direct new movements.

At the third level of sensory integration, the processing of auditory and visual sensations begins. The sense of hearing and sight is also developed at previous levels, but then the organization of the central nervous system is focused on the basic senses. Auditory stimuli combine with body perception to allow the child to develop speech and language comprehension. To develop visual

perception a lot of tactile interaction with objects is required, holding and moving objects to obtain information from muscles and joints as well as interaction with gravity. Visual senses are integrated with the three basic senses for the purpose of developing detailed visual perception and developing eye-hand coordination.

At the age of three, the fourth level of sensory integration slowly begins, where all sensory processes merge into a single whole of brain functioning (fourth level). Skills at this level (organization, coordination, self-control) are the final processes of all sensory processes that take place at the first three levels (1).

Appropriate stimulus processing by the tactile, vestibular, proprioceptive, auditory, and visual systems is necessary for the development of more complex neurological functions. Therefore, disorders of these sensory systems need to be identified as early as possible.

Influence of visual impairment on the development of sensory integration

Children with orderly visual development learn about the world around them through the integration of visual information and information from other sensory systems. They learn and create new experiences through observation and imitation. The environment for a child with visual impairment is less stimulating because, unlike a child with normal visual development, a child with visual impairment lacks the motivation to raise his head for visually interesting targets, people, imitating movement and the like. A child of orderly visual development will first visually explore an object then reach for it, holding it in his hands through tactile and proprioceptive information will learn about that object and its characteristics and then will start moving after it. A child with visual impairment will need the support of the environment to develop an intrinsic motivation to explore their body, environment and objects in the environment over time. In order to encourage a child with visual impairment to explore the body to create a body scheme, it is necessary to first become aware of body parts through massages or playing with objects on his body. A child with visual impairment will more often and with greater motivation focus towards, turn his head or reach out for certain object if it is a sound object that will further motivate him.

When we think of sensory integration disorders, sensory perception can be viewed as a continuum (3). At one end there are excessive reactions, i.e. increased sensitivity, with reactions of resentment and rejection of certain types of stimuli (see Appendix 4). At the other end of the continuum is reduced sensitivity, i.e. weak reactions and poorer perception of sensory stimuli. In the middle of the continuum is orderly sensory functioning.

Sensory integration disorder means that the brain does not process or organize the flow of sensory inputs in a way that provides the child with good, accurate information about himself and the world around him. Good sensory integration and processing allows all inputs to easily and quickly reach

their destination in the brain. Without proper sensory integration, learning is difficult and the child often feels uncomfortable and cannot easily cope with the usual demands. A child with sensory integration difficulties is likely to have difficulty generalizing experiences but will have greater problems mostly with motor planning and minor problems with cognitive functioning. It is important to know that sensory integration disorder represents atypical functioning rather than absence of functioning (1).

Damage to the central nervous system often leads to deviations in sensory processing. Sensory integration difficulties also occur in children who lack interaction with the environment, other people and thus different experiences through which they would develop appropriate sensory, motor and cognitive functioning, especially for children with visual impairments and additional developmental difficulties.

How to stimulate sensory integration?

A child with visual impairment needs to be provided with a stimulating environment by strengthening other sensory inputs. Activities need to be adapted to allow for the integration of different information into an experience that will make sense to the child for the activities of his or her daily life. It is necessary to think about the adaptation of the environment and materials through several experiences of tactile - kinesthetic, olfactory and auditory stimuli that will enable him to perceive space.

The following are examples of activities that are recommended to be carried out with a child through a daily routine and with their daily repetition the development of sensory integration is encouraged in an appropriate way in relation to the child's age.

PROPRIOCEPTIVE SYSTEM

In order to improve the processing of proprioceptive stimuli, deep pressure massages can be performed to adopt an image and orientation of one's own body. During the massage it is important to provide stronger, clearer information and it is also recommended to perform massages of opposite joints in order to encourage the scheme of one's own body and awareness of the position of the body in relation to space through proprioceptive stimuli.

Stimulate the area around the mouth (oral-facial area) through massages with circular movements and finger pressure in the area around the lips to encourage vocalization, chewing and swallowing.

Expose the feet to different tactile qualities (while the child is sitting, different materials can be placed under his feet – e.g. a piece of carpet, net, blanket, towel etc.).

During the day, proprioceptive information can be provided to the child through games in pair such as playing catch with a heavier ball, playing tug of war, playing catch with bags filled with sand, "rolling" activities on the floor and the like.

A massager can be used to expose the child to vibrations first over an object (for example a ball) and then directly by applying the massager to the foot and hand area. In doing so, the child will be exposed to tactile and proprioceptive information that allows him better organization of his own body and to focus on the activities that follow (2).

It is recommended to encourage goal-oriented behavior through exposure to various stimuli in the activity of a simple polygon - motor activity in several steps, e.g. crossing a bag or pillow in a four-legged position, crossing a tactile path, slipping under a chair or passing through a tunnel and finally arriving to the parent's hug or to a favorite toy.

TACTILE SYSTEM

In order to improve the processing of tactile stimuli and improve the quality of manipulative skills, encourage the exploration of various materials with hands by having containers that can be filled with rice, cotton wool, water, beans, oatmeal, pasta etc. Encourage the child to explore materials with his hands and feet. Also, various objects (balls or toys he likes) can be inserted inside and he should be encouraged to find them and take them out (activities should always be carried out under the supervision of an adult, because of a possibility of putting these materials in the mouth). The child can also be exposed to tactile stimuli of lower intensity such as whipped cream, finger paints, shaving foam. Make a path on the floor from materials of different textures (soft, rough, prickly ...) and encourage the child to explore the path with his hands and feet and crawl over it, or if the child rises to a standing position let him stand on the surface in thin socks or barefoot.

In early infancy encourage activities on the floor on a flat surface of different tactile qualities, in the abdominal position so that by opening the hands the child acquires new different tactile experiences. Dough, plasticine and finger drawing games are also recommended.

VESTIBULAR SYSTEM

In order to improve the processing of vestibular stimuli, it is recommended to include activities rich in proprioceptive stimuli in addition to being on a mobile device in order to better organize behavior and body patterns. For example, child can pull a rope to swing on its own, hold heavier objects while swinging (e.g. bottles filled with water, pebbles or sand - filling bags with sand weighing about 100-200 grams and placing them in the child's lap during swinging etc.).

The child can also be exposed to vestibular stimuli by swinging on a large therapy ball - he can bounce on the ball in his parents' lap, lie on his stomach or sit on the ball while the ball is being rocked back and forth, left - right.

You can also perform activities of rocking the child in a sheet or the child can crawl on a slope or perform some activity sitting on a slope of slight or greater inclination.

During the implementation of these strategies it is necessary to be consistent, especially in the case of resentment and difficulties in regulating behavior. It is important to announce the activity, as well

as its completion a few steps in advance and finish it when it is announced to make it easier for the child to anticipate what is to come. Also at a time when the child is unable to regulate their behavior, a brief exposure to deep pressure and awareness of the opposite joints can be performed.

GLOSSARY OF TERMS

Sensory integration is the ability to receive, organize and process sensory information from the environment for purposeful use in everyday life.

Motor planning is the process of adapting movement and position to unfamiliar situations and learning to successfully complete a task.

The sensory continuum observes sensory processing from reduced to excessive sensitivity with orderly sensory processing in the middle of the continuum.

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STRATEGIES FOR STIMULATING MOTOR LEARNING

SUMMARY POINTS

Difficulties in motor development, such as controlling posture of body segments and movement control, limit a child's learning process.

Through different body positions with the correct stimulation of movement, the child acquires new skills necessary for further motor development.

When stimulating motor functions, it is important to take into account other developmental components and investigate their mutual influences on motor learning.

The child adjusts his motor behavior in relation to what he sees and where he is in relation to the object. Visual functions are associated with head and neck control activity, hand function and the ability to learn and acquire the skills needed for the next development challenge.

Numerous studies indicate that the development of a child with visual impairment and additional developmental disabilities is associated with a delay in establishing control of body segments and movement (1-3), which begins with the onset of the development of voluntary movements (4). If we offer a child with visual impairment and additional developmental difficulties an object of interesting visual content, the child of early developmental age usually does not have a visual perception of himself in relation to the object and will not show the function of reaching, capturing and exploring the object. It follows from the above that the lack of visual perception at an early developmental age reduces the child's motivation to explore the environment. The child acquires the experience of simple and stereotypical movements, which prevents the normal sequence of control of body segments posture and uprightness.

It is important to consider all developmental components when stimulating motor functions in a child with visual impairment and additional developmental difficulties. Therefore, proper stimulation of motor functions requires the integration of motion and movement with the components of vision, cognition, attention and communication. If a child has a motor problem as a result of a brain injury, appropriate support needs to be provided for the child to be successful in performing activities in other developmental areas (5). If insufficient motor activity is the result of visual impairment, communication difficulties or learning and research difficulties, by adapting the environment and means of communication the child will show a better motor response. Therefore, the proper treatment of a child through motion and movement activities should not be directed only at a specific damaged system because it never functions separately from the function of the overall system (6). It should be borne in mind that children learn about movement through the experience of trial and error and thus gain experience of which movement is most effective in order to achieve the desired goal. The purpose of the intervention should be to increase the amount of adaptability of the movement, which means to give the child the opportunity to choose at any time the specific movement from his repertoire of motions and movements that will allow him to perform a specific activity (7).

Stimulation of motor functions in the supine position

At the earliest age, the stability of the body in the supine position begins to develop by keeping the head in the midline of the body. To facilitate retention of the head in the midline of the body the parent’s hand can be placed to the sternum area (Picture 1). Depending on the child's visual

functioning, use a visually contrasting target in front of the child's face to keep attention on it. The orientation of the head, torso, arms and legs to the midline of the body can also be encouraged on the parents' thighs (Picture 2) as well as during dressing and undressing activities (Picture 3). Orientation of the body to the center line will facilitate contact between fist-fist, fist-mouth, fist-thigh and fist-foot contact, meaning that the child will create awareness of his own body.

Picture 1. Encouraging stability in the supine position (source: Mali dom - Zagreb)

Picture 2. Encouraging orientation to the central line of the body on the thighs (source: Mali dom-Zagreb)

Picture 3. Encouraging orientation to the midline of the body through the activity of dressing and undressing (8).

At an early developmental age in children with visual and additional difficulties, it is necessary to offer objects in contact with the child's body, for example the torso, in order for the child to receive specific tactile information about the location of the object (Picture 4). An object placed on the torso makes it easier for the child to bring the upper limbs to the object itself. The offered item should be of appropriate size and shape for the grip function. It is always necessary to wait for the child's initiative and reach. If that's missing, the child's hand can be placed on the parent's hand and the object can be introduced through the parent's hand. It is important to emphasize that the object is never placed directly in the hand. The object should be offered on the outside of the hand or under the fingertips and provide the child with the necessary adjustment time. You can use rustling pads, a ball, a vibrating toy or beads. After a certain time, offer a tactile and/or sound object in contact with different parts of the body and encourage reaching for it (for example on the abdomen, shoulder, thigh).

Picture 4. Reaching for an object on the sternum (8)

The next step is to encourage reaching for a visually and/or audibly/tactilely interesting object in front of the body at a distance of the child's arm length (Picture 5a). When the child has adopted reaching for the object in the midline of the body, offer the object over the midline of the body (Picture 5b) so that by reaching for it, the child would rotate on the side and abdomen. If the child does not have a functional residual vision, it is necessary to encourage reaching in the direction of the object that produces sound.

Picture 5a and 5b. Reaching for an object in the midline and across the midline of the body (source: Mali dom - Zagreb)

Stimulating motor functions in the prone

In order to influence the development of control of the child's body posture, in the prone it is necessary to encourage the lifting of the head from the ground and support on the forearms and elbows. In front of the body, use visually and/or audibly interesting objects that will encourage the child to lift his head. If the child refuses to lie on his stomach, this can also be encouraged in the arms of the parents (Pictures 6a, 6b and 7).

Picture 6a and 6b. Encouraging head control with a sensory pillow and on the thighs (source: Mali dom – Zagreb)

Picture 7. Stimulating support on the forearms and elbows lying on the stomach (source: Mali dom – Zagreb)

When the child has adopted a stable support on the elbows while lying on stomach, offer a tactile and visually interesting object in contact with his/hers fists and encourage him/her to explore. Then encourage reaching for a visually and/or audibly interesting object close at hand. The object is offered in front of the head in different directions (left-right, up-down) with the aim of transferring body weight, but also adjusting the child's head and arm movements in the direction of the object (Picture 8).

Picture 8. Encouraging the adjustment of head movements in the prone (source: Mali dom – Zagreb)

Stimulating motor functions in a sitting position

Head and torso posture control can be encouraged in a sitting position in the parent's arms or on a hard flat surface, with appropriate physical support in the torso area. In this position, reaching for a

visually and/or audibly interesting object in different directions can be encouraged (up-down, left-right, diagonally, sideways) (Picture 9). In a sitting position, the child will choose the most successful strategy for connecting body segments and maintaining the center of gravity within the support base. The variability of movement in a sitting position can be encouraged by reaching for an object in different directions (9, 10). Manipulating objects in a sitting position will encourage cognitive development as well as the development of communication (11).

Picture 9. Encouraging control of the head and torso and reaching for an object in the other person's arms (8)

When the child is able to control the head and torso in a sitting position, a stable retention of the sitting position is encouraged with child's two hands in support on the ground. Gradually, support on only one arm is encouraged and finally maintaining a sitting position with free hands. When a child learns to sit independently with his hands free it is necessary to encourage reaching and grasping for objects, first in contact with different body parts and then offer visually and/or audibly interesting objects at arm's length in different directions (Picture 10).

Picture 10. Exploring objects in a sitting position (source: Mali dom - Zagreb)

Reaching for an object offered from the side of the body will encourage the child to rotate towards a lateral sitting position. From a lateral sitting position they will be able to go to a four-legged or kneeling position (8).

Stimulating motor functions in more demanding positions

The child can move around the space through back-side-belly rotation, pivoting on the abdomen, abdominal or four-legged crawling, through kneeling or sideways walking or walking forward. It is important to emphasize that the space in which a child with visual impairment moves should always have the same arrangement of things so that the child can better orient and move safely. The transition to a standing position can be encouraged through left and right kneeling steps, while holding onto stable support (Picture 11).

Picture 11. Transition to a standing position through a kneeling step (source: Mali dom - Zagreb)

Reaching for an object in different directions in this position will affect the variety and adaptation of the movements of the head, torso, pelvis and arms and legs, which will be an important preparation for the child to walk (Picture 12). When the child has adopted a sideways walk and when he can stand on his own and move forward, he can be offered a children's pushchair to help him orient himself in space (Picture 13). When walking independently, teach him the orientation in space according to visual, sound and tactile landmarks (8).

Picture 12. Encouraging reaching for an object in a standing position (source: Mali dom - Zagreb)

Picture 13. Encouraging spatial orientation (source: Mali dom - Zagreb)

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STRATEGIES TO ENCOURAGE ORIENTATION AND MOBILITY SKILLS

Orientation and mobility is a set of skills or concepts that, when mastered, enable a visually impaired person to move independently, safely and effectively (1). While orientation is a person's ability to determine the exact position of his body in space at any time, mobility is the ability to master the distance from the starting point to the goal (2). Orientation and mobility are based on conceptual assumptions such as spatial relationships (me and the object), acquired knowledge of body parts and understanding of directions - left, right, up, down. Orientation and mobility are also based on biomechanical assumptions, such as sufficient muscle strength and control for tasks such as moving certain parts of the body and ultimately holding a white cane.
If a child with visual impairments and additional developmental difficulties reaches biomechanical and certain conceptual assumptions, it is certainly necessary to include the child in the program of orientation and mobility.

Recommendations for stimulating skills needed for orientation and mobility

0 – 12 months

- start with basic visual stimulation to be integrated with reaching, tactile stimulation and sound landmarks (if the child has any residual vision and/or hearing); let the child be surrounded by visually attractive toys that produce sound
- integrate visual stimuli with activities such as fine motor skills
- expose the child to sounds characteristic for indoor and outdoor space and sound toys and enable direct exposure to sound (sound - sound source)
- expose the child to different textures, shapes, smells and gradually introduce stimuli of new qualities
- in order for the child to adopt the body scheme, start with simpler games of naming and touching body parts
- allow the child to move such as swinging in a lying position, rolling, turning, jumping slightly
- involve the child in daily activities, encourage exploration of furniture, household appliances and products, food, household activities; name the objects and explain what they are for and what can the child do with that object
- allow free movement and exploration on a daily basis: expand the child's space to match his or her gross motor skills. For example first a fence for a child, then later a corner in the room etc. You can use the so called "Small Room" for the child to learn and explore the space and also learn about the stability of the object

- the arrangement of the furniture should always be the same
- remove unsafe and fragile items and replace them with interesting items from everyday use
- introduce a predictable daily routine.

1. – 2. years

- if the child has residual vision, continue to use visually attractive objects to encourage the child to reach for them and to develop fine motor skills
- start with advanced skills - include the use of vision with motor skill tasks (playing catch etc.)
- determine the maximum distance at which the child can notice larger objects and encourage the development of distance vision
- help the child to produce the sound himself, offer him simple and clear names for the sound he has heard and give it some meaning
- use markings of different tactile quality to indicate, for example, its cabinet, furniture, boxes with different contents etc.
- expose the child to new and familiar food smells; name and later try to distinguish simpler scents, teach him how to smell
- allow the child to move daily; teach him how to use the toys that surround him and the toys that help him move more safely
- continue with games in which the child shows body parts on request
- play hidden object search games in order to develop the notion of object permanence
- encourage the child to explore the rooms and furniture in them, appliances, cutlery; name objects and describe what happened to them (e.g ."we covered the bowl" or "we closed the refrigerator door")
- increase the number of situations in which the child is directly involved in various household chores, e.g. helping with setting the table, pouring drinks etc.
- in outdoor conditions, provide the child with experiences of sidewalks, curbs, walking down the street, turning corners, using means of transport and experiencing different weather conditions
- provide the child with regular opportunities to try and improve the skills of moving at different speeds - walking, running in a familiar indoor and outdoor space (yard, playgrounds, large lawns, large playrooms)
- teach the child shorter routes to the desired destination, with clear features, according to known and desired activities (bathroom, play area, kitchen, cd player)

- encourage motor skills planning by helping the child with the following actions: opening lockers, closing drawers, crawling under furniture and over obstacles (polygons).

2. – 3. years

- expand and upgrade with the child his/hers already existing knowledge related to environmental sounds; comment with the child briefly and clearly about the qualities of the sounds (high, low, loud, quiet) and where they come from (far, close, far - behind, far - in front)
- encourage the child to pair different tactile objects, name the texture under the child's feet and hands; e.g. ball - smooth
- expose the child to different scents and their source and connect scented associations with the location, e.g. flower shop, doctor's office, gas station, bakery etc.
- expand the number of tasks that the child can do on its own (e.g. taking off shoes, T-shirt)
- learning more complex environmental concepts and features (taking the child to the street, to the crossing, listening to traffic, commenting on which sound indicates that it is safe to cross the street, warn the child about what would each sound mean for his safety; what landmarks are necessary for the child to know for sure where is he located; crossing the tram line, intersections with audible traffic lights and without audible traffic lights)
- provide the child with the opportunity for daily movement through walking, running, climbing, jumping, using obstacles, playing on a trampoline, swing, pool, children's playground
- continue with games that involve naming body parts and introduce more complex naming such as wrist, waist, hips, shoulders, ankle etc.
- in activities with the child, integrate an understanding of spatial propositions (in, from, behind, in front of, below), requirements in relation to the environment, for example “There is a spoon in front of you, take it.”
- encourage different patterns of movement in motor skill games with the child: dance movements, gymnastic elements - forward roll, skipping, jumping from a lower height, walking backwards.

How and with what goals the orientation and mobility program will be implemented will depend on the visual, motor and cognitive functions of the child. Due to their motor or cognitive difficulties, some children will not be able to adopt certain components of orientation and mobility (e.g. using a

white cane), but as soon as the child starts moving around we must enable him/her to move as safely and purposefully as possible.

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STRATEGIES FOR STIMULATING COMMUNICATION SKILLS

PRE-LINGUISTIC COMMUNICATION

SPEECH - LANGUAGE DEVELOPMENT

SUMMARY POINTS

Most early intervention programs in the field of communication are aimed precisely at encouraging the establishment and dissemination of interaction, the use and dissemination of means and functions of communication, as well as observing and encouraging the skills of joint attention.

Children with developmental disabilities follow the milestones of regular communication development, but their development may be slowed down or stop at a particular developmental milestone.

Creating a communication-rich environment with a multimodal approach (gesture, image, movement, technology) creates the preconditions for more successful speech and language development.

DEVELOPMENT OF COMMUNICATION SKILLS: PRE-LINGUISTIC PERIOD

The child is born as a prosocial being and from the very beginning is largely directed by social signals (1). All infants communicate through crying, smiling, body movements, and other nonverbal behaviors. Through successive interactions, their parents, families, and people around them interpret the meaning of these signals and respond to them. Through these early interactions, newborns discover that their behavior has a strong effect on caregivers and thus develop increasingly effective ways of communicating. The development of communication skills enables children to control their social and emotional world and to establish relationships with others.

The period of acquiring skills for successful communication is called early communication (0 to 6 years) and it overlaps with early childhood. Early communication includes the prelinguistic period (0-2) and the period of early linguistic communication (2-6) (1).

During the prelinguistic period, important developmental transitions occur - from pre-intentional to intentional communication, meaning the turning point when the child consciously and intentionally transmits his messages to the environment, as well as from pre-symbolic to symbolic communication - from simpler forms (crying, gaze, facial expression) to increasingly complex (words, signs, sentence forms with all linguistic features and rules).

We can also follow this period through the development of the already mentioned means of communication (2); during the first year of life, various prelingual communication behaviors arise and develop. Formal speech is preceded by a whole complex system of nonverbal communication between the child and the caregiver. Before uttering his first word and developing language communication, the child already expresses himself in many different ways: by movement, laughter, crying, muscle changes - tension and relaxation of the body, reaching and showing gestures, facial expressions, imitations, various behaviors such as rejection, acceptance and similar (3). It is important to note that all systems in different stages of child's life develop in correlation with other developmental components.

Furthermore, we follow the period of early communication through the development of communication functions - imperative and declarative. In the beginning, the child's need for communication will be mainly marked by an imperative sign - to communicate in order to satisfy his own, current need. However, very quickly this communication takes on the character of declarativeness, i.e. communication for the purpose of exchanging information and sharing experiences, which is actually the essence of communication (4).

As already mentioned in the text, formal speech is preceded by a series of prelinguistic communication behaviors that are the basis of speech for some children, while for children with

speech and language development difficulties it can serve as a support, but also a mean of communication as a substitute for speech. Children learn about communication by sending signals and monitoring the reactions of the environment and reacting again. The need to apply different strategies aims to create a wide range of communication repertoire from which the child can choose a way of communication that is within his capabilities and needs. As the basis of the development of communication is interaction, primarily the one that the child establishes with his caregivers, strategies to encourage communication skills must be based on the establishment of a basic relationship, its maintenance and expansion.

Encouraging Strategies

a) Encouraging contact

At the earliest age, the first contact is made between mother and child in the mother's arms during breastfeeding. The child feels safe in the mother's arms, feels the touch and light movements of the mother's breathing, learns that the mother responds to his signals and communication. Even then, eye contact between mother and child develops when the child looks at the mother with a fixed gaze. During this period, depending on the baby's visual functioning, mother can emphasize facial features with makeup to emphasize contrasts and it is also recommended that the baby be held on both sides of the body during breastfeeding or bottle feeding to stimulate the sucking reflex from both directions. At an early age the child's communication progresses, he looks more at the faces, begins to follow facial expressions, responds with a smile or cry to information from outside, notices changes in the environment, parental movements, sounds etc. At an early age it is necessary to respond to the child's eye contact, give him a look, use different vocal games (playing with vocals, cooing, syllables etc.), smile, give him toys near his body and imitate his communication signals, name objects.

b) Stimulating body expression and using gestures

The child communicates with the whole body, pushes away, tries to turn around, grab a toy etc. In the early period it is necessary to encourage the child with various songs pointing out body parts and changing of tones, if he raises his hands it is necessary to hold him and emphasize "You want up"; describe the actions that the child is doing and briefly announce your actions to the child. Develop a game of hiding with the canvas, play games with the child on the floor at its level. Present him with a toy within the reach of his arms to make the child move towards it. During this period, the child develops spontaneous gestures and learns certain gestures through imitation and the activities he does. Gestures are most often related to everyday activities: eating, drinking, waving bye-bye etc. Deictic gesture is the most commonly used mean in the period of prelingual communication (5).

Using a gesture makes it easier for the child to express needs and also perform certain activities that he wants and reduces frustration as the gesture supports interaction. Develop interaction through games that are pleasant for the child and use a balanced change (I - you) in games (games with picture books, songs, toys etc.). The development of such games reveals the child's intention, coordinated verbal and non-verbal reactions, animated responsiveness and giving the child the opportunity to respond. The child in the second half of the first year discovers that his behavior has an impact on the environment, discovers the forms of communication that are the basis of speech development.

c) Joint attention

Other important guidelines for stimulating the development of communication rely on encouraging the skills of joint attention, following its natural development (6). Joint attention serves as a foundation for the development of communication competencies and is the basis for the development of early social and cognitive skills (7). These skills begin to develop at 9 months of age, when a child begins to share attention with an adult, only to follow the attention of a communication partner between 11 and 14 months. Between the ages of 13 and 15 months, a child directs the attention of an adult. The appearance of these skills is visible when the child begins to follow someone else's gaze or pointing gesture, in different ways draws other people's attention to the desired activities and brings and shows objects only with the desire to share the experience. He begins to see other people as intentional beings, as well as himself, so other people's behaviors toward external objects can be followed, directed or shared. The ways in which joint attention can be encouraged is by inserting yourself to the child's object of interest, imitating what he or she is doing, commenting on actions and pointing to the object of interest. In order to encourage communication skills it is always important to follow the child's guidance while revealing his interests, and the environment must always be in the function of encouraging all communication and social attempts.

The ability to initiate and maintain social interaction is crucial for further development and for establishing and maintaining relationships with caregivers and others. The responsibility of communication partners to potentially communicative behavior of infants and children with disabilities (ages from birth to 3 years) has been shown to influence later communication development and has become a crucial component of intervention strategies (8).

GLOSSARY OF TERMS

Declarative communication functions = the goal of these functions is to share experiences, most often in the form of commentary

Imperative communication functions = the goal of these functions is to achieve a physical goal, most often in the form of requests (searching for objects, activities, person)

Intentional communication = a period of communication development in which the child is aware that his behavior will affect the environment, i.e. he intentionally sends messages

Pre-intentional communication = a period of communication development in which the child is not aware of the fact that his behaviors affect other people and the environment "guesses" what the needs are according to the child's behavior

Joint attention = the child's ability to direct attention together with another person to the same object of interest

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SPEECH - LANGUAGE DEVELOPMENT

Communication lays the foundations on which language acquisition and speech development are built. Given the fact that prelingual communication is the foundation and supporting pillar of language acquisition, it is important to monitor and notice all those early deviations before the child is expected to speak. Parents often miss these early deviations because they are focused on the appearance of speech, and many communicative deviations are interpreted as characteristics of the child's personality, stubbornness, disinterest, not difficulty (1).

Communication deviations are observed in the early prelingual period and are very visible through atypical behavior of the child who may show reduced interest in other people, not use communication or have very scarce means of communication and communicate only for a limited number of communication functions. Language disorders, on the other hand, manifest themselves in completely different characteristics. We observe the development of language through the development of receptive language, which can be lexical and situational understanding, as well as linguistic expression. According to the period of occurrence, we divide expressive language into pre-linguistic (pre-expressive) and linguistic (expressive) periods with accompanying developmental milestones that point us to possible orderly or deviant development (2) (see Appendix 5).

Thus Oller et al. (3) state that the delayed appearance of a canonical syllable (production of a series of syllables of the same or different voice structure) that occurs between 7.-10. months can be a warning sign of delayed speech - language development.

It is important to distinguish linguistic comprehension from linguistic expression in children, because if there are difficulties in receptive language, they are always reflected in linguistic expression as well (4). However, difficulties in language expression can also occur "in isolation", i.e. it is possible that a child who has poor expressive vocabulary and/or speaks agrammatically has no difficulty in understanding the language.

Speech is an acoustic realization of language and is the most present because it is heard. Parents look forward to the appearance of speech with great interest and sometimes impatience, and any deviation in the form of delay or incomprehensibility is quickly recognized and they often seek professional support or advice.

In children with early established developmental disabilities it is important to encourage both early prelingual development and speech - language development, and to start as early as possible by creating early parent-child interaction patterns and ensure a certain level of stimulation on a daily basis through repetitive activities or daily routines. Continuity of monitoring is necessary, which will determine the timeliness of the intervention through parental counseling and direct professional support in working with the child.

Stimulating early language development

a) Child oriented speech

In the early developmental period, the environment spontaneously adapts to the child using child-oriented speech; the so-called "mother's" or "baby talk" speech (4) which is characterized by a slower, more pronounced rhythm, a higher, singing, cheerful voice with more frequent variations, shorter and simpler words with frequent onomatopoeic substitutions. The importance of the seemingly meaningless and incomprehensible statements of the child (voice, syllable, jargon) are emphasized and supported by the environment who then imitates and interprets their meaning. With sensitive feedback, the child will prefer to repeat and be motivated to vocalize because he feels good and successful and is encouraged to participate in the interaction. There are also frequent pauses in the speech that emphasize an important part, which gives the child enough time to process speech information. Also, a pause provides the opportunity for a child to complete a speech statement on their own. This way of behaving is also very important for children with developmental difficulties, where the emotionally colored situation and the way of expression will sooner arouse interest and focus on the speech partner and/or the interesting object he offers to the child.

b) Expose the child to a "speech bath"

Children with developmental disabilities and consequent delays in communication development are generally more likely to lack speech and language stimuli from the environment. The reason for this is probably that due to the nature of their difficulties they show a low level of responsiveness, so parents lose motivation faster or think that the child can hardly understand or not understand them at all and do not see the need for such encouragement. However, it is extremely important to comment on everyday situations, routines or rituals in which the child participates in short and clear sentences and simple vocabulary. The first situations that a child begins to understand either through announcement or participation are precisely those situations that occur with a certain rhythm and regularity. It is extremely useful to use a gesture or any other supportive mean of communication because they can also improve the level of understanding. For example, while bathing, touch the child's body parts with a sponge and name them. Make comments like: Now you'll be taking a bath, you are bathing! Ooo, you like to take a bath. Bravo! Show or give a child a recognizable object that can be an announcement for the activity itself, e.g. a duck, a sponge, a scented bath that the child can smell. Comment verbally and with a gesture: You want more! That's enough, it's over. Use this method of communication in other routines as well (feeding, going out, going to sleep, dressing, undressing, etc.)

c) Encouraging gestures

Gesture is a support for language comprehension and expression and therefore needs to be used extensively in interaction and communication with the child. A gesture directed at another person (communication gesture) is also a form of non-verbal language expression. Thus, during play/ activity/spontaneous behavior imitate the child's movements and give them meaning, for example if the child approaches an object make a comment „Yes, that is what you want“ or when swinging say "You're dancing now." Support natural situations also by a gesture, e.g. in songs clap rhythmically or in praise say: Bravo! Wave on the way out and encourage the child to make the same movement. Often use the pointing gesture and encourage the child to do the same in the function of pointing to the something that was named, getting the desired object or commenting, for example: „There is a car here! See, a plane is flying by“ etc. Use iconic gestures that mimic the appearance of an object or an action they can perform, for example: „Do you want a drum?“ - alternately tapp your palms, „Do you want a book?“ - open folded palms as opening the pages of a book etc. Use conventional gestures following the current communication context, e.g. gestures for more, done, eat, drink, give, no. It is important to substantiate each gesture verbally as well. In a child with visual impairment and/or motor difficulties, gesture learning can be encouraged by guided movement and appropriate physical support (hand in hand) to make the child become more aware of the movement. Speech-rhythm games are an example of the connection between speech, movement and gesture (see Appendix 6).

d) Encouragement through play

Play is the primary way to learn about yourself, others, and the environment; it is universal, known to all children, instinctive and an essential part of growing up and forming a personality (5). However, we often need to help children with disabilities create a game and give them the opportunity to actively participate and learn. By playing with the child, we encourage receptive and expressive language.

Receptive language

During play it is desirable to follow the child's interest, to put yourself in his "focus". Imitate his actions and upgrade them through movement, voice and word. By encouraging exploration and manipulation through object communication with attractive, colorful sound toys, we work to direct the child’s attention and name what we see, touch or hear. Take into account the child's possible aversion to some materials, loud, sudden sounds etc. Simplify requirements, talk "less" and with clear and concise instructions encourage child's search or recognition reactions, for example „Give me a ball, a bear“ or some other experientially known object such as a bottle or a cap and wait, provide enough time for reaction. Often, children with developmental disabilities need more time to process information. Name in one word persons, objects, actions when the child is focused on it

because otherwise the words lose their meaning. In addition to pointing to the named object or person, for better understanding use other means depending on the child's abilities (actual object, action, picture, written word). Use short, simple sentences with repetition of a situation or game, taking into account whether the child understands us. If necessary, provide physical support by directing visual attention and/or the child's hand in order to reach or show the named object. Different boxes can be created, for example My toys, Bathroom, Everyday objects, Spring with thematically related objects/toys to encourage exploration and functional play and adoption of a receptive vocabulary (for example of the game see Appendix 7). In addition to lexical comprehension, we encourage situational understanding through single-syllable or multi-syllable orders that accompany the situation of the game, for example „Take this - Give me“ or „First me then you“ through the game of exchange, for example inflating balloons or putting the ball in a box, giving the baby a pacifier, putting it to bed and so on. In the initial learning to understand the given order, first we perform the action and then encourage the child to imitate with different levels of support.

Expressive language

Imitate the child's vocalization and respond to it with vocalization because it is also a game of change, and thus put the focus of attention on yourself as a communication partner. For better imitation it is always good to start with the sounds P, B, M because they are easily visible due to their formation on the lips. Connect these sounds with for example sounds that animals make like moo-moo or baah-baah, or with bye - bye gesture to encourage expression with meaning. It is useful to encourage the pronunciation of simpler, two-syllable words as well as close, experientially familiar objects, toys, and close people.

Encourage and emphasize shorter expressions (there it is, give it, that, that is, no, more, done) and onomatopoeia, i.e. imitation of sounds (animals, means of transport, various natural phenomena). Use "fun" words as often as possible in a natural communication context because they are very memorable and easy to repeat, for example during a meal when the food is nice we say „Yummy“ or when it's not we say „Yuck“, when we drop something we say „Ouch“ or „oops“, when a child goes down the slide we say „Whee“ and so on. These situations are funny, attractive to the child and he likes to repeat them, especially if they are accompanied with some overemphasized affectivity (6).

Spend time with the child using picture books or short illustrated stories because they are a rich source of new words. You can name new words while using pointing gestures and dramatization, you can act, imitate with your voice, sing songs about a character from a picture book. Name an action that is related to the child's current activity (bathing, playing, playing an instrument, eating,

drinking etc.). Different figurines, dolls and models can be used in the pretend play with the child, imitating various actions with the toy, for example the doll eats, sits, sleeps, bathes etc.

It is important to emphasize that we never interrupt the child in his spontaneous expression, nor correct the child or comment negatively, but we listen to him and then give the correct speech model. There are also indications that some approaches based on direct referral, commands, forced repetition for a child to utter a word do not help the child's speech development. Children need opportunities to express the words and sentences they will utter if and when they are ready to do so (7).

GLOSSARY OF TERMS

Canonical vocalizations = production of a series of syllables of the same or different voice structure, e.g. da-da, ma-ma

Lexical comprehension = comprehension of the vocabulary, independent of the situational support

Situational comprehension = relies on understanding the characteristics of the situation, prosodic features of speech, facial expression and gestures and not primarily on linguistic knowledge and understanding of the spoken word itself.

Receptive language = refers to the ability of understanding language-shaped messages.

Expressive language = refers to the ability of linguistic expression, language production. This involves shaping words (vocabulary) and combining them into simple, two-part expressions and then more complex, all up to the completely correct use of grammar.

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The Active Learning approach is an educational approach developed by Dr. Lilli Nielsen (1926-2013), who as a developmental psychologist and preschool educator has worked with people with multiple disabilities for over 40 years.
This approach represents a total approach to teaching people with greater and multiple disabilities. The Active Learning approach does not only address specific tools and equipment but also includes assessment, curriculum, specially designed equipment and teaching strategies that support students to be active in their environments. The Active Learning approach is based on the developmental

ENCOURAGEMENT STRATEGIES ACCORDING TO THE PRINCIPLES OF ACTIVE LEARNING

levels of J. Piaget and views a person holistically, taking into account all developmental areas and skills - motor, cognitive, communication, sensory and social-emotional skills.

SUMMARY POINTS

The Active Learning approach emphasizes the creation of developmentally appropriate and enriched environments so that a child with visual impairments and additional developmental difficulties becomes an active participant in the learning process.

While learning skills helps in learning how to do something, learning concepts helps in learning why I do something.

When learning a new task or activity, all children go through the stages of a dynamic learning cycle.

The Active Learning approach is based on the fact that all children learn best through active participation. Each type of activity, especially in the earliest stages of development, "networks" our brain and establishes the critical concepts and skills needed for future learning.

Jean Piaget (1) describes the period of research and interaction that children go through in the first two years of life as a sensory-motor period. During this fundamental period of learning, the child learns to pair motor behaviors with sensory experiences. We often call these behaviors a "play," although these situations extend beyond the context of the play itself. A child without impaired vision, hearing and/or other influential difficulties spends time receiving a huge amount of information through his senses: sight, hearing, touch, taste, smell, proprioceptive and vestibular system. The child is constantly exposed to information coming through these systems that work without restriction.

In order for a child to progress from one phase to another, according to Piaget, three criteria must be met: (1) physical and physiological growth, (2) sensory-motor experience (acting and thinking about real, concrete objects), and (3) social interaction. Interaction refers to the relationship with parents and peers through play.

Concept development/The difference between concept development and skills development while learning

In active learning, it is necessary to emphasize the importance of skills development and concept development. In addition to the skill that the child develops, it is necessary to encourage an understanding in general of the content of which that skill is a part. To understand the difference between a skill and a concept it is necessary to define and explain their meaning. A skill is the execution of a certain activity while the concept is an understanding of the content and elements of that same activity. While learning skills involves a learned sequence of actions, learning concepts represents an idea of the world, mental representation. While learning skills helps in learning “how” to do something, learning concepts helps in learning “why” I do something (2).

For example, a skill is the ability to sit, watch, crawl, walk, hold an object, eat, etc. while the concept is understanding whether an object exists even when I drop it; when I crawl or walk, do I move with intent; when I observe an object that I'm holding or that is close to me, do I understand what is it for, when somebody covers the object whether I will look for it or I'll move on immediately. Within the development of the concept, skill development is included according to the child’s abilities.

Jan van Dijk, one of the leading experts in working with children with visual impairments and additional developmental disabilities, says that we can connect all our knowledge with experiences and our actions. Experience with the world, people, places and objects helps us to form concepts.

Children with visual impairments and additional developmental disabilities have difficulty learning concepts. They have difficulty understanding how the world works, how parts of that world are mutually connected, how similar and how different they are.

Kurt Fischer (1) points out that concepts are learned by systematically adding new information to those already known. For example, when a child first plays with Lego bricks, he learns about the characteristics of Lego bricks: shape, color, texture, size. After that he can find the same characteristics in other Lego bricks. He then learns that two Lego bricks can merge, gradually learning what the term "Lego" represents and that "Lego" can be bricks of different shapes and sizes.

The following strategies can be helpful in teaching children with visual impairments and additional developmental disabilities:

1. Use games / activities that the child understands

The child will participate more in activities that he understands and is motivated by. Adapt activities to the child's needs and implement those that motivate the child. The child will be most involved and understand those activities that happen often and that make him go through the experience.

2. Use activities that the child enjoys and laughs while doing it

Motivation to learn is enhanced if the child experiences pleasant experiences during activities and play. For example, if you swing a child in your arms or in a swing, you can go through many concepts through the game, for example fast, slow, stop, repeat the game and so on.

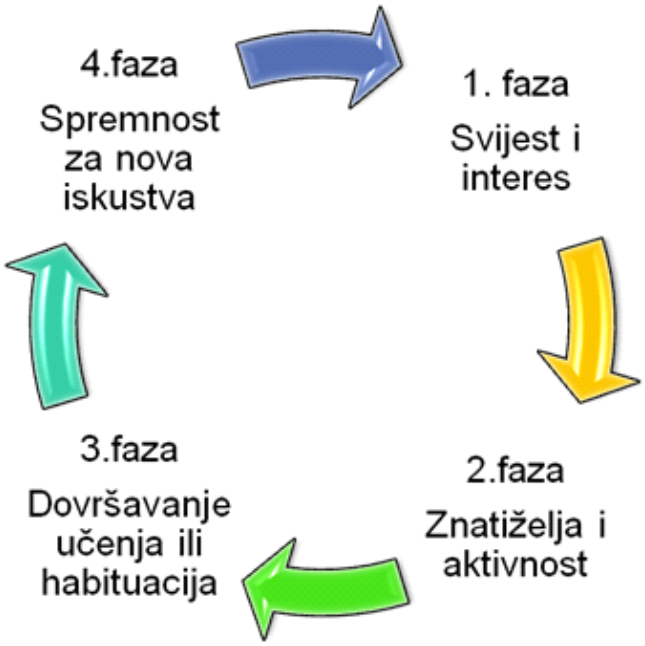
3. Incorporate communication into any type of activity or game

In children of typical development, play develops spontaneously as they have the ability to observe others and imitate content and any interaction between caregiver and child develops naturally. In children with difficulties in interaction, it is necessary to include communication that will be available to the child and enable him to receive information from the environment and to send it so that the play can continue. Therefore, it is important to pay attention that the communication system (signs) in each situation to be stable (the same) so that the next time the child can respond to it and thus develop concepts.

Learning characteristics according to the Active Learning approach

All children go through 4 stages of learning when learning a new task or activity. Dr. Lillie Nielsen called these phases a dynamic learning cycle (Picture 1). It is important to recognize each of these stages and understand how we can encourage further learning through environment changes. When a child "gets stuck" at a certain stage, there is a "disharmonious" learning. Self-harm, self-stimulation

or aggressive behavior can be some of the signs of disharmonious learning, so recognizing and correcting the cause is one of the imperatives in supporting skills acquisition.



Picture 1. Dynamic learning cycle (3)

In the first stage, the child becomes aware or interested in one of the following: (1) his or her own motor or sensory activity; (2) objects or activities in the environment; and (3) persons in the environment including communication activities. In the first stage, awareness and interest are key. When a child first moves its body, these movements are random. Awareness occurs when a random movement becomes intentional. If a child is not aware of something, how can he learn?

In the second phase, it is crucial that the child is independently active - exploring, interacting with the environment. The child should be allowed the interaction that allows him the best input. For example, pushing, hitting, grabbing, throwing, putting in the mouth. The child can use their hands, feet, mouth, head, chest or any other part of the body. The child should be allowed to actively explore in a variety of positions, including the position on the abdomen, on the back, on the side, in a sitting or standing position.

In the third stage, the child completes learning with activities. The activity is repeated to the extent that it becomes part of the child's patterns. The activity or action becomes familiar enough that it no longer presents challenges to the child. This phase means that the child learned through the activity everything he/she could with the given resources at a certain time. The child may briefly interact with the activity or may become bored. The child may begin to participate in a stereotypical way in

the activity. We can hear a person who interacts with a child say something like "He/she used to love this activity but doesn't like it anymore, I don't know why".

The fourth phase indicates that the child is ready for new challenges which will lead to new awareness and interest only if the child is given the opportunity to experience new sensory and motor activities and if the challenges offered are within his developmental level. Other people interacting should be interested in the child's current or past activities. This phase means the need for new experiences, new challenges, new activities, new interactions. It is important that the new challenges and activities are only slightly different from the previous ones. When new experiences are too difficult or too easy, the child may refuse to participate, expressing frustration through self-harm or aggressive behaviors or showing stereotypical behaviors.

The Active Learning approach emphasizes the creation of developmentally appropriate and enriched environments so that a child with visual impairments and additional developmental difficulties becomes an active participant in the learning process. From the specially created environments, we will single out the Small Room, the Resonant Panel and the Position Panel.

The Small Room

The Small room represents a frame of reference for the early development of spatial relationships. The aim is to encourage the acquisition of spatial relationships and reach in the child. The child's stay in the Small Room encourages the development of sensory integration, an early notion of the object, knowledge of the position of the object and an understanding of oneself as one who produces sounds (Picture 2).

The objects in the Small Room are suspended with elastic rubber, which allows them to always return to the same place after the exploration and make it easier to understand the concept of object stability. Items can also be placed on the sides on an inelastic cord.

It is recommended not to push the child into the Small Room but to place the Small Room above the positioned child. During the stay in the Small Room, it is not necessary to comment on the child's actions, but to give him the opportunity to independently research and compare. Selected objects should correspond to his learning channels (sight, hearing, touch, smell, taste, proprioceptive). Objects should allow interaction through pushing, reaching, grabbing. The basic principle is to move from unintentional movement to intentional. This is achieved by placing the object in contact with the hands and feet where accidental contact with an interesting object affects awareness and targeted

interaction.

Picture 2. What the child learns through staying in the Small Room

The Resonant Panel

The resonant panel is a wooden board raised from the floor approximately 5 cm. It is used for sound feedback because it amplifies the sound component considering the vibrations that occur when an object or child moves. The resonant panel also provides limited play space which also contributes to the early development of spatial relations.

As is the case with the Small Room, objects of interest to the child are placed on the surface of the resonant panel and the child discovers and compares the sound and vibration of the object through independent exploration.

The Position Panel

The position panel is a plate to which objects are attached, that can be attached to the wall (Picture 3) or to the child's table (Picture 4) etc. Objects are, as in the Small Room, attached with elastic rubber which makes it easier to understand the stability of objects.

Picture 3. Position panel attached to the wall (source: Mali dom - Zagreb)

Picture 4. Position panel in the form of a tray (source: Mali dom - Zagreb)

GLOSSARY OF TERMS

Active learning = the active learning educational approach implies a total approach to teaching people with greater and multiple disabilities.

Concept = understanding the content and elements of a particular activity, the idea of the world, mental representation; it helps to learn "why" I'm doing something.

Skill = involves performing a certain activity, learning a sequence of actions and helping to learn "how" to do something.

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LEARNING THROUGH ROUTINES

SUMMARY POINTS

Routines represent a natural, spontaneous opportunity to integrate many skills. They are characterized by stability that creates a safe environment in which learning becomes possible.

The routine should be focused on learning concepts where new information is more easily added through a familiar framework.

For children with visual impairment and additional developmental disabilities, routines are an important teaching strategy. We mentioned earlier the importance of routine-based intervention. Routines provide a systematic approach that is individualized to the child's skills and preferences (1).

Rarely a situation in everyday life does not take place through routines, where the steps take place in a predictable sequence, in the same way and following the rhythm of the child. Through their regularity and familiarity, routines provide additional information that is not spontaneously available to a child with multiple disabilities. Routines are a natural/spontaneous opportunity to integrate many skills. By learning through routines the child learns about the world and learns concepts. Routines develop a sense of beginning, middle and end. They involve an abundance of people, actions, objects, places and arrange them into a meaningful whole. Routines involve natural signals, i.e. each step announces the next which does not require a person to give instructions because the objects themselves, used in the activity, represent a prompt for the step that follows. Routine stability creates a safe environment in which learning becomes possible. During routines, people communicate a lot. In the absence of routines, a child may react negatively out of fear because he/she does not know what to expect or what will happen next.

Routines help anticipate the end of an unwanted activity or recognize the beginning of a desired activity. Routines also help build procedural memory. If we do not provide the child with an organized experience then he/she cannot understand it. If he/she does not understand it, it will be difficult to learn anything from it. When a child has a mental representation of the activity then it becomes easier to recognize the change. He/she becomes more receptive and it's easier to learn about a new component.

When working with families of children with visual impairment and influential difficulties, it is important to learn as much as possible about the child's regular, typical daily routines, because they are becoming an important learning context. Through a careful interview with the parent and/or guardian, we can get information about what the child's daily activities are, who carries them out, in what environment and how the child behaves. The Routine Recording List (see Appendix 2), which is an organized way of obtaining information, can also help us with this. Only when we get a picture of a child's day will we be able to think of ways to further support these natural learning situations, that is, how to encourage targeted skills and learn new concepts through familiar experiences.

In order to use routine as a learning situation, it is important to consider the following (2):

- Naming the routine: it is important to mark the routine and accordingly announce the activity to the child using touch, objects, tactile symbols etc. This helps the child to anticipate what follows.
- Determine a clear start-middle-end: the beginning of a routine can be going to the place where it is performed, showing objects or gestures that indicate activities; the middle represents the steps within the activity and it is necessary to think about how we announce them to the child. The end of the activity can be putting objects back to their place, using gesture for finished activity etc.
- Determine the result of the routine: Think about what the activity results in? Is it some satisfied need, some object that the child wants etc. The result of the routine contributes to motivation and gives a reason why we do something.
- Repeat the routine: In order for a child to learn through routines, it is necessary to ensure a sufficient number of repetitions so that it is necessary to think about how often the routine is repeated. Is it an activity that is repeated daily or infrequently. Of course, the activity that is repeated more often is more effective. Also, the consistency of the routine is important, i.e. that it is performed in different environments in the same way.
- Routine should be focused on learning concepts: Routines should be gradually expanded by including new information in a recognizable framework, for example about other people, objects, environments.
- The goal of the routine should include increasing the independence.

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STRATEGIES FOR STIMULATING FEEDING, EATING AND DRINKING SKILLS

SUMMARY POINTS

Neat growth and development implies an appropriate caloric intake, which is enabled by acquired skills of eating, swallowing and drinking.

Principles of therapeutic feeding - positioning, adjusting the consistency and texture of food, appropriate utensils, non-nutritive preparation for feeding activity and active participation of the child, will enable more efficient feeding and eating.

The growth and development of a child are dynamic and harmonious processes. For normal growth, a sufficient caloric intake of food is required, which implies the acquisition of feeding skills, which is not a simple process. The developmental sequence of feeding ranges from reflex to voluntary activity where in addition to natural maturation and specialization of the functions of anatomical structures, environment plays an important role in stimulating and supporting the natural development curve. However, eating is not just about consuming food. It is a moment for communication between people, transmitting traditional culture and sharing emotions. Participating in a common meal is a human activity of great importance as a way of integrating both into the family and into the wider community.

Monitoring the child's development and nutritional needs, it is crucial in a timely manner, i.e. in a specific or so-called critical period for learning new knowledge and skills to expose the child to new experiences and introduce changes in the feeding process. Prolonged retention at lower levels of acquired skills creates later difficulties of rigid behavior and pronounced problems in accepting new experiences, e.g. switching to spoon feeding, introduction of textured food, acceptance of different flavors etc.

For most children, feeding is a natural process in which the occurrence of developmental milestones takes place in an orderly manner. However, the literature states that up to 25% of children of typical development have some of the feeding problems. In the population of children with developmental disabilities the percentage is significantly higher and ranges around 80% (1). Eating disorders not only interfere with the early development of the child in the physical sense but can also be associated with deficits in cognitive and social-emotional development, i.e. behavioral problems such as anxiety during meals in childhood, adolescence and adulthood.

According to ASHA American Speech and Language Hearing Association (2) these are the signs of eating and chewing disorders, if a child:

- bends his back or clenches when feeding
- is crying or excited while feeding
- falls asleep during a meal
- has difficulties in breastfeeding
- has difficulty breathing while eating and drinking
- refuses to eat and drink
- eats only certain textures such as soft or crunchy foods
- feeding is time consuming
- has difficulty chewing food
- coughs or chokes during meals

- salivates heavily and expels fluids from the nose or mouth
- breaths rough or audible during or after a meal
- spits or often excretes food.

Not all children with feeding difficulties need to have all of these signs. They may have only some of these as well as most, but regardless of this fact they are at increased risk for dehydration and malnutrition, aspiration (passage of food and fluid into the airways), pneumonia and other lung infections and for feeling uncomfortable due to eating problems.

Many children with motor difficulties such as cerebral palsy (3) have problems with oropharyngeal dysphagia, which is especially pronounced with certain food textures. Oral-pharyngeal problems in a child with CP include: difficulty closing the lips, poor tongue function, tongue thrust, excessive bite reflex, tactile hypersensitivity and delayed swallowing.

Feeding difficulties may be caused by difficulties in sensory integration, hypersensitivity or decreased sensitivity to individual stimuli (4). Gustatory stimuli provide information related to taste and texture of food. Difficulties in gustatory processing are manifested as pickiness - eating only some types of food (pureed, chopped, creamy food), difficulty chewing and swallowing. It can lead to a reaction of refusing to brush the teeth and go to the dentist, the child eats extremely cold or hot food, prefers very spicy food and often sucks and chews on inedible things (clothes, fingers, hair etc). Difficulties in tactile processing can also result in pickiness when eating - the child often drinks only water, avoids solid food, chooses only soft or mixed food, refuses to touch his mouth but sucks his own fingers. Difficulty chewing food is also visible - the child keeps his mouth open when the food is already in his mouth and avoids touching the spoon, ignoring saliva and the rest of the food around his mouth. Disorders in the processing of vestibular and proprioceptive stimuli can affect feeding in terms of difficulty sitting still at a table during the feeding activity itself, and rapid fatigue.

THERAPEUTIC FEEDING

Most children with developmental disabilities require a specially tailored approach and adaptation of feeding techniques. Through an individual approach and respecting the child's abilities, we work on encouraging the skill of eating and feeding as independently as possible in order to improve the quality of the child's life. Therapeutic procedures and approaches that encourage safer, more efficient eating, drinking and swallowing with a suitable meal duration are called therapeutic feeding.

In the therapeutic approach to feeding, the emphasis is on:

1. Child-friendly and effective food processing technique (adjusted texture, consistency of quantity, safe swallowing)
2. Optimal positioning appropriate to the child's motor status (safe and stable position)

3. Sensory preparation of the oral-facial area in order to sensitize the area and encourage strength and variability of movement of the jaw, lips, tongue
4. Adjustment of utensils (adapted) and organization of the work surface during meals in order to raise the level of independence
5. Nonviolent feeding, feeding as a positive experience
6. Appropriate communication during the meal (meal announcement, choices, removal of distractions).

As the parent decides on the type of food to offer their child, the child decides what and how much to eat. This results in an important principle of therapeutic feeding, which is to respect the natural feeding biorhythm that supports the feeling of hunger and satiety. This mechanism can easily be lost if the child is forced to eat even after his food needs are met.

It is also necessary to take into account the quantitative needs for food (small children have a need for less food, but more often) and to ensure a relaxed and calm atmosphere during meals (avoid coercion, bribery with other food or toys). It is necessary to remove various distractors from the environment in order for the child to focus on the meal as much as possible. When introducing new flavors, first offer small amounts of new food to be combined with the familiar flavor. This can take more than a dozen times before a child accepts a new food. Expose the child as much as possible to a shared meal situation where his social skills of table manners and imitation of desirable eating habits are learned. It is necessary to provide the child with research and "games" with food, which is necessary to encourage sensory development and later self-feeding skills. When possible, involve the child in the preparation of meals, let him perform simpler tasks such as mixing food, putting in a juicer etc. The meal itself should not last longer than 40 minutes because even in the case of a small amount of eaten food, the child can learn to make up for it at the next meal.

APPLICATION OF SENSORY STRATEGIES

Prior to the feeding activity itself, it is recommended to use sensory strategies that help prepare the whole body for the activity that follows. Heavy blankets and heavy cushions are most often used as an aid in positioning. Vibrations using a massager help to better organize your own body and can help your child tolerate the stimuli that follow.

Oral-facial stimulation and massage

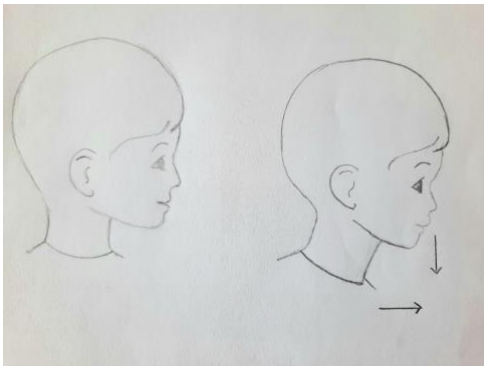
Facial massage promotes awareness and orientation on the face, increases the mobility of the cheeks and upper lips and reduces excessive sensitivity to oral stimuli. It is necessary to perform tactile and proprioception stimulations from the peripheral part of the body gradually towards the face and mouth, especially in children who have a problem in accepting and differentiating sensory stimuli (4). Particularly sensitive area is the facial area, extra and intraoral area, so we gradually approach that

part. If the child is in extreme resistance or crying at that moment, do not continue with the massage because it is important to have a positive stimulation to the activity itself in order to connect it with a positive experience and better raise awareness of the oral-facial region. Massages should be performed at least once a day for about ten minutes, before the meal (see Appendix 8).

POSITIONING

During feeding, the following should be taken into account for optimal positioning:

- to achieve postural alignment and position of the head in the so-called chin-tuck position, depending on the motor abilities (Picture 1)



Picture 1. Chin-tuck position

- provide support for the child's head and neck with an adult forearm or pillow
- stabilize (adhere) the jaws for efficient eating and drinking
- ensure a stable position in the wheelchair or seat to conserve energy for feeding activity
- when encouraging independent or semi-independent feeding, the adult takes a position next to the child's dominant arm (in the case of a higher level of support and adherence to the arm) (Picture 2).

Picture 2. The position of the caregiver in encouraging independent or semi-independent feeding.

Picture 3. The position in the caregiver's lap for the young child (source: Mali dom - Zagreb)

Regarding the techniques we use in therapeutic feeding, we use manipulative eating techniques and techniques to encourage semi-independent and independent feeding.

MANIPULATIVE EATING TECHNIQUES

- stimulation of the swallowing point with moderate pressure in the area of the root of the tongue
- stimulation the movement of closing the upper lip (active collection of food from the spoon) (Picture 4)

Picture 4. Stimulation of the movement of closing the upper lip

- when feeding, the position of the spoon should be on the tongue
- alternating stimulation of the left and right sides of the oral cavity by giving food laterally
- circular pressures in the cheek area to stimulate and raise awareness of chewing movements
- stimulation of the anterior segment, encouraging bites

TECHNIQUES TO ENCOURAGE SEMI-INDEPENDENT AND INDEPENDENT FEEDING

- the technique of guiding the hand under the hand (the hand of an adult is placed under the hand of a child) in order to raise awareness of the patterns of movement from the plate to the mouth (Picture 5)

Picture 5. Physical support - guiding the movement (source: Mali dom - Zagreb)

- physical information (pressure) in the shoulder or elbow area to direct the movement of the spoon to the mouth
- verbal instruction

The following are examples of ADAPTIVE/CUSTOM utensils to encourage independence:

- thickened and curved spoons / forks / knives to encourage and facilitate the independent holding of utensils and to encourage as independent feeding as possible. The surface of the spoon should not be larger than the tongue (5)
- protective straps to hold accessories in the hand
- plates with a raised edge for more efficient gripping of food and prevent spilling of contents
- protective plate borders for more efficient food capture and prevention of spilling contents
- cups with a slit (so-called flexicup). The flexible cup for stimulating the corners of the lips makes it easier to close the lips and allows drinking without stretching the head or neck. Drinking with a straw to encourage initial drinking using a straw
- a glass with a protective lid and an opening (so-called sippycup) for learning to drink from a glass with protection against the possibility of liquid spillage
- a teddy bear with a straw for the initial acquisition of the skill of drinking using a straw
- sensory spoons for better acceptance of textured food, stimulation of the lower lip and stabilization of the tongue with tactile stimuli (z-vibe spoons, specialized spoons).

Picture 6. Adaptive utensils for promoting independence

Within the principle of therapeutic feeding it is sometimes necessary to make an ADJUSTMENT OF FOOD TEXTURE (5). Textures that often cause processing, swallowing and choking problems are rare liquids, foods with crumbs or chunks, multitextured foods (liquids and solid foods such as soups), and foods that are difficult to break down.

Adaptation depends on the child's abilities, acquired chewing and swallowing skills as well as possible health risks in the case of offering food of inappropriate texture (see Appendix 9) and may include the following recommendations:

- quantitatively smaller meals, higher caloric value

For children with more severe feeding difficulties, who get tired faster or where feeding is of a prolonged duration, it is recommended to serve smaller meals but high in calories (e.g. add milk, butter, olive oil etc. to the meal). Caloric values can be enhanced by specialized pharmaceutical preparations with enhanced nutritional values.

- adaptation of food density and texture

It is important to note that soft, homogeneous food without crumbs or pieces is easier to swallow (e.g. creams, vegetable or fruit purees, plain yogurt). Textures that are a combination of liquid and solid foods such as soup with pasta and meat should be avoided. The denser and homogeneous texture of the food is easier for efficient processing, better retention of the bite in the mouth (without leakage of contents) and timely swallowing.

- liquids

Fluid consumption is often a problem for children with difficulty swallowing (dysphagia). It is often necessary to increase their density to facilitate intake. The fluids thus adjusted pass from the mouth to the throat much more slowly, allowing more time to swallow. For this we can use natural thickeners (e.g. cornstarch), instant cereals and medical thickeners. Some examples of liquid density: syrup, smoothie, density like honey or pudding.

- introduction of new textures

When introducing food of a new texture, it is always good to start with a few tablespoons of a familiar texture and then introduce a new one (e.g. transition from puree texture to fork-crushed texture). This allows the child to gradually learn new textures without sudden strain or physical fatigue due to the new experience. Also the child learns to accept the new texture without feeling rushed.

GLOSSARY OF TERMS

Therapeutic feeding = represents therapeutic procedures and approaches that encourage safer, more efficient eating, drinking and swallowing with an appropriate meal duration. The basic principle is feeding as a positive experience.

Chintuck position = a position in which the person holds the chin slightly downwards thus increasing the epiglottic angle and pushing the front wall of the pharynx backwards. This position is useful for achieving safe swallowing because it narrows the entrance to the airways.

Dysphagia = difficulty swallowing, more precisely a condition in which it takes more time and effort for food and fluids to pass from the mouth to the stomach, and in some cases the act of swallowing causes pain or swallowing is disabled.

Aspiration = a condition of inhaling or sucking in food or secretions from the oral cavity or both. Such contents pass through the trachea instead of into the esophagus, which can cause

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PARTNERSHIP AND SUPPORT FOR PARENTS

SUMMARY POINTS

With the birth of a child with developmental disabilities, the family faces a number of changes that lead to increased stress and changes in family dynamics.

The family needs to mobilize all its strenghts in order to be able to function as well as possible, in which, in addition to family resources and capacities, it is focused on the environment and the support of the immediate and wider community.

When creating support for families, it is important to develop a model that encompasses different components and approaches, taking into account the needs of the family as a whole and the needs of all family members.

Parenting affects the development and strong change of adult individuals. The presence of the child in the family changes the behavior and activities of the parents, causes strong positive but also negative feelings. It changes the opinion, feelings and behavior of parents, it changes their image of themselves and the image that the environment has of them. The subjective experience of parenthood is a significant change in an individual's overall identity. It plays an important role in determining the "climate of a child's development" and has a strong influence on his developmental outcomes (1).

Parenting can bring feelings of immense happiness, pride, self-realization, affirmation of identity and integrity, success (2), but also the appearance of fatigue, exertion, stress and sometimes a feeling of captivity, loss of opportunities for self-realization in some other areas (2). Therefore, parental skills play a significant role in responding to parenting demands and efforts to maintain a high level of quality of family relationships (3).

When it comes to the birth of a child with disabilities, the family faces a lot of stress that depends on family's capacities, its resilience and stress coping strategies, personality traits of its members and the adjustment of family roles to the new situation. The dynamics of family life are changing and it is necessary to mobilize forces so that the family can function as well as possible. It is inevitably focused on the environment and the support of the wider community. The literature shows that the first reactions of parents to the realization that their child has a certain developmental difficulty are negative, but this is the initial stage. Parents later accept the new situation and try to help their children (4, 5, 6, 7).

Working with parents of children with disabilities, we have developed a family support model consisting of social services (Early intervention, Assessment and Counseling), psychosocial counseling, psychological counseling and psychotherapy, support groups, education and forums for parents and organized informal gatherings (e.g. summer barbecue in nature near the city lake).

When creating services and support for parents, we follow the principle and model of active cooperation and participation of parents as partners in the process of habilitation of their child. Already during the initial conversation with the social worker and the psychologist, when joining the Early intervention program, a partnership is beginning to form. We explain to the parents directly the ways, methods and processes we will use to develop and nurture a partnership with them, and through the professionally lead conversation try to provide a sense of sincere interest, care, warmth, respect and acceptance.

Specifically, parents are involved as partners in all areas, from the very inclusion in the Early intervention program to the termination of the service, or transition to the other support program

and/or involvement in community life. Examples of active cooperation and partnership can be seen in the following steps:

- assessment of the needs and expectations of the family when joining the program
- assessment of the child with the participation of parents
- involvement of parents in the development of the Individual Education Plan
- carrying out activities in the Day Center and in the child's home in the presence of parents
- consultations, parent meetings, support groups for parents, counseling
- involvement of parents in the process of Personal planning during the transition period.

When creating services and support for parents, it should also be borne in mind that the needs of the family are individually determined and different, and the basic rule is that the most important is the need of the family singled out by the family, not the expert (8). Which specific need should be given priority is revealed through conversation with parents. Through the conversation we give information to parents and find out what are their preoccupations and priorities, as well as the priorities and needs of the family. The partnership with parents is also reflected in the creation and improvement of services, taking into account the perspective of parents and feedback by continuously conducting evaluations through questionnaires at the end of the educational and rehabilitation period. As well as conversations during the termination of the Early intervention service and/or their transition to other programs and inclusion in the life of the community.
Developing partnership with parents and creating a support model that takes into account the priority needs of each individual family is a strong social support that helps families mobilize their strengths and resources in the process of adjusting to the birth of a child with disabilities.
Social support can be conceptualized as a protective factor in caring for parental well-being and can include support from spouse, neighbor, friend, professional, extended family such as grandparents, and formal and informal support groups (9). Social support refers to the perceived care, respect or assistance a person receives from other people or groups (10). Thus Taub et al. (11) emphasize the importance of support from the wider environment, especially in the case of insufficient support from the immediate environment. These are situations where, for example help from support groups is necessary for parents to overcome the challenges of parenthood. Professionals play an important role in providing social support because they influence the length and quality of the process of parental coping with the fact that the child is different from what was imagined (12). Parents have the right and need to continue to fantasize and wish for their child a future that seems promising to them, which should in no way be exclusive but open to all possible outcomes. Empowering parents plays a significant role in this process because it strengthens self-confidence and develops problem-solving skills. Empowerment is only possible if an authentic partnership is established between

parents and professionals. A partnership approach to parents means that parents are involved in decision-making, that their point of view is valued because they know their child the best, while experts provide professional knowledge and only by merging these two expertise the best decisions can be made. Empowered parents will stay in touch with the reality as it exists. They will see the child and understand what he/she wants, needs and can do at a given moment and will be a very concrete support on the child's way of growing up.

Forms of Support in Mali dom - Zagreb

Support Groups

At the first meeting of the newly formed support group, parents fill out a questionnaire with offered topics from the field of parenting that would be covered during one support group cycle and are asked to suggest some topics that they currently need the most information about and would like to know more. In this way, we ensure that topics addressed at the next meetings would be exactly those that parents themselves have singled out as the most important to them. At the first meeting, parents are introduced to the way of working in a group through various experiential activities and exercises, as well as providing time to share experiences and various useful information related to parenting. The time and frequency of the group meetings are also determined according to parents' abilities (for example the group takes place in the afternoon once a month). The support group for parents of children who are preparing to leave our Early intervention program and are involved in the so-called experience group within the Day Center once a week, takes place in parallel while the children are attending the experience group.

Individual psychological counseling

At the first interview with a psychologist when joining the Early intervention program, we inform parents about the possibility of individual psychological counseling and shorter psychotherapy (cognitive-behavioral therapy and acceptance and commitment therapy - ACT) in our institution. We encourage them to use this opportunity whenever they feel the need for it. Parents are encouraged to do the same by key workers who have the best insight into family dynamics given that they go to the family's home once a week to provide professional support. This happens in those situations when key workers notice that the adjustment of parents to the child's disabilities is hard or if they notice some other difficulties (such as communication problems between parents etc.).
Parents who for various reasons are not able to attend support groups, are contacted regularly according to a designed protocol (for example every three or six months) and individual meetings and counseling are arranged in order to monitor family dynamics.

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FAMILY - RELATED ACTIVITIES: PARENTAL WORK AT BLINDENINSTITUT MÜNICH

Cooperation with parents, including the close family environment, is a core task of early intervention. As already mentioned in the section on family orientation, successful early intervention is only possible in a partnership of equals. On the one hand, this involves purely professional counselling of the parents and, on the other hand, emotional support in the sense of solution-oriented counselling (see Poster in Appendix). Our Principles :

- Focus on solutions not on problems
- Empowerment – Reliance on parents' competence to find a solution
- Parents are responsible for their own solutions
- Support for parents in finding solutions
- The professional is both an expert (well-schooled in disabilities, Low-vision principles, therapeutic aids and so on) and a counsellor (is all ears for parents' troubles and needs)

The working group Early Intervention of the Association for Education of the Blind and Visually Impaired counts the following subtasks among them:

- Information about the nature and possible effects of visual impairment and other aspects of disability
- Translation of medical findings
- Detailed explanation of the planned early intervention measures
- Joint transfer of the planned measures into everyday family life
- Parent-child interaction analyses and assistance as well as modifications for everyday family life
- Supportive counselling for personal problems of parents and siblings
- Networking
- Designing inter-family activities (see article)
- Information about suitable pre-school and later school opportunities
- Information about social legal issues and possibilities

Impairment of the sense of sight has complex effects on the overall development of the child, and on all his or her behavioral and perceptual areas. Major difficulties include those in the area of early social interaction development and in social-emotional development. In the case of children with multiple disabilities, the problems of early mother-child interaction are magnified, since not only vision is lost or severely restricted, and thus eye contact, but many other elements as well:

- The children's general readiness to react is lower (quickly exhausted)
- Early sound production as well as facial expressions are limited and often very unclear due to problems with mouth and tongue movements
- The reaction time is increased and it takes a long time to react to the mother
- Limited understanding of routines and announcements (need much more repetition)
- General activity level is low, as muscle tension is reduced

The dialogue between mother and child is therefore less well dubbed.

In addition, many children with multiple disabilities have great difficulties in their adaptation - regulation from the very beginning. Children with multiple disabilities often show excessive crying in fits and starts, which is accompanied by a general high level of irritability. They are quickly overstimulated and difficult to calm down. They show sleep disturbances of all kinds. Children with multiple disabilities often have a shift in their sleep-wake rhythm and eating is also often a big problem (see chapter on eating).

Support for the success of positive parent-child communication is a prerequisite for behavior-based strategies to change crying, eating and sleeping. The demands on the parents' coping skills are very high. At the same time, they themselves often have possibly unresolved traumas caused by the diagnosis. They have great fears for the health, development and future of their child. The time pressure caused by the various doctor's appointments and therapies has major implications for the entire family system. Therefore, it is important for the parents to plan enough time and to continuously reflect on the current daily routine - to have an open ear. Possible pedagogical strategies in the context of early intervention could be e.g.

- Recommend pediatric differential diagnostics, e.g. to exclude reflux disease in case of feeding disorders or pharmacological aids
- Structuring through the introduction of ritualisation in the daily routine
- Structuring through the creation of islands of calm for the children and the search for the conditions that trigger a child's well-being
- showing positive dialogue when the children are awake and attentive (e.g. through video analysis). The parents should be shown which individual possibilities of expression their child has in dialogue and how they already pick up on this and imitate it (turn-taking). This video-based counselling serves to strengthen the perception of parental competences.
- Building confidence in the ability to influence the problems, e.g. through individual situation analyses (What triggers it? What happens? What helps?) and accompaniment in consistently following these interventions into everyday life

- Relieving the mother's burden to mobilise coping skills by sharing the tasks, e.g. with partners, grandparents, relatives, friends or involving mobile care facilities or even inpatient short-term care, and sharing experiences with other affected parents.

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APPENDICES

Appendix 1. REVISED IEP/IFSP GOALS AND OBJECTIVES RATING INSTRUMENT (R-GORI) FOR EARLY CHILDHOOD

Revised IEP/IFSP Goals and Objectives Rating Instrument (R-GORI) for Early Childhood

Functionality	**Instructional Context**
1. Will the skill increase the child's ability to interact with people and objects within the daily environment? • Does the child need to demonstrate the skill in all/most situations? • Is the skill crucial (increases independence) for participation in most daily routines (e.g., playing, dressing, eating, participating in family activities such as shopping eating at restaurants, participating in classroom activities such as snack, centers, circle time), *OR* is it a necessary or precursor component of a skill that is crucial? 2. Will the skill have to be performed by someone else if the child cannot do it? • Is the skill crucial for the completion of most daily routines? • Is the skill considered a precursor, building block, or necessary element to the acquisition of another skill?	5. Can the skill be taught in a way that reflects the manner in which the skill will be used in daily environments? • Can others provide opportunities or teach the skill in common, everyday situations? 6. Can the skill be elicited by the teacher/ parent/therapist/caregiver within the classroom/home activities? • Is the goal/objective written in clear, jargon free language that can be elicited by any member of the team? • Is the skill written in a way that is not confusing, too clinical, or requires specific knowledge that is not readily available to all team members?
Generality	**Measurability**
3. Does the skill represent a general concept or class of responses? • Does the goal represent a generic process? • Does the goal represent a group of related behaviors? • Is the objective a precursor or building block to the goal (i.e., a milestone)? • Is the objective a component or aspect of the goal? 4. Can the skill be generalized across a variety of settings, materials, and/or people? • Can the child use the skill across settings, materials, and/or people? • Can everyday items be used by the child when performing the skill?	7. Can the skill be seen and/or heard? • Can multiple people agree that the same skill has occurred? • Is a specific definition of the skill provided—is it operationally defined? 8. Can the skill be directly counted/measured? • Is the dimension of the skill provided (e.g., frequency, duration, latency, endurance, intensity, accuracy)? • Is the length of time the skill is to be consistently performed indicated (e.g., for 5 days, 2 weeks)? 9. Does the skill contain performance criteria? • Are the conditions or circumstances under which the skill is to be performed/ demonstrated provided (e.g., when given, during, at)? • Is the level of performance stated (e.g., with assistance, independently) or implied in the target behavior (e.g. copies, initiates)?

Adapted from Notari-Syverson, A.R., & Schuster, S. L. (1995) Putting real life skills into IEP/IFSPs for infants and young children. *Teaching Exceptional Children, 27(2),* 29-32.

Appendix 2. THE ROUTINE RECORDING LIST

CHILD'S ACTIVITIES DURING THE DAY

Name of the Child: **Date of completion :**

Date of Birth: **Person:**

Time and Duration of Activity	Activity (name)	Place (Where the activity takes place)	Person (Who carries out the activity)	What does an adult do?	What does a child do?

Appendix 3. SPECIFIC VISUAL BEHAVIORS OF CHILDREN WITH CEREBRAL VISUAL IMPAIRMENT

Behavior	Description of behavior
Color preference	Children can look at only one color or several colors. Some children of two colors prefer to choose the same or are simply faster in visual reactions when presented with the preferred color.
Preference for moving targets	For some children, the visual target needs to be in motion, have reflective features, or the child needs to move in order to see the target. Some children can see better when walking or riding in a car.
Visual latency	Delayed reaction to visual stimuli. Sometimes the latency can be very long and sometimes barely noticeable.
Preference of a particular part of the visual field	The child may show a preference for looking at targets in a particular part of the visual field. The child may have a loss of field of vision and use peripheral vision, so it may appear as if the child is looking through a target.
Difficulties with visual and environmental complexity	The child will find it easier to look at a simple and single object against a simple background and may have difficulty with satiation. They will also be able to see the object if the object is far enough away from other objects.
Staring into the light and pointless staring	In the room, the child stares out the window in the direction of sunlight and/or looks at the ceiling lights. It is also possible for a child to demonstrates pointless staring.
Difficulty looking at the distance	The child can move objects very close to the eyes or approach objects very close. This does not have to happen due to problems with visual acuity but tries to suppress background information. By moving away from the target, more objects enter his field of vision which interferes with his viewing.
Absence of visual reflex or atypical visual reflex	In a child, the blink reflex when being touched above the root of the nose may be absent or slowed down. The blink reflex to a rapidly approaching target may also be absent or slowed.
Difficulty with new visual targets	Some children can only look at familiar targets, while others have a faster reaction or look at familiar targets longer or targets that have qualities similar to known targets than novelties.
Absence or difficulty reaching due to vision	A child cannot reach for a toy and look at it at the same time. So, he will look at the target, take his eyes off it and start reaching out. Sometimes he reaches better when his eyes are closed.

Appendix 4. SYMPTOMATOLOGY OF DYSUNCTION OF ORGANIZATION OF CERTAIN SENSORY SYSTEMS

TACTILE SYSTEM	
EXCESSIVE SENSITIVITY	REDUCED SENSITIVITY
• Excessive reactions to tactile stimuli • Preferences for certain materials and textures • Avoiding “dirty” activities • Pickiness when eating	• Putting objects in mouth • Frequent body touching and clapping • Ignoring saliva and food debris around the mouth

PROPRIOCEPTIVE SYSTEM	
EXCESSIVE SENSITIVITY	REDUCED SENSITIVITY
• Tired easily • Insufficient posture • Hypermobility of joints • Open mouth	• Always on the go • Jumping • Walking on toes

VESTIBULAR SYSTEM	
EXCESSIVE SENSITIVITY	REDUCED SENSITIVITY
• Avoiding rocking • Avoiding climbing and jumping • Difficulty moving up the stairs • Fear of falling	• Looking for intense, long-lasting vestibular stimuli • Rotation • Motor restlessness

Appendix 5. MILESTONES OF PRE-LANGUAGE AND LANGUAGE DEVELOPMENT

Appendix 6. LOGORITHMIC GAMES FOR THE YOUNGEST

Speech-rhythm games are intended for children from birth to 3 years. In addition to providing a small child with comfort and fun, these games also serve as the first rhythmic and musical stimulation, and their polysensory action is very stimulating for speech development. With these games we influence the development of auditory and spatial perception, the development of a sense of tempo and rhythm, we practice producing sounds and pronunciation, speech-motor imitation, awareness of our body.

The games take place in a cordial atmosphere full of jokes and tenderness, in contact between a child and an adult close to the child. These games can be applied to all young children and are especially useful in working with children with underdeveloped speech, as well as with those who have hearing and motor difficulties.

The smaller the child or the greater his difficulties, the movements are slower and gentler, and our voicing of the sounds is more affective. Gradually, the child's active participation and independence increase: with appropriate speech and/or musical stimulation, the child jumps, dances, claps, imitates movements of the hands and the whole body. Since a child with significant visual impairment cannot visually follow and imitate the movements of participants in joint play, it is necessary to initially help guide the movements, e.g. we take the child's arms or legs and slowly perform the movement described in the song or counting song. In case the child is sensitive to touch and does not accept the "forced" guidance of his body parts, it is necessary to start with the so-called macro movements of the whole body. For example, swinging in the lap while imitating the wind blowing, lightly squatting on the knees while imitating the voice of a horse, shifting the weight of the body from one side to the other (in the lap of an adult), imitating the gait of a bear etc.

The songs used in these games are connected with the appropriate rhythmic structure. When imitating the rhythm, we use clapping and tapping, which further emphasizes the spoken words. It is desirable that each game of poems contains at the end some point, some funny, humorous ending, connected with a different sudden movement and affective exclamation. It is interesting that the child will first participate in that part of the song and look forward to it.

Logorithmic games should not be introduced as work activities that must be performed once or more a day. Choose a nice moment when the child is in a good mood and relaxed and spontaneously accepts your game. Only that way will the child cooperate and be open to new experiences and acquire new skills and knowledge. Children most often like songs, body movements and the rhythm that accompanies them, so they gladly participate in such games in which they learn movements, gestures, imitation, anticipation of future movements and understanding the language.

Appendix 7. ENCOURAGING A SYMBOLIC GAME / FUNCTIONAL USE OF THE OBJECT

Through the functional use of objects, we encourage meaningful movement and imitation, which is an important communication skill because it implies focusing on another person and following their actions. Imitation skills also include the acquisition of the skill of focusing on joint play/activity (joint attention), which often needs to be initiated and designed in children with multiple disabilities.
In all these actions we give support to the child and as much as he tolerates, we physically guide him and try to encourage his initiative and communication skills (e.g. choosing the desired item between the two offered, games of alternate Me – then - You, encouraging more-done requests, following a take-give instruction, etc.).
During the game, the child's interests should be followed, and it is not necessary to show and use all the objects at once. This can be too much information for the child which can also result in resistance. If the child shows a greater interest in a certain type of game and meaningful handling, that interest should be followed. Only active and motivated participation of a child encourages better learning. Demonstrate these actions in real-life situations as well to gain more opportunities to learn and focus on the actions of others.
The following is a suggestion of items (toys) that can encourage meaningful handling and that you can store in a special themed box to make them easily accessible.

- car or other vehicle - pushing on the ground, "collision" with another vehicle, pushing into the box-garage
- hat-putting it on or on somebody else, for example mom or teddy bear
- children's mobile phone - putting it at the ear, pressing, activating the sound
- flowers – as we smell it, we put it in a vase
- ball-pushing, throwing, passing, throwing in the basket
- book-scrolling, opening, closing, activating the sound in the sound book
- spoon-mix the imagined liquid in the bowl, also in a real feeding situation
- towel/cloth-wipe face, hair, body
- shoes/socks - putting on, taking off, dressing, undressing oneself or the doll
- plane - hold a plane and make it "fly"
- children's watch, bracelet, necklace - put it on a hand, over the head, yourself or another, put it on a toy
- comb - combing themselves, bears, dolls or mom
- play a musical instrument, e.g. piano, drum, trumpet
- glasses - put it on yourself or another person, dolls etc.
- broom - imitate the movements of sweeping and collecting "garbage", paper

- playing with the doll, teddy bear and related items (comb, pacifier, bottle, shoes, spoon, diaper, blanket etc.) We encourage the imitation of various actions such as combing, covering, feeding etc.

Take a photo of each object so you can create a pairing of object and image. It is possible to work on the receptive dictionary, i.e. recognizing a named object or image. You can also work on choosing from at least two or more options. Images that are not identical to the object can be created, which encourages generalized knowledge (for example the ball may look different; red-yellow, big-small, for the beach or football, but it is still a ball).

Example of a thematic box (source: Mali dom - Zagreb)

Appendix 8. HOW TO PERFORM ORAL-FACIAL MASSAGES

1. Apply rhythmic pressure for children with reduced muscle tone (so-called tapping). It is performed in the area of the temperomandibular joint to the corners of the lips and along the outer surface of the lips.
2. Press the soft part of the cheek away from the bones on both sides of the face (5 times).
3. Push the index finger under the lower lip UPWARDS (to upper lip).
4. With both thumbs simultaneously, make light pulling movements from the tip of the chin toward the corners of the lips.
5. Pressing the point under the chin slightly inwards stimulates the root of the tongue and encourages swallowing (a useful technique also during feeding).
6. Circular movements of the jaw simulate chewing movements (thumb on the chin, index finger on the cheek and middle finger bent under the chin) and gently move the whole jaw first up - down and then in circle as much as the jaw allows.
7. Massage the neck with the palm of the hand with light movements in the direction of swallowing (5 times).
8. Use the brush to tap wide around the lips and then stroke circularly. With a very thin brush tickle the lips along the very outer edge until the child starts to close them together as if something is bothering him.
9. Gradually use massagers for the area around the lips, cheeks, chin and vibrating brushes for the area inside the lips and on the lips themselves. Massage the gums with left and right movements and slowly circular motion as much as the area of the oral cavity allows. This is especially useful in children who show hyposensitivity of the oral-facial area because it increases their experience of touch and pressure.
10. Use toothettes (massage sponges) for external and internal stimulation. For easier stimulation, it is advisable to dip the sponge in a liquid (water or juice). The sponge is passed along the outer edge of the lips and inside the cheeks in a circular motion on both sides. A sponge can be used to simulate a fluid suction pattern or to try new flavors (nutritional stimulation).
11. Stretch the lips from the corners to the midline. It stimulates awareness, mobility and strength. It can be performed with a glove-protected finger or a toothette sponge.

Appendix 9. FOOD TEXTURE AND EATING SKILLS

TEXTURE	DESCRIPTION	EXAMPLE	CHILD CAN:
Pureed and blended table foods, commercial baby food	Food forms a paste or thick liquid; use strainer or blender and blend to a paste, add liquid for desired consistency	Cream of Wheat, pudding, applesauce; blended meats, vegetables and fruits	Suck and swallow; take food from spoon with lips; swallow thickened puree and not gag
Mashed lumpy	Food forms a heavy bolus; food is blended or mashed with a fork; food retains some texture and consistency	Mashed potatoes; mashed bananas and other soft fruits; mashed hard cooked eggs; mashed carrots or squash	Swallow without gagging; close lips while swallowing food; remove food from spoon with lips; up-and-down munching movement
Ground	Food ground in food chopper, not blended; food retains some lumps for chewing foods; should be easy to chew	Crumbled/ground meat; scrambled eggs; cottage cheese; small pieces of toasted bread crusts; crackers broken into small pieces	Begin to chew in rotary pattern
Chopped	Cut with knife into bite-size pieces; no raw hard foods (carrots)	Chopped fruit (soft raw or cooked); chopped meats; chopped cooked vegetables	Do rotary chewing
Regular	Cut up food or leave whole	All foods	Close lips and keep food in mouth; bite through food

Appendix 10. HOW TO PREVENT OR REDUCE THE RISK OF CHOKING ON FOOD

Even with good oral-motor control, food choking can happen to any child. Here are some types of foods to avoid and meal preparation techniques that can prevent choking:

- cook food until it is soft enough for the fork to pass easily through it
- cut food into smaller pieces or thinner slices to make it easier to chew
- cutting food into thinner strips is better than into circular shapes or cubes (e.g. boiled carrots)
- mix and offer juicy (moist) baby food
- remove all bones from meat or fish
- remove skin and seeds from fruit
- avoid nuts and seeds unless they are ground or chopped
- avoid popcorn, grapes.

Appendix 11. EXCERPT FROM: LITTLE HANDBOOK FOR CONTACT WITH SPECIAL CHILDREN (COPYRIGHT BLINDENINSTITUTSSTIFTUNG FRÜHFÖRDERUNG SEHEN)

Parents always have an individual contact with their children. Uncertainties in communication and interaction arise when these children perceive their environment differently than their parents. This handbook aims to support you in your contact and interaction with these special children. It is meant to encourage you and give you ideas on how to shape your interaction.

If your child cannot see:

- Address it and touch it .
- Tell him what you see and do.
- Repeat his sounds and movements.
- Give him plenty of time to perceive and understand you

If your child refuses to be touched:

➔ Talk to him and make noises.

➔ Make sure it can see you.

➔ Give him the opportunity to touch you.

➔ Always act in the same way so that the child knows what is happening.

➔ Give him time to perceive and understand you

If your child cannot hear you:

➔ Make yourself noticed by turning on the light or waving.

➔ Make sure it sees you

➔ Talk to him anyway, use your hands too.

➔ Repeat his movements and sounds

➔ Give him time to perceive and understand you.

If your child can neither see nor hear you:

➔ Make yourself heard by tapping, stamping or blowing.

➔ Touch it and be physically close to it.

➔ Make movements and sounds together.

➔ Repeat his movements and sounds together.

➔ Put your hand under his hand and feel the surroundings together.

➔ Give him time to perceive and understand you.

Appendix 12. Video examples

Please download -

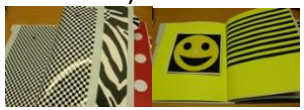
https://get.massive.app/01EX4790S3JVH3B6NQSFJ0EPPS?secret=YGcAVYSnlNPsDFAB

Frühförderung
für blinde und sehbehinderte Kinder

Assessment of Functional Vision

Elementary visual skills of children in the first year of life and children with multiple disabilities

Instruction sheet for carrying out systematic observation

	Skills to be tested	*Material*	*Method*	*Specification of the offers*
1	**Interest in visual stimuli** • **Spontaneous visual interest/visual self-activity** • **Visual attention**	Child's environment (turning towards the window, reacting to lights being switched on and off and to conspicuous structures).  Finger puppets/gloves Disco ball+flashlight "Effect rattle, tinsel stick" Flashlight+Ball Face Scheme  Show cards with real Objects 	Observing the child in a familiar environment Questioning the mother Presentation	Intensity (normal equipment or illuminated) Colour Movement Size Distance acoustic stimuli / verbal accompaniment **Possible reactions/observation criteria** Change of breathing rhythm in activity level, turning towards, away from, louder ,fixation, pursuit

	Skills to be tested	*Material*	*Method*	*Specification of the offers*
2	**Seeing in a social context** • **General interest in faces** • **Eye contact** • **Scans face visually** • **Exchange of views between faces** • **Perceives different facial expressions** • **Recognises faces**	Face of the mum / examiner Photos Face schemes Slides (real images and facial diagrams)  Face of the mum/examiner at the same time Or: two different photos	Presentation: bending over the child in an adequate manner and varying facial expressions, e.g. pursing the lips, sticking out the tongue, without and with speech and voice variation.	Under normal lighting conditions and without make-up Illuminated and "prepared": e.g. made-up face, clown nose, hair bow, glasses, half mask **Possible reactions/observation criteria** Emotional reactions of the child Fix Turning reactions Imitation
3	**Visual interest in own body (feet, little hands, clothes)**	The child itself, in normal clothes 	Observing the child under everyday conditions and questioning the mother Observing the child with "prepared" clothes or utensils: Eye-catching stickers on clothing, special socks, hand and arm bands + illumination	**Possible reactions/observation criteria** Shows spontaneous visual interest in own body parts Shows interest under the special conditions

	Skills to be tested	*Material*	*Method*	*Specification of the offers*
4	**Perceiving objects** • **Viewing) the objects** • **Fixing and tracking** • **Perception of detail** • **Object permanence** • **Recognition** • **Change of view between two objects**	 Doll , normal and contrast, plush toys  Rattle - Gripper Car - Balls Vials (domestic fund)	Presentation of the objects first static, then moving Highlight details by pointing or illuminating Simultaneous presentation of known and unknown object All objects are also presented illuminated, if required	Intensity (normal equipment or illuminated) Colour Movement Size Distance acoustic stimuli / verbal accompaniment **Possible reactions/observation criteria** Look at, follow, fix, try to obtain object Change of gaze and prolonged looking at the familiar object, expression of pleasure Different reactions depending on the "preparation" of the objects
5	**Grasp development/eye-hand coordination**	Material as above	Adequate presentation	**Possible reactions/observation criteria** Spontaneous reaching for what is seen Repetitions Precision of the gripping movement
6	**Seeing for orientation**	Different premises -changing table -Kitchen -Play corner -Bathroom etc.	Carry the child in a well-supported position through the different rooms or place the child in the appropriate places and wait for reactions.	**Possible reactions/observation criteria** Looking around Expression of joy, of fear, of "recognition

	Skills to be tested	*Material*	*Method*	*Specification of the offers*
			Illuminate various points in the room (table, corner, cupboard, etc.) with spotlights.	Turning towards the window ,other light sources or the illuminated objects
7	**Reactions in everyday situations**	e.g. 	Observation in specific situations, such as feeding Interviewing the mother Social games -Hide and seek (e.g. Lilly)	Child looks at bottle, spoon and/or reacts by sounds, gestures, smiles Child looks after hidden object Laughs when face reappears Reacts through imitation or gestures, facial expressions
8	**Special observations**			

This scheme is intended to facilitate targeted observation. The materials and presentation methods are defined to ensure comparability and repetition and meet criteria specific to the visually impaired.
In the evaluation, both simple registrations (existing - non-existing - in rudiments) and more detailed descriptions are provided.

This should also be taken into account:

External variables

- Normal lighting / under the dialite
- Distance
- Size of the objects

Child-related variables

+ Motivation
+ Speed/drive
+ Concentration/Attention/Endurance

Cooperation with parents in the frame of early intervention for visually impaired, blind and multiply disabled and partially sighted children Blindeninstitut in Munich

Theory and Practice

1. How the cooperation between professionals and parents has been developed: an overview

Concept of	Layman	Co – therapist	Co – operation /autonomy
Period	**Beginnings of the professional cooperation with parents (60s)**	**Establishment of early intervention (70s)**	**Change of paradigm (90s)**
Attitude	The Professional is the ultimative authority	Focused on deficiency and functions Parents are regarded to be incompetent	Focused on resources of the parents Parents and therapist have equal rights Acceptance of parents to be competent
Therapist	He is the expert He defines therapy and appropriate methods	He instructs parents He controls, verifies and assesses what parents do with their children	He is at the same level as parents are He has the essential know how The most important criteria for how to perform early intervention is how the child feels himself and how he reacts He guides and inspires parents
Parents	Parents do what the professionals tell them to do They depend on the therapists Their experiences with their child are not at all respected by the professionals	Parents are Co-therapists They will be educated by the professionals (they show them the ropes)	Parents do have the essential competencies They are responsible for their children and what to do with them Focal points of early intervention will be discussed, planned and executed together

2. The guidelines of each counselling

The "three columns"of the councelling according to the concept of Rogers

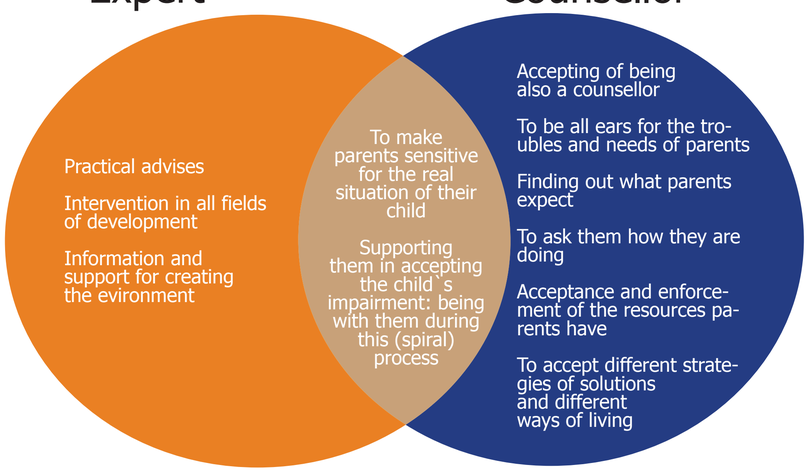
- Acceptance
- Empathy
- Congruence

Principles of solution focused brief therapy

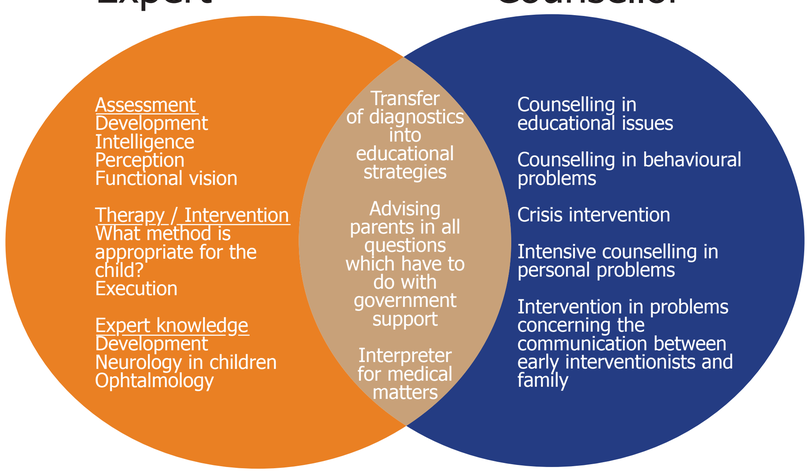
- Focus on solution not on problems
- Empowerment – Reliance on parents' competence to find a solution
- Parents are responsible for their own solutions
- Support for parents in finding solutions
- The professional has two roles: he is both an expert (well schooled in disabilities, Low-vision principles, therapeutic aids and so on) and a counsellor (is all ears for parents' troubles and needs)

3. Early intervention staff in the Department of Early Intervention in Munich and their main tasks concerning the cooperation with parents

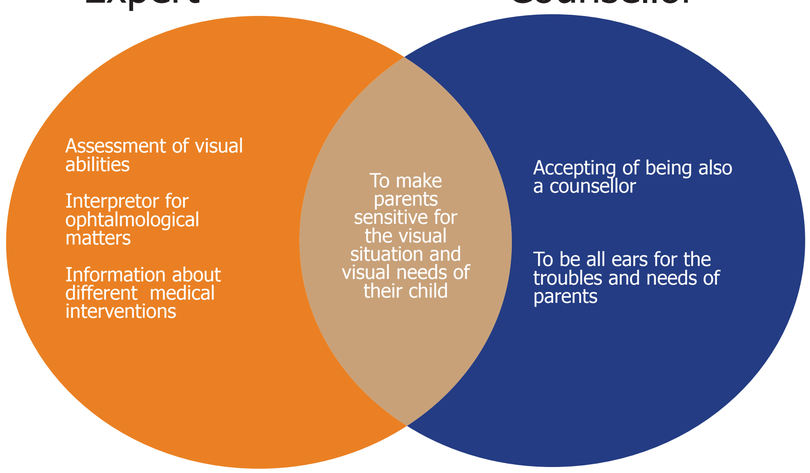
Early Interventionist



Psychologist



Orthoptist



The challenge is to switch these roles in time !