My child has CVI

Handbook for parents of a young child with CVI

BARTIMEUS SERIES

Bartiméus wants to record and share knowledge and experience about the capabilities of people with visual impairment. The Bartiméus series is one of the ways they do this.

Colophon

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Foreword

In recent years, various books have been published in the Bartiméus series about the development of young children with visual impairment. These books provide parents with information and practical advice. A book for parents of young children with cerebral visual impairment (CVI) was not yet available.

The decision to write a book for these parents arose from practice. It appeared that there was a need for a practical handbook that responded to their questions so that they could better understand their child and guide their child's development effectively.

So, in summer 2016, we began to record our knowledge and experiences.

We hope that this book will give parents greater insight into CVI and tools for guiding their child as it grows up.

We would like to thank Carolien Bakker, Florine Pilon, Dorien Pronk and Martine Schepers for the contributions they made by critically reading the text of this book and thinking along with us. Many thanks also to the parents who have made photos of their children available for use in this book.

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Introduction

This book concerns cerebral visual impairment (CVI) in children with a developmental age between zero and around four years. Our starting point is children with no additional impairments.

Through play, young children learn to explore and trust their surroundings. They become aware of the world around them through their senses. This is no different for children with CVI. Due to their vision problems, there can be a difference in the way they experience the world around them and how they learn.

We have worked with children with CVI for many years, building up knowledge of and experience in how to deal with these children in daily life. We would like to share this knowledge with the parents of children with CVI.

This book isn't intended to tell you how to parent your child. Instead, we want to clarify all the things you need to pay attention to and take into consideration when dealing with your child. If you have a good understanding of your child's behaviour, you will be able to help him better in his development. Not everything should and can be adapted immediately to your child's needs, and not everything needs to be adjusted. A lot of things will go just fine by themselves. Find out what suits your child and helps him the best. This can differ from child to child.

In the first chapter, we'll talk about what CVI is, and what consequences it has for vision and for processing what you see. Subsequent chapters contain practical information about how to deal with your child in daily life. At the back of the book, we've included a glossary and a list of books about CVI in children, if you'd like to explore this subject further.

This book is intended as a reference work to pick up if something isn't working well, or if you don't know how to handle a particular situation. You can read the chapters separately from each other. This is why there is a degree of overlap between the different chapters. We hope that this book will give parents greater insight into CVI through which they can better understand their child and help him in his development.

1 CVI? What does this mean?

Tobias is three years old. His parents are wondering whether he can see everything well. The child health clinic confirms that his vision is sufficient for his age. Nevertheless, his parents notice that he often cannot find his favourite police car on his play mat. When his two brothers come home from school and want to play with the cars with him, he often goes to play alone in a corner.

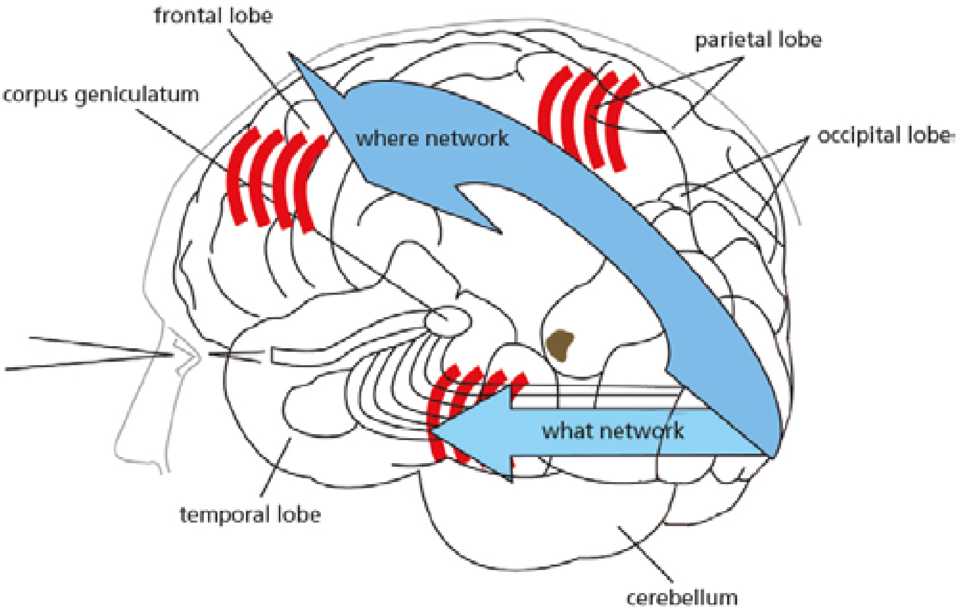
Babies develop at a rapid pace in the first years of their lives, growing from tiny dependent beings into active school children who become increasingly independent. Simply by watching, a child absorbs information all day long and learns about the world around him.
However, there are also children who are blind or partially sighted. The causes of visual impairment and blindness can vary. They can be due to problems with the eye itself, such as the optic nerve or retina. Brain damage can also be a cause, and this is referred to as a cerebral visual disorder (cerebral = brain, visual = involved with sight).

1.1 How does vision work?

Vision involves both your eyes and your brain. Not only do you need eyes that work well, you also need the information processing capability of your brain. A large part of the brain is involved in processing what we see and giving it meaning. All of the visual information that comes in through our eyes is sent to different areas in our brain. Another term for these brain areas is networks. These areas are important for the processing of visual information. They are used to understand and give meaning to what we see and how we should respond. These visual networks act together with each other and with other brain areas at the same time. We can distinguish between two separate visual networks: the what and who network, and the where and how network.

What and who network
Certain parts of your brain are important for recognising and understanding shapes, objects and images. These are also involved in the recognition of faces and facial expressions. This is called the *what and who network*, or the ventral network.
The so-called visual memory is built up in the brain from an early age. This is an important condition for being able to recognise and understand what you see. Visual memory is a sort of visual library that makes it possible to recognise objects and images that look a little different than usual. An example is cups, which come in a variety of colours and shapes and with different kinds of handles, but are still all recognised as cups.

This network also enables you to recognise familiar objects from a different angle, such as a chair that's fallen over, but that you still recognise as a chair even when it's lying on its side.
Another sort of visual library is also built up in the brain, consisting of orientation points and landmarks. You use this to orient yourself in and around your house, and to find your way around in your environment. This brain area is also important for finding out where something is. This is known as the visuospatial memory.



Where and how network

There is a second important visual network in the brain. The where and how network – also called the dorsal network – works in conjunction with the what and who network. This dorsal network plays an important role in:

- the ability to direct, maintain and shift visual attention. This area becomes active during visual scanning of the environment, both close by and further away;
- the ability to distinguish objects, images or people in a busy environment or situation (for example, if there is a lot to see around you or a lot going on around you);
- the processing of information from different senses at the same time;

- seeing moving objects, people and images;
- actions and activities that call on vision and the fine motor skills, such as inserting shapes, sliding rings onto a tower and taking a cookie out of a tin;
- carrying out constructive activities such as building and doing puzzles, for which spatial awareness is needed.

1.2 What is CVI?

In books about the development of partially sighted and blind children, you often encounter the concept of visual impairment. This is a collective term for various degrees of impairment to vision. The causes for this can be in the eye itself, or could be due to brain damage or a developmental disorder in the brain. In the latter instance, this is referred to as a *cerebral visual disorder* (cerebral = brain, visual = involved with sight). We use the international abbreviation CVI (Cerebral Visual Impairment) for this. CVI entails problems with visual processing.

The term CVI in itself says nothing about what the specific visual problems are. It also indicates nothing about the consequences of this for the development of the child or his daily functioning. It only indicates the source of the vision problems.

CVI does not always involve an eye disorder. It may be that children have a fairly normal visual acuity with a normal visual field. However, some children do have decreased visual acuity, which makes it harder for them to see details. The visual field may also be restricted, in which case children will experience greater difficulty in getting an overview of the space they are in, or moving in that space. Eye movement disorders may also occur with CVI, leading to difficulty in directing eye movements.

CVI can have a variety of causes and may arise before, during or after birth.

- Possible causes before birth include a developmental disorder of the brain, a syndrome, or cerebral haemorrhage or infarction.
- Possible causes at birth include complications during childbirth and severe oxygen deficiency. Children who are born extremely prematurely are at risk

of brain damage, which can influence the development and processing of vision.
- Possible causes after birth can include meningitis, cerebral haemorrhage or infarction, a brain tumour or an accident in which the brain is severely damaged.

A special group of children with CVI are those with cerebral palsy. This is a condition in which children have a movement disorder due to brain damage before the age of one year. These children are known to be at increased risk of CVI.

As can be seen from the above, children with CVI are almost always subject to a medically complex history.
Often, the brain damage leads to not only difficulties with vision and processing of visual information, but also to problems in other developmental areas. For example, there may be a permanent delay in the areas of movement and fine motor skills, and the area of intellectual development. Some children have epilepsy.

1.3 What are the visual difficulties associated with CVI?

There is no one standard child with CVI. Problems with vision and visual processing are not the same for all children with CVI. For this reason, we have provided a number of examples below of visual problems that children with CVI might experience. Not all problems manifest simultaneously; this differs per child and per situation.

Visual acuity, visual field, eye movements
Some children with CVI have fairly good visual acuity and a good visual field. Other children have lower visual acuity and/or a smaller visual field. This can be an extra impediment to the processing and understanding of visual information. A limited visual field can make it difficult to get an overview when moving about in a space and while playing. Eye movement problems can also be

associated with CVI. This makes it harder for a child to focus and stay focused on a particular image.

Sometimes seeing goes well and sometimes it doesn't

Children with CVI are not always able to look at something in a focused and attentive way. They can see better at some times than at others. This may vary from day to day and even from hour to hour, and may be related to tiredness, illness or a busy or unfamiliar environment or situation.

Short visual attention

Often, and particularly in young children with CVI, visual attention is short, fleeting and less focused. Visual attention is important for properly recording and processing what you see. This is necessary for understanding what you see and acting accordingly. Some children appear to make more use of their hearing and sense of touch than to actively look at things. Other children look away when there is a great deal of visual information, for example if they are being read to from a picture book containing many – often busy – images.

Needing more time

Children with CVI often need more time to distinguish and see things. Looking at things is not always self-evident and it takes effort to focus on something for longer and keep this up. For example, a child may find it difficult to locate a toy he has noticed if his attention is momentarily drawn to something else in his field of view. It can also be difficult for him to find the toy if there are a lot of other objects around it.
A child with CVI may also find it difficult to locate people important to him in a busy environment, such as at a birthday party or in a schoolyard full of people.

Difficulties with visual recognition

There are children who find it difficult to recognise shapes, objects, people, facial expressions or images/pictures.

Eye-hand coordination and visuospatial action

Skills that call on eye-hand coordination and visuospatial action can be difficult for children with CVI. This might include activities such as putting a fork or toothpick into a piece of fruit, placing a ring onto a ring tower, or putting a coin into a money box. Learning to build things, do puzzles and draw are often less self-evident.

Seeing motion and estimating distance
There are children who find it difficult to follow movement and estimate distances. Games on the tablet or computer can be tricky because of the rapidly moving images. It can also be difficult for these children to see and follow objects and people moving around a room or outside, such as a moving ball, a running child, a cyclist or a car. It can also be harder for them to estimate distances, such as how far away from them a car is.

Movement in space, estimating depth and spatial orientation
When your child is crawling or walking, you may notice that he hesitates at thresholds or where the colours or shadows underfoot are different. It may look as if he is unable to discern whether there is a difference in height. A somewhat older child might be fearful about learning to use stairs and may prefer to go down the stairs sitting instead of walking.
Later on in his development, you may notice that it takes longer for him to orient himself in a new environment, such as the camping ground while on holidays or at his brother or sister's school.

1.4 How do you know whether CVI is the issue?

Check-ups at the child health clinic can already reveal indications that your child has difficulty seeing. You will then receive a referral to an ophthalmologist. The ophthalmologist will test your child's visual acuity and visual field, and will check whether there are any abnormalities in his eyes. He will also determine whether your child needs glasses. If the ophthalmologist suspects visual processing problems, he will refer you to a specialist centre for people with visual impairment. In the Netherlands, this will be an institution such as Bartiméus and Visio. These centres can do specialized diagnostic assessment to confirm or exclude CVI.

Children can also be referred by a child rehabilitation doctor, paediatrician or child neurologist. These children are often subjected to testing using a CT scan or MRI. These tests will reveal abnormalities or damage in the brain, and this information can help to establish problems in visual processing. However, brain damage is not always demonstrable with a CT scan or MRI.

At the expertise centre for people with visual impairment a child will get a broad diagnostic assessment by a multidisciplinary paediatric team specialized in CVI. This team consists of various experts including an ophthalmologist, orthoptist and a psychologist. The team will use various tests and observations and a history taking with the parents, to establish the visual functions of the child. This will also determine the extent to which your child experiences difficulties in seeing, and what consequences this may have for his development and for his ability to carry out all kinds of daily activities.

If CVI is confirmed (or strongly suspected), you will receive further information and explanation. If necessary, guidance will be recommended to help decrease your child's problems with seeing. This guidance might consist of advice on how to deal with and approach your child, and how you can support him to develop as well as possible.
It's often difficult to be certain whether CVI is the problem before the age of five or six. In this case, a work hypothesis of CVI will be suggested. Once your child is a little older, follow-up tests will be conducted to evaluate his development with respect to vision and visual processing. It is generally easier to establish the diagnosis at this point.

1.5 CVI during development

When a child is diagnosed with CVI, this doesn't necessarily mean that the visual problems will always remain the same. CVI is not a static diagnosis. The brain of young children is still developing, and their visual functioning sometimes improves during development. This can happen through the growth and development of the brain, and by the experiences that the child has. In addition, adjustments to the child's surroundings and strengthening his compensation capabilities will enable him to get a better grip on the world around him. It is not possible to predict whether and to what extent visual function might improve.

2 Interaction and approach

Two-year-old Anna has just picked out a book and goes straight to the sofa to read it with her father. He asks if Anna can point out the picture of the cat. Anna peers at the page, her face very close to the book.

As mentioned in the previous chapter, CVI is an umbrella diagnosis, only indicating where the visual impairment problem is located, namely in the brain. This doesn't say anything about the specific problems a child might encounter in seeing and in processing what he sees. In general, we see that children with CVI often experience greater difficulty in understanding the world around them than children without visual impairment. This is because they lack important visual information and have difficulty interpreting and understanding what they see.

By being aware of your child's visual impairment in your daily interactions and your approach, you can help him to feel safe and to get a better grip on his environment.

Although there are very diverse differences between the sight and visual abilities of children with CVI, there are still a number of general points you can take into account as parents, to facilitate your child's seeing.

2.1 General points of attention

Looking closely and carefully is not usually a matter of course for children with CVI. It often takes them more time and effort to do so. Furthermore, they don't always see clearly or have sharp vision, and therefore miss details. Listed below are a number of things you can take into account in your approach to and dealing with your child.

Light and lighting

One of the most important conditions for seeing is light. It is self-evident that different lighting requirements apply for different visual problems. Some children may have difficulty with a lot of light because they are only able to bear low light conditions. By contrast, others may require more light. In general, you can bear the following in mind:

- Ensure good basic lighting. This means that the surroundings should be illuminated evenly, and that there is sufficient and uniform illumination in all places for your child. This might include the living room, the staircase and the toilets. Transitions from light to dark and vice versa can be experienced as unpleasant. Sunlight and shadows on the table or floor can make it more difficult to see and recognise what is there. A good sunshade is useful in this instance.

- Preferably avoid situations in which your child looks directly at light sources, such as lamps and spotlights. This might occur when your child is lying in his playpen or while you’re changing him on the changing table. The sun is also dazzling, so you can extend the sunshade to protect him from that.
- Daylight coming from the side is most pleasant for a toddler or child sitting at the table or on the ground. If the daylight comes from behind him, he will be playing in his own shadow, and if it comes from in front of him, it may dazzle him.
- Task lighting is well suited to precise activities at the table, such as stringing beads, doing puzzles or drawing. This might be in the form of a standard lamp that shines on the table. When using this kind of lighting, make sure your child is not looking directly into the light source, and that the lamp is positioned in such a way that he is not working in his own shadow.
- Try to avoid glare, for example when the sun is shining on a reflective table surface. Laminated photos and bright white surfaces can also reflect light. Some children may be fascinated by this, but are then distracted from looking at the image.
- Adjustment to changes in lighting conditions can be slower and more difficult for children with CVI. Examples include the transition from a well-lit space to a dark corridor, or when you go from inside to outside a building.
- Some children like wearing a cap or hat outdoors in order to reduce visual stimuli and hold the bright sunlight at bay.

Use all of the senses

For children with CVI, vision is not always the easiest sense to use.
One condition for focusing and sustaining visual attention is that there is as little distraction in the environment as possible. This might include background noises such as the TV, radio or a ticking clock. An open bookshelf with photo frames or walls hung with paintings can also be distracting. A child with CVI often has difficulty using multiple senses simultaneously, so a calm, tidy environment will help him to focus his visual attention.
If your child has difficulty seeing details, then decreasing the viewing distance will help. This will relatively magnify the image or picture so that your child can more easily see the small elements in it. This also helps children who have difficulty processing a lot of visual information at once, by reducing the amount of visual information.
Looking at something carefully takes a lot of effort. For this reason, it's a good idea to alternate relaxation with concentration where vision is concerned.

It's also important for children with CVI to learn to employ their other senses to compensate for what their vision lacks.

For example:

- Hearing: Describe as much as possible of what is happening. Talk about the material that your child receives in his hands. Make a noise with the material you are offering by, for example, putting it down on the table audibly.
  Draw your child's attention to the sounds around him.
- Touch: Encourage your child to explore materials by touch. For example, you could announce that a mouthful of food is coming his way by briefly touching his lips before the food goes into his mouth.
  With touch, you can also enable your child to experience a whole action from start to finish. This will give him insight into the process of the skill to be learned. You can help your child to experience an action by sitting behind him and putting your hands over his hands, and then directing his actions. For example, you can put differently shaped blocks into a shape sorting box together, bring a spoon to his mouth together, and roll a ball together. You carry out the whole movement together. Remember to tell your child first that you're going to put your hands over his. Once your child can control his

movements better, you can direct his actions by his wrists and then later by his elbows.

- Smell: Some materials and/or spaces are recognisable by their odour. Encourage your child to use his sense of smell, for example by smelling a pear or apple, or draw his attention to the smell of the swimming pool.

So, give your child as much information as possible, let him smell and touch things with his hands, and tell him what he can expect. Is it warm or cold? Is the material smooth or rough? Most children have difficulty using more than one sense at a time or doing two things at once, such as looking at a picture and listening to what's being said, or riding a bike and looking to see where you're going. By automatising actions and movements such as crawling, cycling and walking, you make it easier to combine these with looking. When teaching your child with CVI a new skill, it's best if you have him do just one thing at a time. If your baby is learning how to roll towards a toy, don't sing him a song while he's doing this. If your toddler is learning how to skewer or scoop up his food, preferably don't explain to him what he's doing or what he's eating. You are better off doing this before he tries out the action.

Good sitting position

Make sure that your child can sit stably, without slumping. This will help him to keep his head upright, which will in turn aid his attention and concentration while he is looking at something.

Give him time

The situation, environment and materials are much less clear when you can't see well or have difficulty processing what you see. Your child will therefore need more time and his other senses in order to recognise and explore everything. With a single glance, a person without visual impairment can gather and link information and give it meaning. A child with CVI may only recognise an object once he has also touched and smelt it.

Colours and contrast

A large contrast between colours is easier to see, such as black and white or blue and yellow. This makes it easier to distinguish objects from their

background, such as a light coloured cup on a dark surface. Bright colours are easier to perceive in this respect than pastel shades.
Plain surfaces are more pleasant than surfaces with many small details in all kinds of colours.

Structure in place, time and person

Children with CVI can be helped a great deal by having a fixed layout in their living space, a fixed timetable, and also a fixed, clear place for their things. This makes their daily activities predictable. Repetition, use of the same objects, and routines make things recognisable for them, and therefore ensures a feeling of trust and security.
If you work with materials, you can provide clarity by putting the materials in containers.

3 Communication

Iris is sitting in the high chair at the table, eating a biscuit. Each time her mother talks to her, Iris turns her face away from her. Her mother thinks Iris doesn’t want contact with her and feels sad.

Children and adults need mutual contact. They want to communicate and make contact with each other and their peers. This can be done in various ways. When you look around you, you see children and parents smiling, looking and talking at each other, hugging or wrestling with each other, looking angrily at each other, or expressing themselves in other ways.

3.1 Attachment

The formation of an emotional bond and the first communication with your child actually begins right after birth. This is no different if your child has CVI. By responding as appropriately as possible to your baby's signals, you will foster the formation of an emotional bond between you.
In the first weeks of his life, crying will be the most important way for your baby to communicate, after which he will begin to make his first sounds. Responding adequately to crying is essential in order to give your baby a basic sense of security and to allow him to become attached to you. A secure attachment provides your child with the foundation to develop his self-confidence and form emotional bonds with others. To promote secure attachment, you should touch your baby a lot, carry him, hug him, take him onto your lap and talk to him. This will give him a feeling of security and will help him to recognise you and distinguish you from others. Be aware that he cannot see you clearly, and that he mainly recognises you by your voice, the way you pick him up, and your scent. It's therefore best for your baby if you don't change the scent of the perfume or aftershave that you use.
Your baby will start to smile upon hearing your voice or smelling your scent, and after a while will also react negatively to strangers. This so-called shyness is a normal phase in the development of all children. It means that your child is becoming attached to you. Forming a good attachment is important for all children, but especially for a child with CVI. Because his environment is unpredictable, it's essential for your child to have trusted people to fall back on.

If your child has CVI, he may encounter many unpredictable situations. For example, someone might suddenly appear next to him, or something might turn out to be not quite what he expected. Facial expressions may not match the tone in which someone is speaking, or may not be recognised or understood. In short, your child may have more difficulty in understanding and maintaining an overview of the world around him. For the people around your toddler or young child, it can often be difficult to understand his changing visual behaviour. He may look and respond better on some days than on others. If he's feeling unwell, or if there are more stimuli around him, it may be harder for him to look at things in a focused way than when he is well rested. As a result, the expectations from the environment may not reflect how your child is functioning at a particular moment.

Positive experiences in dealing with others and discovering the world around him will give him self-confidence and enjoyment in his own abilities. This will greatly benefit the contact between you, your child and others.

3.2 Eye contact

A newborn baby is still very dependent on his parents and wants to be close to them. This closeness is important for building up good contact and forming a strong attachment with each other. In the first months as a parent, you start making contact with your child. Later on, the initiative will of course also come from your child.
All newborn babies see very little. However, eyesight develops rapidly in most children. They are able to make eye contact with their parents within a couple of weeks. If your child has CVI, you may find it harder to make eye contact with him because he finds it difficult to focus on your eyes. The moments in which your child looks at you may also be short because he is unable to focus his eyes on one thing for very long yet.
Another reason for difficulty in making eye contact can be that your child finds it hard to use multiple senses at the same time. Children with CVI often find it difficult to look and listen at the same time. If you talk to him, he may turn his ear towards the sound of your voice and therefore no longer look at your face. Therefore, in order to form a good bond it's very important to get to know and recognise your baby's behaviour. Aside from eye contact, touch and language are also important ways of interacting with each other.

3.2.1 What else can you do?

To stimulate eye contact with your child, try the following things:

- Make sure your child doesn't have to look into the light by making sure that the light falls on your face instead.
- Ensure calm surroundings. Distracting sounds such as a radio or TV can make it harder for your child to focus on looking at you, because he has to concentrate on two things at the same time;
- A good starting position will help your child to look actively. Some children can direct their gaze better when they are lying down than when they are sitting up. It's advisable to use a children's chair in which your child can sit well supported with his feet on a footrest;
- It can help to choose a plain wall as a background, so that your face is easy to distinguish from the background. Look at your own choice of clothing too. When you wear clothing with lots of patterns and details, you yourself

act as a busy background for your child. You can remedy this by wearing plainer clothes;

- Make sure that the viewing distance is short so that your child can see your face well. You could also make parts of your face more pronounced by using lipstick or eye makeup;
- Give your child enough time to focus his gaze on you. Your child may have difficulty combining looking and listening, and will only make eye contact with you once you have stopped talking or singing. Give him the opportunity to do so;
- Be aware that it will be easier for your child to make eye contact with you if he is rested and feeling well.

3.3 Recognising faces and emotions

Children recognise each other, parents and other adults by their face, body shape and posture, clothing, voice and scent.
There is an area in our brain (see Chapter 1.1) that is responsible for recognising faces and facial expressions. This area may be damaged in children with CVI. These children therefore have a great deal of difficulty recognising people. They need to know the specific features of a face in order to be able to recognise it. If Mummy has short hair and brown eyes, and Grandpa is bald and wears glasses, then it's easy enough to tell them apart. But if the neighbour also has short hair and brown eyes, how can we tell which one is Mummy?
It can also cause problems for recognising facial expressions and interpreting non-verbal behaviour. It's hard for a child to attach meaning to facial expressions that also communicate feelings. Facial expressions and gestures shown by other children may also escape your child, such as a friend who smiles invitingly as an invitation to play, or a parent who gives an encouraging look. If your child doesn't understand this, it's easy for misunderstandings with others to occur. This has consequences for social interaction with others and the way the contact proceeds.

Children who have difficulty with facial recognition and facial expressions need more time to recognise someone. They need extra help in learning about and understanding the body language and feelings of others.
Facial recognition appears to be difficult to learn and practice, but fortunately we also know who other people are through the information provided by the other senses. You can teach your child to pay attention to other characteristics such as voice, clothing, jewellery, body movements or scent. Ask those close to you, such as your child's grandparents or the neighbour or babysitter, to say goodbye to him or use his name, so he can hear them and learn to recognise their voices. You can teach a somewhat older child to take the initiative himself by talking to someone, even if it's just to say "hello". The other person will probably say something back, which will give your child information about who he is talking to, and will establish contact straight away.

3.3.1 What else can you do?

- Together with your child, you can find out which facial expressions he recognises and from what distance. Articulate the associated emotions too. Describe what other children or adults do, how they express their feelings and how they look when they do so: "Tim is angry because you've taken his car away from him. He is crossing his arms and frowning, which you can see by the way his eyebrows go down."

- Discuss simple emotions; this is already possible with your toddler. When are you afraid and what do you do when you are? What happens with someone's mouth and eyes and posture? Can you hear that someone is angry from his voice? What does someone look like when he laughs?

  You can also make your own behaviour clearer by telling your child what emotion you are feeling: "Look, I'm smiling now – I'm happy because I'm proud of what you've done." Another possibility is playfully imitating your child's facial expression and describing what you're doing. You can ask your toddler or small child what he looks like when he is happy, angry or sad. You could also use a mirror together to see what these emotions look like.
- Photos, books and apps can be helpful tools when exploring faces and facial expressions. Together with your child, study various photos of familiar people from his surroundings and pay attention to facial features that stand out, such as glasses, thick eyebrows, hair style or a beard. Be aware that your child will need time to look at these. If you talk about what's in the photos beforehand, you can give your child information that he may be able to recognise afterwards.

  Bookshops and libraries will stock suitable children's books with stories that describe and depict various emotions. Illustrations or photos in clear colours, with a plain, calm background, not too many details and a good colour contrast with the background are the best with respect to visibility. Tell your child what there is to see and where to look. You can also encourage him to point things out with his finger, or do this yourself. By covering part of the page with a sheet of paper, you can remove unnecessary information and help your child to concentrate better on what there is to see.

3.4 Language development

At first glance, children with CVI may seem to see everything. That is partly true. A child with CVI does see a great deal, but he may miss details or objects at a greater distance. This may be because he has low visual acuity, or tends towards fleeting glances, or is less visually curious, or has difficulty focusing visually on something for longer periods. In addition, a child with CVI is less able to get a rapid overview of something. This means he is at risk of receiving less information about the world around him. This concerns everyday things such as seeing ducks in a ditch, the light switch in the toilet, the puddles on the street after a rain shower, and clips in a friend's hair.

Missing out on this information can have consequences for a child's vocabulary. If certain things and concepts and the relationships between them escape a child, he will not learn these words so easily. You can overcome this with a shorter viewing distance, more time and more repetition. You can also look together with your child and discuss what he sees. This will encourage him to discover the details in what he's looking at, which in turn will expand his knowledge of the world and his vocabulary. You can start with this from the moment that your child says his first words. When doing so, try to find out what exactly your child wants to say and reward him for talking by showing that you understand him.
You can guide your child's daily actions with short sentences. Emphasize the most important word and let your child feel this emphasis. For example: "Here is the SOAP, and now I'm using it to wash your FOOT." By linking the word to something tangible in this way, you are helping language to gain meaning for your child.

Sommige kinderen met CVI hebben een beschadiging in het gebied in de hersenSome children with CVI have damage to the area of the brain that is important for the visual recognition of objects and animals (see Chapter 1.1). It is extra difficult for these children to put words to what they are seeing. By allowing your child to touch and see real objects and animals, you can help him to attach meaning to what he sees. When examining objects, you can encourage him to feel them too, which will make it easier for him to recognise the object.

3.4.1 What else can you do?

For toddlers and small children, you can carry out daily activities together, look closely at things and give words to them. The following are a few options for things you can look at together.

- Clothing. Show your child where the zip is, touch the buttons on the jumper, show him where the hood is on his jacket and the laces in his shoes.
- The front door. The handle on the outside of the door is different to the one on the inside. Where are the letter box and the doorbell?
- Food. Bread has a crust, an orange is made up of segments, and there's a core with pips in the middle of an apple.

- Variety in the same type of object. Consider shoes – there are sandals, boots, sneakers and slippers. What is the difference? A child without visual impairment will see this at a single glance. A child who has difficulty focusing his visual attention on something will take a broader view and will be slower to discern the differences.

4 Becoming independent

Rick’s mother relates: “Ever since Rick has been able to choose his own jacket, he’s always chosen a bright colour. At first I didn’t like that because the colour stood out so much. But that’s what he really wanted, because it made it easier for him to find his jacket among all the dark blue ones belonging to his class mates. Now I understand that better, and I no longer try to convince him to choose a darker colour.”

Young children need a lot of care, from washing and dressing to brushing teeth, changing nappies and feeding. As they grow older, they will do more and more things for themselves. This is partly because they see others doing these things and want to imitate them, and partly because they are encouraged to do so. They will gradually become more independent.

4.1 Learning new actions

Children without visual impairment learn many skills by watching and imitating. If a toddler of around three years old sees his mother pouring juice, he will also want to try that for himself. At first, his actions will be reasonably uncontrolled, so more juice will land next to the cup than in it. Through repetition and encouragement, he will eventually learn how to pour without spilling.
Naturally, children with CVI can also imitate the actions of others, but imitating on the basis of sight only can be difficult for them. Some children with CVI have difficulty with spatial awareness and find it hard to understand the concepts of above and below, and left and right. It can also be difficult for them to learn a new skill in the right order, such as getting dressed, going to the toilet, or sitting on a chair.
By doing a lot together with your child, you will help him to understand the process involved in daily actions and how others do them.

4.1.1 Points of attention

If you would like to teach your child something new, you can bear the following points in mind.

Lighting

When learning a new skill, it's important for the space to be adequately lit. This will make it less stressful for your child to look at things, and he will be able to focus on what he's doing.

Use all of the senses and provide enough time
Before you start teaching your child a new skill, you should give him the opportunity to extensively explore the objects he will be using. For example, you may want to teach your child how to drink out of a cup. First encourage him to take a good look at the cup. Let him feel whether the cup is full or empty. What does juice smell like, and milk? Can you hear the drink being poured into the cup? A child without visual impairment is aware of all this at a single glance. A child with CVI needs more time and practice.

Carry out the action together

For a child with CVI, it's often good to try out a new action together in the beginning. This will give him insight into the process of the skill to be learned. Eating bread is not just about putting a piece of bread into your mouth, but also about reaching for and grasping the piece of bread, or spearing it on a fork, then bringing it straight to your mouth, putting the fork down and then taking another piece.

You can help your child to experience an action by putting your own hands over his hands, and then directing his actions. You carry out the movement together. Once your child has become better at managing the action, you can guide his movement by his wrists and then later by his elbows. Then, you can have him carry out the last step in the action independently. Once that goes smoothly, he can then carry out the second last step, and so on. In this way, he will eventually master the entire skill.

Use language

Using simple words, tell your child what he needs to do, and what you expect of him. As far as possible, use the same words for the objects. For example: "Look Bart, here is your jacket, hang it up on the coat stand."

Although it's important to tell him what he has to do, it's sometimes also a good idea to be silent. A child with CVI can be so distracted by talking that, at that moment, he is only able to listen.

Structure

If you want to encourage your child to be self-sufficient and teach him practical skills, it's important that items and objects are always kept in the same place and therefore easy to find.

Repeat

Frank has learned at home how to climb into his high chair. After a lot of practice, he can do this quickly and easily. Only then does he succeed in doing this at childcare as well. Why is this?

Children with CVI need a lot of practice to master a skill. In order to automatise a skill, it's advisable to practice the skill in the same place each time. This will prevent your child from being distracted by everything he can see or hear. Once he has automatised the skill, you can teach him how to carry it out under other circumstances, such as in a busy, unfamiliar environment.

4.2 Eating and drinking

Learning to eat and drink independently can be problematic for children with CVI for various reasons. These children may look at things only fleetingly, or take a broader view. This can lead to problems with eating. If your child hasn't properly seen what's on his plate, he also won't know what he's about to get in his mouth. This can startle him, which may make it look as if he doesn't like something or doesn't want to eat. You can help him by telling him what's on the plate and giving him the time to smell it. Some children find it more enjoyable to eat with their hands as they receive more information about the food through their sense of touch. Other children prefer eating food with a particular texture, such as smooth or solid. If a child hasn't noticed that there are lumps in his food, he may be startled by them and spit the food out.

Furthermore, looking at things can be difficult for your child if there is too much to see. For example, there may be too much stuff on and next to the table, the tablecloth may have a busy pattern, or your child might have a plate with a picture on it.
Preferably avoid putting the sandwich toppings within your child's view. This could distract him, making it more difficult for him to focus his attention on his own food and drink.

In addition, if there is a lot of noise in the surroundings, your child may not be able to focus on looking at things. Some children are only able to do one thing at a time. If there is too much noise, then they will find it difficult to look properly. Therefore, do as much as you can to limit noise around your child. If necessary, turn off the TV and radio and set your telephone to silent, and avoid having a conversation near your child.

Because it's sometimes difficult for a child with CVI to judge the distance to an object, he may regularly have little accidents. For example, picking up a cup without knocking it over can be a very difficult task for him. You can best help your child in this by staying relaxed and calm, and not getting angry if the cup falls over. It's a good idea to consistently put the cup in the same place, and to ensure that it's in a colour that contrasts strongly with the tabletop. A good colour contrast between the cup and the table will make it easier for your child to estimate the distance to the cup.

Carrying out an action while looking at the same time is not possible for some children with CVI. This can make it very difficult for them to do things like spearing a piece of bread on a fork, or scooping up a mouthful of food onto a spoon. An easy remedy is to put just a few pieces of food on your child's plate. For scooping up food, it's best to use a plate that has a raised edge. You can help your child to make the stabbing or scooping movement so that he can get used to how it feels. Once he is able to spear or scoop food fairly automatically, it will probably become easier for your child to keep looking at the same time. Some eating and drinking actions can be difficult for your child, such as learning to spread a piece of bread or peel a banana. In order to learn these skills, your child may need to do extra practice in a calm environment, without other family members nearby or things going on around him. It's only once he has mastered these skills that he will be able to carry them out while everyone else is eating and drinking around him.

Children are often allowed to choose something at the table, such as the spread they want on their bread and the fruit they'd like from the fruit bowl. A child with CVI may find it difficult to make a choice. It's harder for him to distinguish between the different pieces of fruit because there are so many jumbled up together, and you can sometimes only see a part of the fruit. You can help your child by limiting the choice to two pieces of fruit. For example, put a mandarin and a banana in front of him and encourage him to choose from these. You can put the fruit bowl out of sight again after using it.
If your child is allowed to choose his own spread for his bread, make sure that he is able to see it close up, can handle it, and can smell it.
If he has trouble recognising the jar containing the spread, it can help to place a coloured sticker on it to make it easier for him to distinguish the jam from the peanut butter.
Teach your child to ask for what he needs at table, and put packets and jars on a tray in a fixed place.

From the age of around three, children enjoy helping to set the table. Give your child a simple task to do. For example, have him put his own plate, cup or the butter on the table. You can also have him take something out of the cupboard and bring it to the table.

4.2.1 What else can you do?

- If you want to teach your child to drink independently, preferably start out with a half-full cup instead of a full one. Sometimes just a mouthful or two of drink is enough; that way, if your child spills it, there won't be much mess. He won't drink a great deal at first anyway, and by starting out with a small quantity, you will be more likely to give him the experience of success. You can refill the cup afterwards, naturally.
- Teach your child to eat from a plate. A plate is a defined area within which he can easily find his food. This effect is made even greater by using a plate with a raised edge. If the plate is in a colour that contrasts with the table surface, it will be easier for him to see.
- Try looking at things from your child's eye level and place at the table to experience how things look for him. For example, if he looks towards the window where he can see cars driving past, it may be a good idea to give him a different place at the table, such as one where he looks at a plain wall instead.

4.3 Dressing and undressing

Dressing and undressing is an activity that takes place every day. This can be complex for children with CVI. After all, they have to learn how many actions are involved in dressing and undressing, and do these in the correct order.

General points of attention for teaching your child to dress and undress include:

- Demonstrate close up and slowly how you put on or take off an item of clothing.
- Tell your child what you're doing and how. This will give him insight into the action.
- Repeat the action often, as this will also help him to understand.
- It's a good idea to use a fixed order in getting dressed and undressed, and to do so in a fixed place.
- You can best carry out the actions together with your child by standing or sitting behind him.

Recognising a garment

Getting dressed often starts with choosing an item of clothing. Recognising and finding an item of clothing can be difficult for your child.
He will not notice the shoes that are halfway under the sofa one time, and next to the kitchen door another time.
How can you distinguish between a folded t-shirt and folded trousers in a cupboard? Where are the socks and underpants? You can give your child some insight into this by playfully letting him “help” with fetching and tidying up his clothes. You can also make things easier for him by ensuring that his clothes are always lying or hanging in the same fixed place.

Children who have difficulty processing spatial information sometimes don’t understand how a garment is assembled. Which is the front and which is the back? What is the bottom and the top? What is left and right? You can help your child with this by clearly showing him and telling him how to recognise the parts of a garment. “Look and feel, this is the loop inside your jacket, this is the top.”
Pay some attention to the different parts of clothing. Where are the sleeves? Where are the pockets? What do a button and buttonhole look like, and velcro? What does a zip feel like, and what kinds of fabric are there? Some children have difficulty seeing the difference in structure between a pair of jeans and a woollen jumper. Give your child the time and opportunity to feel this difference.

Undressing

Undressing yourself is easier than dressing. When you teach your child to undress himself, it’s a good idea to teach him to do this from back to front. You let him do the last step himself, by having him take off a sock the rest of the way that you’ve already partly taken off yourself. This will quickly give him the feeling of being able to do something himself, and it’s good for his self-confidence. If this goes well, then you can let him do the step before that too. Start together first, and then gradually let him do more and more without help until he can do it all by himself.

Dressing

When teaching your child to dress, you can take the same approach as for getting undressed. Loose clothing without difficult buttons or zips is easiest

when teaching your child to dress. Make a pile of clothes and put the first item of clothing on top. Look or feel together where the label is, to see where the back of a jumper, shirt or t-shirt is. Look together for a point of reference on the front, such as an image or buttons, or the shape of the neckline. You can lay a jumper face down on the table. First have your child look for the sleeves, then put his arms in the sleeves and pull the jumper on over his head.
If your child wants to learn how to put on a jacket, you can put the hood on his head first so that he has a starting point. After that he can feel where the sleeves are and put his arms into them.

Shoes and socks
It’s a good idea to have your child sit down properly when teaching him how to put on and take off his shoes and socks. For example, sit on the floor with your child between your legs and his back to you. Good balance helps him to carry out this type of action. You can teach your child how to take off his shoes and socks by doing it together, and explaining the action while you’re doing it: “We take the shoe off by taking hold of the back of the right shoe with your left hand.”
Be aware that ankle socks are easier to take off and put on than knee-high socks. A sturdy shoe is easier than a gym shoe. Shoes with velcro fastenings are easier for a child to fasten themselves than shoes with laces.
Putting on a sock? Teach your child how to put his thumbs into the sock, and let him pull the last part of the sock up himself. Once this goes smoothly, you can then have him pull the sock over his heel. After that, he can pull the sock over his foot from the toes. Once he’s mastered that, then he can try putting his foot into the sock. The same principle applies here as always: he should first do it together with you, then do it with less and less help, and finally all by himself!
When practicing putting on socks, it’s a good idea to use socks that aren’t too tight.

Hanging up a jacket
A child with CVI may find it difficult to find his own jacket among a lot of other jackets. Therefore, choose a clear place for him to hang up his jacket, preferably on a coat stand that he can reach for himself. A fixed spot at the front or back of the coat stand is a good idea. A memory aid in the form of an object, such as

a couple of beads on a cord or a piece of tape in a bright colour, will give him a little extra help.
A jacket in a striking colour is easy to find among other jackets. Tidy away any jackets that are not being used. The more jackets there are, the more confusing it will be for your child.
The hallway and place where the coat stand is located are often less well lit than the rest of the house. This can make it harder for your child to find his jacket. It's therefore advisable to have extra light in the hallway or near the coat stand.
Perhaps keep his gloves, hat and scarf in a brightly coloured box or crate under the coat stand.

4.4 Toilet training

In general, children become toilet-trained between their second and third year. Before that time, they have no control over the muscles that they need to use for this. Children often set their own pace for learning how to use the toilet. You can help your child by introducing him to the toilet at a young age, and praising him when he manages to use it. Preferably teach your child to use the toilet directly rather than first learning on a potty. You can use a child's toilet seat and a footstool for this, and it means you won't need to teach your child a new skill twice.

Your child may find it difficult to grasp all the things that have to happen when he goes to the toilet. For this reason, it's important to build up to it in small steps. It's advisable at first to separate toilet training from taking off and putting on pants. First help your child as much as possible with taking off and putting on his clothes, and focus on encouraging him to pee and poop on the toilet. Once he's mastered that, the rest will follow.
Involve your child when you go to the toilet yourself. Let him see and touch the toilet from close up and tell him what it's all about. Give him the time to explore the toilet room. Coloured tape on the flush button, toilet roll holder and light switch will make these clearly visible.
Your child may be startled by the sound of the toilet flushing. It often helps to flush the toilet together, and to announce that there will be a loud noise when you do this. As emphasised previously, good lighting and a calm, plain environment will help your child not to be distracted from the things he must do when going to the toilet.

For children who find it difficult to orient themselves in the house, you can hang something on or next to the toilet door that makes it clear where the toilet is. For example, this might be a clear picture of the toilet in a bright colour at eye level for your child.

Be aware that your child may use the toilet well when at home, but still have difficulty doing so elsewhere. This may be due to the environment being different, but also because he is distracted by the different things he sees and hears.

4.5 More examples

The following are examples of other daily actions that you can teach your child in the same way as described in the previous section.

- Sitting on a chair or sofa.
- Opening and closing a door.
- Opening and unpacking a bag.
- Throwing something in the rubbish bin.
- Twisting a cap off and on something.
- Washing hands.
- Brushing teeth.
- Hair brushing.

Remember that it's important for your child's development that he is able to do as much for himself as possible. This will not only increase his self-esteem, but also his social and motor capabilities.

5 Playing

Huub is sitting on the sofa and playing with his toy telephone. When he hits the telephone and it rings, he turns his head away and picks it up without looking at it.

Children and play go together. Young children play for a large part of the day, with toys, with others, and with whatever they spontaneously come across. Playing is important for children's development. By playing they discover all kinds of things and become familiar with the world around them. For children themselves, play is primarily about enjoyment.

The play of young children with and without visual impairment seems at first glance very similar. However, there are differences. The play of a child with CVI is often less varied than that of a sighted child.
Children with CVI often find it difficult to keep track of things. The distance might be too large, or the game too fast, or too much might happen at once, which makes it hard for the child to grasp the whole situation. Some children with CVI hold objects very close to their eyes, which means they miss the bigger picture. After all, how can you get an image of a whole doll's house when you're only ten centimetres away from it? Other children find it confusing when there are lots of toys around them, especially when they are scattered on the ground or table.
Noticing what others are doing is also more complicated for children with CVI. If your child looks up briefly to see what someone else is doing, he may then lose track of an object in his visual field. Not being easily able to see how a child on the other side of the table is doing a puzzle also makes it less appealing for your child to try that out himself. He may also be less inclined to go and explore things, and some play activities may simply be too difficult for him.

5.1 Guiding your child's play

There are a number of different ways you can support and encourage your child while playing.

Use all of the senses and provide enough time
Give your child enough time to explore his toys in his own way and at his own pace. Encourage him to use all of his senses in doing so. He may find it nice to touch and smell an object as well as looking at it. Give him plenty of time to do this. Encourage him to explore a variety of materials. This could include everyday things such as a plastic bottle with a screw cap, a tissue, a twig, an empty milk carton, an empty match box, or an old magazine. Put items in a container or a small box, such as a shoebox. You can do this already with very young children. If the items are small, stay nearby to prevent your child putting them in his mouth.
Most children enjoy playing with containers and cups. These can be stacked inside and on top of each other. Give your child sufficient time to explore

everything: how does something feel, how large is it, what does it smell like, which containers fit inside each other and which ones don't?
Show your child slowly and close up what the intention of the playthings is. You could use the "hand-over-hand" method for this. This involves putting your own hands on top of or under your child's hands so that he can experience and understand the action you are carrying out. This is easiest to do if you sit behind your child. Actions you could do together include threading a bead onto a stick, or placing a toy train onto a railway track.

Colour/contrast

Children with CVI most enjoy playing in a well-lit environment with brightly coloured toys on a uniform, contrasting surface. This makes it easy to distinguish the toys, enabling your child to better focus his visual attention and making it easier for him to look properly at the toys.

Structure

By providing structure and order in play, you can offer your child clarity. Provide a fixed playing area. It's a good idea to keep all of his play materials in the same place. Your child will therefore not need to expend so much effort taking in the space and looking for his toys. He will also be quicker to understand what is expected of him. For example, you always play with the train on the blue mat, and with the lotto game at the table.

When your child is playing at the table, try to organise the place where he is playing. You can make it easier for him to see what's there by putting his toys on a tray or place mat in a contrasting colour. This will probably encourage him to play more readily. Another thing that helps is not to give him too many playthings at once. Too many toys will confuse him, and he won't know what to do. Putting his toys in a container on the table will help him to find them quicker. For example, if you put pens or beads in a container, your child won't then need to search over the whole table to find them.
You can teach your child to carry out certain actions in a fixed order: for example, first take all of the pieces out of the peg puzzle one by one, and put them in a container. Then, take the pieces one by one out of the container and fit them into the puzzle.

If your child plays on the floor, it's a good idea to use a plain coloured mat for him to play on. A mat defines the play area, which makes things clearer for him.

It can also help if you prepare your child for what's going to happen by telling him what you expect of him. For example: "Now you're going to play for a bit with your train on the mat." Of course, if your child is a little older, you can also discuss with him what he would like to play with.
When you want your child to stop playing, indicate this clearly and in good time. You may need to repeat yourself a couple of times. If necessary, you can touch your child to get his full attention. Your child may be so involved in his game that he doesn't hear you at first.

Simultaneity and environment
A child with CVI may find it more difficult to play when there are all kinds of things going on around him and there's a lot to see and hear. A peaceful environment makes it a lot easier for him to look at things and focus his visual attention. Try to ensure that background noises are kept to a minimum. Don't put music or the television on for company. Don't let other children run through the area as this will disrupt the ability of your child to focus his attention properly.

You can also create a calm environment by providing surroundings that do not interfere with your child's ability to focus his gaze. Below are a number of recommendations for creating such a space:

- Choose a cabinet that can be closed instead of an open cabinet.
- Provide a clearly organised storage space for toys. Many children with CVI have difficulty with getting clarity and finding materials. A cupboard with containers organising toys by theme is a good idea. You can sort the toys in these according to type: one container with blocks, and containers with cars, balls or Playmobil. You can stick an example or picture of the item on the container so your child knows what's in it.
- Limit the quantity of things. Preferably avoid putting too many toys on the shelves or in the containers in the cupboard. It's a lot more difficult to find a Playmobil figure in a large, full container than in a smaller container with just a few Playmobil items. Otherwise, it may take your child too long to get an overview of what's there. As a consequence, he may end up standing

endlessly in front of the cupboard and never actually get around to playing. He may also limit himself to playing with the toys he took out first, and therefore won't have any variety in his play.

- Plain walls without too many pictures or busy wallpaper. While he's playing, your child will find it much more pleasant to be able to look at a plain wall instead of a busy background or a window with cars and cyclists passing by outside.

5.2 Playing with your baby or toddler

There are numerous places where you can play with your young child. On the ground, on a rug, on the big bed, in the grass, in the water and sitting on your lap. For a baby or toddler with CVI, it can feel nice to play in a defined area. He will be able to orient himself better and find his toys more easily.
Below are a few examples of defined playing areas.

Playing in the playpen
Very young children often play in the playpen. This can be a pleasant place for a child with CVI. It's a clearly defined area, everything is within easy reach, and you can fasten things to the side of the playpen. Make sure that there isn't too much in the playpen, and that some items have a fixed place. This will help your child learn to orient himself. To help your child see his toys easily, you're best off using a plain playpen mat. A playpen mat with a busy pattern makes it difficult for your child to distinguish what's part of the background from things that he can pick up and play with.

Little room
The so-called "little room" is something specially intended for young children. This is a little house of around one square metre, that's open on one side and is specially developed for children with visual impairment. Because it's small and closed at the top, it encourages your child to actively explore the space. In such a small area, it's easy for your child to explore and discover what's in the space. Toys are easy to find because they are always within easy reach. An enclosed space like the little room keeps out a lot of ambient noise. This makes it easier

for your child to hear the sounds that are made inside because they sound louder.
You can make your own little room, or borrow one from an institution that provides guidance for people with visual impairment.

Playing on the ground
Create a defined play area, for example by letting your child play in an empty inflatable swimming pool, a large box or on a plain rug. You can also define the area by putting a cupboard next to it. Children with CVI don't enjoy playing in the middle of a space. Playing in a corner ensures less distraction and makes it easier for them to concentrate on looking carefully at things.

Suggestions for toys for young children
- Everyday objects; see the 'Guiding your child's play' section for examples.
- Sound-making toys, such as simple musical instruments. This could include a drum, a maraca or a xylophone and, once your child is a little bigger, a harmonica.
- Balls of all sizes and types, from hard to soft and in bright, clear colours. An inflatable ball that isn't completely inflated can be handy because it rolls away less quickly.

- Round stacking cups or normal plastic cups. Your child can enjoy fitting them together, stacking them in each other and taking them apart again, and stacking them on top of each other.
- Pots and pans from the kitchen along with a wooden spoon, whisk and similar kitchen utensils are also fun for toddlers to play with and gain new experiences.
- Brightly coloured magnetic blocks on a plain metal sheet. The advantage of magnetic blocks is that they don't fall so easily and are therefore easy to find again.
- Playing with sand and water. Your child doesn't have to sit in sand and water in order to play with them. He can also have a lot of fun with a washing up bowl full of sand or water. Give your child plenty of time to explore them with his hands and feet. You can also encourage your child to play with trowels, spoons, buckets and watering cans. If your child doesn't enjoy playing with sand, you can replace it with dry rice, beans or macaroni. This has a more solid form than sand and won't stick as much to his hands.

5.3 Playing with your pre-schooler or kindergartener

Your child is getting bigger, and the opportunities to play are increasing rapidly. There are more and more toys that are suitable for your child.

5.3.1 Reading books

Most children enjoy looking at a book together with their parents and having a story read to them. If your child has CVI, it can be harder for him to distinguish and comprehend everything in an image on a page. A book with pages with lots of images on them will be harder for him than a book with fewer images per page. An image with fewer details is also easier to distinguish than a very detailed image. You can help your child with looking at the image by covering part of the page with a plain sheet of paper. Point with your finger to draw his attention to what you're talking about.
Children with CVI often have more difficulty with recognising an image when it's taken from a different perspective. They can recognise a train from the side,

but may not be able to recognise the same train from the front. Take the time to explain this to your child.
Some children with CVI find it difficult to recognise a drawn illustration. A good intermediate step is to use photos. Read to your child in a quiet environment or space. Looking at things already costs him a great deal of effort, and if there is a lot going on around him, this will make it even more difficult.
Some children find it hard to focus on the pictures if you are talking to them at the same time. To remedy this, you could first read the text to your child, and then look at the picture together.
Read the same book regularly; many children like knowing what's coming. A child with CVI derives even more benefit from repeated readings than a sighted child.

5.3.2 Puzzles

The first puzzles that toddlers encounter are peg puzzles. These come in all shapes and sizes. If your child has CVI, you're best off starting with a puzzle that has pieces in a simple shape, such as a circle and a square. It helps if the puzzle pieces have a clear colour and come with large knobs for picking them up. It's easier for your child if the background of the puzzle recess is the same colour as the puzzle piece, so that he can easily match the piece with the right place in the puzzle.
At first, it may be too complicated for him to put all of the puzzle pieces in correctly. Start with one or two pieces and build up gradually when you see that your child understands and masters the skill. The fewer the puzzle pieces, the clearer and easier it is for him. If your child takes each puzzle piece out of the puzzle one by one, he will learn by memory where he has to put them back again later.
If your child has difficulty finding the recess into which a puzzle piece fits, this may also be due to there being insufficient contrast between the surface of the puzzle and the recess into which the piece has to go. By giving the background a darker, contrasting colour, or outlining the edge of the recess using a thick, black marker, you can make the recess easier for him to see.

A peg puzzle in clear, bright colours with few details is simpler for children with CVI than a puzzle in pastel colours with a lot of details. Peg puzzles with a detailed picture may be too difficult for your child because it takes him a lot of energy to look properly at the picture, pick up the puzzle piece, try to find where it fits, and then put it in the right place. The knob for picking up the puzzle piece may also be too small for him to see easily.

Jigsaw puzzles are still more difficult. These require that your child has a better overview and comprehends the image in the puzzle. Encourage your child to look carefully at the image and to name what he sees, before trying to do the puzzle. You can put the pieces he isn't using yet into a container. This will help him not to get distracted by the other puzzle pieces and he won't need to look around on the table to find them.
Some children with CVI have difficulty in forming a whole from its component parts. It can be hard for them to understand how to go about this. Once again, start simply with putting two pieces together. You can do that first without an image, and then later with a simple image. A simple postcard is very useful for this purpose. You can cut it through the middle so that your child better understands the relationship between the pieces. He can then fit the pieces back together correctly.

5.3.3 Tablet and iPad

Most families have an iPad or tablet nowadays. Many children enjoy playing games on these. They attract visual attention and motivate children to focus on looking at something.
There are apps that are very suitable for children with CVI. In these apps, the moving images are slower, there is less simultaneity in the images, and there are few sounds.

If you are looking for suitable apps for your child, bear in mind the following points:

- Choose apps in bright colours with a clear difference between the foreground and background.
- Make sure that you can adjust the speed of the moving images or the pace at which images change.
- Your child will be able to process the images in the app more easily if there are few details and the images are separate.

- Use apps with images in an obvious position and with realistic colours. A cow standing in a green meadow is easier to recognise than a purple cow on the street.
- For children who are easily distracted by sounds, check that you can switch off the sound or choose apps with little auxiliary sound.

Some children prefer to have the tablet right in front of them. In this case, it's useful to use a reading stand or tablet cover that you can set at an angle. Your child may sit with his face extremely close to the tablet. This is not a problem. This is how he avoids distraction from the rest of his environment so that he can better focus on the images on the tablet. We also see this kind of behaviour in children with CVI who are watching television or looking at a book.
Under 'Settings' on the tablet, you can activate the 'supervised access' feature. This prevents your child from swiping from app to app. Setting this up will be different from tablet to tablet. You can find instructions on how to do this on the internet, by searching for 'supervised access' along with your type of tablet.

5.3.4 Construction material

Most children love to build using all kinds of toys. This might include building towers with blocks, putting Lego blocks together and taking them apart again, stringing beads, making mosaic art and playing hammer tap tap. At first, it might seem that this sort of activity is far too fiddly to do with your toddler or young child, but he can still enjoy it.

It is important to make sure that you're not asking too much of your child. To provide him with experiences of success, it's important to begin at as easy a level as possible. Lego Duplo is larger than normal Lego, so practicing first with Duplo makes the transition to smaller Lego much easier. Duplo is generally good construction material for children with CVI. This is because you can attach it to a surface, it comes in clear, bright colours and is not too small. You can also use larger blocks to make a tower. Can you put two blocks together? Who knows, maybe you can put three or even four blocks together too.

Mosaic art, stringing beads and building towers from blocks are all things you can do at the table, which means you can also shorten the viewing distance if your child needs it.

A construction game can be more difficult for a child with CVI if he has to find various materials in a big box, so it helps if this is organised well.

It becomes more difficult if other children are also playing. A lack of overview, the short viewing distance and the time required to search for things can lead to frustration and quarrels. You can solve this by giving each child his own box or container.

5.3.5 Games

Many games call upon your child's capacity to think, such as Memory, Lotto, counting games and sorting games. For a child with CVI, the difficulty of these depends on the number of pictures/cards and the clarity of the image. The following are a number of examples of games you can use:

- Games like Picture Lotto, where you have to find the matching images. If the images are reasonably large and clear, with bright colours and few details, your child will find it easier to examine the images and spot any differences between them. Once your child has found the right combinations, he will have reached his goal. This generally gives a great deal of satisfaction. Your child will probably have more difficulty with images with the same colour combinations and many small details. You can make this game easier in a simple way, by offering the images two by two instead of all at once. Only after the two images have been found do you move onto the next two. Stating what's on the image together with your child can also help.

- Games in which you have to put images in a logical order. These games call on your child's ability to spot details. It's necessary to be able to distinguish all of the details on the images and recognise the images themselves. You can make it easier for your child to understand what he is looking at by using a few images that are as clear and with as few details as possible. Take extra space too when laying these out.
- Counting games. Counting games using concrete materials such as beads on an abacus are easier than those using images.

When introducing a new game, it's advisable to explain the game clearly at first and show slowly how it's played. You can play games like Lotto and Memory with several children. If you do, then be sure to guide the game well. Give your child more time to look at the images, and limit the number of cards you use. If there are too many cards on the table at once, it will be harder for him to play the game. He will then have fewer experiences of success.

5.3.6 Crafts

There are all kinds of ways to do crafts with young children. With a few adjustments, you can make it easier and more appealing for your child to create small pieces of art. This may be necessary due to the fact that hand-eye coordination is often more difficult for children with CVI.
Below are a few suggestions, sorted according to activity.

Drawing and colouring

Children are regularly offered pictures to colour in. In general, colouring pages with a large image, few details and thick outlines are very suitable. If your child is drawing on a sheet of paper, it's helpful to him if there's a clear contrast between paper and the surface it is lying on. For example, you could put a larger, dark-coloured sheet under the drawing paper and fasten it to the table with sticky tape to prevent it moving around.
The lines made by marker pens are clearer than those of colouring pencils. Markers with extra thick tips are readily available. You can organise everything

on the table by putting markers or pencils in a container. This will make them easier to find than if they were lying on the table among other things. Do limit the number in the container, however, as a child with CVI will have difficulty finding the colour he's looking for in a container full of drawing things.
Would you like to paint with your child? If so, first give him the opportunity to examine the brush and paint and to look thoroughly at the materials from close quarters, as well as to touch them and perhaps smell them. Some children do not enjoy finger painting as they find the feel of the paint unpleasant. If this is so for your child, don't force him to try.

Sticking

You can encourage your child to stick things using a pot of glue, a glue stick, or even his fingers if he prefers. With the latter, he will be able to feel where the glue is.

A drop of watercolour ink in a pot of glue will give it a colour, which will make it easier for your child to see where he is spreading the glue. Give him a cloth to wipe his fingers clean afterwards.

Sometimes it's easier for your child to stick things along an edge or shape, or around something. He can then also feel with his hands what he has made. For making edges and shapes, you can use straws, sticks, pipe cleaners or other objects such as an empty toilet roll or a plastic bottle. Clearly tangible materials are sometimes more fun to stick than ordinary stickers, for example pellets of screwed up tissue paper, bottle caps, cork, patches, cotton wool, rubber shapes and macaroni. When using all of these materials, it's advisable to organise them in containers and not put too much in each container.

5.4 Tidying up

A tidy space is very important for a child with CVI. Objects lying on the ground are a nuisance when he is moving around. A child with CVI sometimes has difficulty looking and moving at the same time. He may stumble over objects lying on the ground because he simply doesn't see them there.

You can help your child in this by making sure that he doesn't take out too many things at once. Once he's finished with something, then tidy it away with him immediately. This will help keep things clear for him.

Don't tidy up everything into one large container. A child with CVI is often unable to find what he's looking for among a large collection of objects. Therefore, preferably use separate containers for different things. Ensure that toys are tidied up into a fixed place, rather than putting them in one place, and then another.

Taking out and putting away toys can be more difficult for a child with CVI than for a child without visual impairment. This is certainly the case if your child, through his CVI, does not have a good overview of things or insight into what needs to happen and where things should go. It's therefore a good idea to have your child help with tidying things up. This will help him to learn in a playful manner what tidying up means, and where his things belong. Even if you just put the block box into the cupboard with him, you will already make it easier for him to find it the next time he wants to play. If you quickly tidy everything away without involving your child, he won't know where everything belongs and won't learn to tidy up his toys himself.

5.5 Playing with other children

As your child gets older, he will come into contact with other children more often.
For young children aged up to four years old, playing together is still difficult. Most children often play alone or next to each other. Playing together is even more difficult for a child with CVI than for a peer with good vision. Playing together means that another person can have an influence on the play activity. Because children with CVI lack overview and have to put in a lot of effort to see the actions and facial expressions of other children at a glance, play with other children can often proceed at a pace that is too fast for them. The play can also take an unexpected turn for reasons which elude the child with CVI. This can lead to confusion and frustration.
Some children find it annoying or frightening when the toys, rules and game keep changing without warning. Some children remedy this by making sure they control the game and taking charge, while others prefer to play alone. There are also children who prefer to keep hold of the toys out of fear that another child will take them away and put them where they can't be found again. It will help your child if you explain what's happening and name the emotions you see in your child and the other child. You can also play with them as a parent, using a playful manner to keep the game on the right track.

5.6 Playing in an unfamiliar place

Children not only play at home, but also in other places. They might go to play with a friend, go visiting with their parents, or they might go to day care or toddler playgroup.
A child without visual impairment is able to see what there is in the play environment from just about every angle. Where are the toys, what's in the

various containers, what's in the cupboard? A young child with CVI mostly lacks this overview. It's only once he's able to see everything up close that he can remember where everything is.
If your child is in a new environment, he will need extra support to discover where everything is. Look at everything from close quarters and discuss what's there. If your child finds it difficult to choose something from the cupboard at playgroup or day care, it may help for him to have his own shelf or small cupboard with a limited number of items in it.

5.7 Playing outside

Outside is much less clear than indoors, because the space is naturally far larger. In addition, there are often other children cycling and running around, making everything unpredictable.
Take the time to explore the space outside together. Start close by: there is much to discover in your own garden already. Tell your child where there are steps up and down, pay attention to any uneven paving, and find out together where the large play equipment is, such as the swing or the slide. Allow your child to explore everything in his own way. That may be through touch, or sometimes just by looking at an item for a while at close quarters. There are children who enjoy exploring together. Perhaps your child would like to take a turn on the slide or swing while sitting in your lap. Once he's done it a couple of times this way, he may be ready to try it out for himself.
It can be useful to make the edge of the sandbox obvious using a bright or contrasting colour.
It's also good for your child if you are easily visible, particularly in a large outdoor space or when there are a lot of people around. Perhaps you could wear a jumper or jacket in a bright colour. There are also safety vests in bright yellow or orange that you could put on over your own jacket or jumper.

It's not only fun to go out in nice weather. It's also great to experience hard wind, rain or snow. It's important for a child with CVI to experience these weather conditions so that he can understand what they mean. Explain to your child what is happening and what he's feeling and experiencing: "Cold, hey? The snow feels cold, and you get cold hands and a cold nose."

6 Movement and orientation

Three-year-old Max wants to go down the slide at the playground on the corner. As he's climbing the ladder of the slide, his mother notices that he lifts his knees extremely high with each step. Once at the top of the slide, Max doesn't know how to sit down with his legs out in front of him. He asks his mother for help. His mother doesn't understand why he needs help, as he's been able to sit independently on the ground for a long time already.

We all know how much young toddlers or children enjoy moving around. A toddler aged one-and-a half years has generally already learned to crawl and is often taking his first steps. Toddlers and small children are running around, want to climb up and down everything, and are learning how to ride a tricycle or a bike with training wheels.
Children have a natural urge to move. The more chance they have to do so, the better they will become and the easier they will learn new skills. This is no different for children with CVI. However, you will notice that they are more quick to feel unsure of themselves during movement activities than their peers. They are sometimes just a little less nimble or have a little more difficulty in coordinating their movements. There are a number of reasons for this, as follows:

Reduced visual acuity and visual field
Some children with CVI cannot see well or have a visual field impairment. A child who can't see very well or has a decreased visual field is more likely to trip over or collide with something. This means your child may have unpleasant experiences that may make him afraid to move freely. A child who can't see well will also find it harder to see and imitate what other children do. This can lead to reduced variation in movements.

Difficulty with moving in space
In order for your toddler or small child to dare to move freely about, it's important for him to be able to orient himself well in a space. For a child with CVI, it's not always easy to get a clear overview of a space. For example, if chairs or other pieces of furniture in the living room have been moved, he may only notice this (too) late. The same applies to fast moving objects or objects lying directly in front of him and which he can trip over. When in an unfamiliar environment, a child with CVI needs much more time to get a good overview, which can lead him to feel insecure. Some children may then withdraw, while others will become overactive.

Difficulties in seeing depth and judging distances
Some children with CVI have difficulty seeing depth and judging distances. For example, they might just miss a ball, or make an extremely high step while walking up or down stairs, or grasp the banister firmly even though they are

clearly capable of walking up and down the stairs. Some children go down the stairs on their bottom for a long time, or carefully feel for height differences on the ground with a foot or a hand before crossing thresholds or stepping downwards. A child with CVI may also be confused by colour variations on the ground that he perceives as height differences. They often stop to stare at colour changes, such as a dried up puddle that has left a darker patch behind, or at a transition from grass to paving stones. Their walking rhythm may change noticeably if they walk over a shadow or a maintenance hole cover while walking along a pavement outside. They may sometimes test the spot with their foot or avoid the spot entirely. You will probably continue to see this behaviour when children are on unfamiliar ground.
For a young child with CVI, it can be a huge victory when they dare to jump off something, such as the edge of the sandbox or the last step of the staircase. It gives them a sense of security if they can hold someone's hand while doing this at first.

6.1 What else can you do?

Children with CVI who are able to gain a lot of experience in movement in a safe environment from a young age will soon discover that moving around is fun. You can use all kinds of situations in the house, outside or at a playground for this. Examples include: lap games for young children, crawling under tables

and chairs, climbing up and down a step, walking over a sofa and jumping off it again, walking up and down a hill, romping about on a mattress, and swinging at the playground. Consider also walking in fields with uneven terrain, and walking on different surfaces such as grass, gravel, sand and forest paths. You can help your child by giving him the opportunity to build up a lot of experience with height, colour and structure differences underfoot, and with distances between various objects. Encourage your child not only to look at the situation but also to try it out. In doing so, pay attention to the sounds you can hear and be aware that these may also distract him.
Can you hear where other children are playing, what does it smell like outside and inside, what does the distance feel like between two bars on a climbing frame or between the sofa and table? Children can also explore the ground on their hands and knees. You can feel the transitions between the different colours on a floor or difference in height with your foot, hands or knees. After a couple of times of teaching your child this, he will adopt the habit.

The better an image you can give your child of his body, the more fun and easy movement will become. You can encourage this by playing the following games:

- Lap games such as “Stop and go” and “Ride a little pony”.
- Circle games such as “Ring a ring of roses”. You touch each other and hold each other’s hands. By walking hand in hand in a circle, you experience what it’s like to follow someone else.
- Games that teach your child about his own body. You can do this by pointing out body parts, naming them, and singing songs about them such as “Head, shoulders, knees and toes”. Make different movements with the body parts, such as waving arms and stamping feet. You can also sing songs while doing this.
- Strength games such as pushing someone over or tug of war, or carrying something heavy such as buckets or bags of sand.
- Crawling games, for example under chairs or tables or through a crawl tunnel.
- Rolling games, such as on the big bed, on a thick mat, or down a slope.
- Horse rides; let your child sit on an adult’s back while the adult moves gently – this will help your child practice balancing.
- Swinging. On a swing, in a hammock or in a sheet held by two people.

- Sliding down a slide; this will help your child discover and experience height differences and the speed of the movement.
- Climbing and scrambling games, such as on a stairway or climbing frame. You can do this together with your child. Your child will enjoy this best if he can first feel to get an impression of the height and size.
- Tumbling; doing a somersault down a slope is easier than on a flat surface. Romping about on the big bed or on a thick mat.
- Moving in water, such as in the bath.
- Jumping; for example, from the last step on the stairs, from a low wall, or the edge of the sandbox. If your child finds this difficult, you can hold hands and do it together. You could also jump together on the grass, in the sand and even on the trampoline.
- Balance games; such as walking on a soft mattress, cushions or the sofa.

6.2 Going out into the world independently

As your child grows, he will move around more independently through his surroundings. His environment will expand, and he will want to move about in it. This starts at the moment a baby in a playpen rolls over in order to grasp a toy. As a parent, you hope that your child will eventually be able to find his way independently. Important conditions for this are things like your child having the courage to enter a space, being curious about the world around him, and seeking out new challenges. Through playing and with the help of others, he can learn about where he is. In short, he will learn how to orient himself. Sighted children see at a glance where they are, how they can get somewhere, and whether someone else is nearby. This is less self-evident for children with CVI. They can encounter various problems that make it more difficult for them to orient themselves in their surroundings.

Difficulty with simultaneous use of multiple senses
When you orient yourself and move about, this not only calls on your capacity to simultaneously process information from different senses, but also on your ability to move at the same time. Children with CVI often have trouble with moving at the same time as they are looking and listening. For example, you might see young children stop moving in order to listen. Only afterwards do they look towards the source of the sound that they've heard. This behaviour also occurs in more complex situations, such as rolling over in a playpen that is full of toys and lined with a mat with a busy pattern on it, or when moving around in a supermarket, playgroup or a busy room full of visitors.

The simultaneous use of multiple senses during movement becomes easier once the movements have become more automatic. As long as your child still requires attention for walking, running or cycling, he won't be able to properly keep an eye on his surroundings. The more he practices these movements, the more automatic they will become. Once this is the case, he will find it easier to also process the visual information and keep track of it.
You can also teach your child to first stand still or stop, then to look, and then to continue moving or walking. This is a useful strategy if your child goes to a new play area for the first time, and still has to explore everything.

Difficulty with perceiving movement

Your child may have difficulty perceiving moving objects. Young children may no longer look at the ball at the moment that it rolls away. It's only when the ball stops rolling that they will look at it again. Animals running in a field will only be recognised once they stand still. Later in his development, your child may be able to follow some moving objects, but it will still be difficult for him to estimate the speed of the movement. This means that it may be difficult for him to perceive that a child on a bike moves faster than one on foot.
You can teach your child to follow moving objects by offering them to him in a calm environment in which they contrast well with the background. Then you can gradually teach him this skill against a busier background, with less contrast, and in increasingly busier and larger spaces.

Your child may also have difficulty perceiving his environment if he is moving himself. For example, as a toddler in a pushchair or moving car, he may find it hard to focus his attention on what there is to see. In such instances, you will see him mostly look at objects in the car or pushchair that are close by and not moving.
In daily life, you can see two types of reaction in children who have difficulty with this. They may avoid situations by not moving themselves when there is movement in their vicinity. In that case, they might go and stand with their back against a wall to look at what's going on around them. They may also choose to move along edges and walls. Children who are less afraid often do move, but are more likely to collide with other running or cycling children in an open space.

You can help your child to learn how to be aware while he is moving himself. Many children find it easier to look while they are being moved around, than when they are moving around themselves. You can start by moving your child (pushing him in a cart or carrying him) very slowly and calmly through the room. While doing so, tell him what you can see and draw his visual attention to that. You can do this already with very young children. You can give a somewhat older child search tasks and have him point out objects. The speed with which you move together with your child depends on how long your child can stay focused. If you notice that he's only looking with fleeting glances or not looking at all, then you know that you're moving too fast.

At first, have him look at objects that are at the same height. After that you can vary the heights, directions and distances. Focusing on things at different distances requires more of your child. Afterwards, you can increase the speed at which you move around with your child. The final step is to teach your child how to perceive objects while he is moving himself around.

Difficulty with absorbing information in busy situations

In the previous section, we remarked that children with CVI often have difficulty perceiving movement. Another common problem in children with CVI is that they find it hard to absorb visual information in busy situations.
In addition, they are unable to properly select the important information from their environment, and have a hard time getting an overview of the whole situation. They are unable to focus their attention on one thing for a long time.

Children with CVI often orient themselves on a particular detail to recognise their direct environment. If this detail disappears, they can lose their way. For example, suppose your child was used to passing a red mailbox on the corner when walking home from the playground. If this mailbox were to be removed suddenly, this would cause him difficulties.
The same applies to finding toys. If toys are mixed up with all kinds of other materials, it may be difficult for your child to find them among the quantity of things. If Mummy or Daddy is sitting in a particular spot in a room full of visitors, and then goes to sit somewhere else, this causes the same problem for your child. If you move the furniture in the living room around, your child might find it harder to locate the toilet or kitchen.

You can help your child by exploring the direct environment together, and by giving him the time to become familiar with the space. Once your child is familiar with a space, he will be less likely to bump into obstacles and will be better at determining the position of objects from his memory. It's important first of all that your child can give meaning to the information he sees. Only then can he select the information. A red, rolled up hose next to the wall attracts attention. Only once your child knows that it's a fire hose and that it's not important to him, can you expect that he will ignore the hose. It's important for your child to build up a sort of 'visual databank' based on these sorts of experience. This will enable him to quickly recognise a range of situations and

give them meaning. The more experiences he has stored, the easier this will be. He will need less time to recognise objects.
Therefore, consciously pause when there's something to look at, tell your child about it, and let him have a good look at it and perhaps touch it. Indicate any orientation points and preferably choose a quiet moment for this. In your own environment, you can give certain orientation points inside and outside the house a striking colour.

Some children become overstimulated by too much visual information. They can no longer process the information and experience stress as a result. They often express this through agitated behaviour such as crying, closing off, looking for a quiet corner or looking at the ground while moving forwards. Each child reacts in his own way. Finding a visually calmer place may help.

6.3 Automatising movement

As we have already indicated earlier in this chapter, it helps children with CVI to practice moving often so that these movements can become automatic, as it were. This helps them to look in a more focused way and to keep their attention on their surroundings while moving about. Below we describe a number of common actions for moving about and the ways in which you can encourage your child to master these actions.

6.3.1 Walking

Seeing your child start walking independently is very special. In the beginning, it will give him a feeling of security if you hold both of his hands and stand in front of him. He can then walk towards you. Later on, you can lead him by one hand while he touches the couch, wall or the edge of the table with his other hand. You can gradually decrease the support you provide with your own hand. Tell him what he encounters with his other hand.
If he's at the point where he can't quite walk independently yet, give him a push cart or a doll's pram. Make sure to weigh this down with something like a stone. This will prevent the pram or cart from rolling faster than your child can walk, and will also protect your child from collisions. If your child bumps into something, it's a good idea to discuss this with him so that he can get a better

grip on his environment. “Hey, you’ve just bumped into something. That’s a door. Touch it, it can open and close.”
As soon as your child is able to do so, encourage him to build up as much experience in walking independently as possible. Start out in places with little visual information or distracting noises and with even ground underfoot. This will help him to gradually master the movements. In busier places, you can keep holding his hand so he doesn’t fall so easily, and can build up some positive experiences.

The next logical step after walking independently is running. Moving fast can be nerve-wracking for a child with CVI, particularly if he can’t see approaching children so well, or if someone or something unexpectedly appears in his visual field. You can help him by running hand in hand with him so that he can experience speed safely.

6.3.2 Walking up stairs

If your child finds it difficult to use stairs, you take account of this and make various adaptations to the surroundings as follows:

- Mark the edge of the steps with a clear, contrasting colour.
- Ensure good lighting (see section 2.1).
- Provide a handrail, possibly on both sides and at child height.
- For younger children, practice walking up and down stairs. When doing so, let your child hold your elbow or arm. This will give him more information about the slope and the position of the body than if he only holds your hand.
- Don't talk while taking the stairs, so that your child can concentrate properly.

6.3.3 Riding a bike

For many children with CVI, riding a bike can be a difficult skill to master. After all, you have to carry out several actions at the same time: keeping your balance, steering and pedalling at the same time, keeping your visual attention on your surroundings, and riding in a particular direction. It can be difficult to see children approaching on bicycles if you're moving yourself.
Most children first learn the pedalling movement and how to keep their balance. Looking where you are going and steering therefore disappear into the background. Once again, the same rule applies: the more automatic the cycling action becomes, the easier your child will find keeping his attention on his surroundings.

Most young children start out cycling on a tricycle. This is nice for them because it gives them a stable sitting position and they only have to concentrate on pedalling and steering. You can help your child by first letting him practice in a quiet place. Once he can cycle, then you are best off letting him start out by cycling in set places and along fixed routes. After the cycling action has become automatic to him, you can teach him to look ahead and cycle towards a visible point in the distance. You can support him by telling him beforehand what there is to see, and which orientation points there are. Once your child can manage this as well as focusing on the surroundings, encourage him to build up as much experience as possible on different types of surface, and with speeding up, stopping and starting. After that, you can take him to another area to practice there too, or make the transition to a balance bike or a bike with training wheels.

In order to be able to ride on a balance bike or a bike without training wheels, your child will need to have a good sense of balance through his buttocks and feet. There are a number of fun games you can play with your child to practice this without a bike. The following are a few options.

- Lap games in which you have your child pick something up off the ground while you hold him on your lap.
- Swinging.
- Scooting forward on his buttocks.
- Horse rides on a parent's back.
- Jumping on a trampoline.
- Walking along narrow surfaces, such as a tree trunk or the edge of the sandbox.

6.3.4 Playing with a ball

Children enjoy playing with a ball. As soon as they see a ball, they pick it up, kick it, or throw it. Getting familiar with a ball and enjoying playing with a ball appear to be things that are more difficult for children with CVI than for sighted children. They sometimes can't see the ball approaching, or they react too late to be able to catch the ball. They may often not be able to see what someone else is doing with a ball, so are not able to imitate the actions. All of these factors may contribute to making your child feel a little anxious about playing with a ball.

How can you help your child with CVI to have fun playing with a ball?

Balls

- Let your child come into contact with balls at his own pace: large and small, hard and soft. Small balls are easy to hold in the hand, can be carried about, or can easily be put into or taken out of something.
- Use a brightly coloured ball that contrasts strongly with the surroundings.
- You can make a ball audible by putting a crackly plastic bag around it or attaching a bell to it. If you use a beach ball, you can put rice inside it. You can also buy jingling balls. Your child will then be able to hear the ball

coming, even if he's looking away. A rolling ball is easier to hear than one that's flying through the air.

Rolling

- Start by rolling the ball instead of throwing it. A ball rolling over the ground is easier to see, hear and follow than a ball flying through the air.
  At first, use a soft ball. This will roll more slowly and therefore will be easier to follow. You can roll a small ball back and forth to each other while sitting at the table. Start by rolling a ball slowly towards your child.
- Go and sit close to each other on the ground while rolling a large ball back and forth to each other, perhaps with your feet against your child's feet. By doing this, you define the area in which the ball rolls and the movement of the ball is easier to see.

Catching

- To teach your child how to catch, you can use a beanbag, a soft beach ball or a balloon. These travel slower, giving your child more time to prepare himself for catching. A beach ball and a beanbag also don't bounce away at the moment they're caught.
- Prepare your child for the fact that you're going to throw a ball to him, so that he can be ready for it. You can do this by counting down, or saying his name and saying: "Here comes the ball."

Kicking

- In order to kick a ball, a child has to be able to keep his balance on one leg for a moment. You can practice this by playing various balancing games with your child. For example, he can practice standing on one leg while you hold onto him.

Surroundings

- If you go somewhere else to play with the ball, be aware that your child will need time to become accustomed to the new space. He will therefore not play with the ball right away.
- Your child may be distracted by all kinds of sounds around him. This may mean that he doesn't focus on the ball. Therefore, ensure calm surroundings, particularly at the start.

- Make sure there are few distracting objects around. This will make it easier for your child to concentrate on the movement of the ball.
- You and your child can easily play outside with a ball. Choose a place that isn't in the middle of an open area and keep the distance between you small. It's nicest for your child if he doesn't have to look into the sun.
- When you roll the ball towards your child, tell him you are doing so. You can define the area you're playing in with brightly coloured cones. This will make it clearer to your child where he can expect the ball to be. Begin by rolling or kicking the ball. A ball rolling over the ground is easier to see than one flying through the air. Stay in the same place as much as possible, so that your child can concentrate on the ball better.

At around four years of age, children can participate in a simple ball game. If they already have some ball skills, they will be able to concentrate on the game more. During a ball game, everyone is moving. This means that things are changing all the time. Some children with CVI may find it harder to follow what's happening because they can't easily see and follow the ball in the speed of the game.

6.4 Falling

Everyone who has to learn something difficult needs lots of encouragement and affirmation. Every child learns by falling over and getting up again. Parents of children with CVI sometimes have the urge to prevent their child from falling by catching him in time. If you do this, your child will learn that there will always be someone waiting to catch him. Then, when he really does fall over when there isn't anyone else nearby, he may really hurt himself. Therefore, teach your child how to fall. You can do this together during romping games. Help your child to learn how to fall down. Play strength games, such as pushing someone over, tug of war, carrying heavy objects such as buckets or bags of sand, to teach your child to build up his strength and remain in balance.
Preferably teach your child as early as possible in his development how to change position. You can ask for help from a child physiotherapist for this. This will prevent your child from becoming helplessly stuck in a sitting or standing position with nowhere to go.

7 Getting out there

Jip enjoys going to buy a raisin bun from the bakery with his father. When they go to buy a roll from a large supermarket, Jip doesn't want to go into the shop and starts to cry.

It's not only important for your child to get to know his own environment, but gradually also the wider world around him. The older your child gets, the more interested he will become in the things that are going on around him.
Every child responds differently to a different environment and the people who are there. Your child with CVI may have more difficulty with this. It's different to being at home, and it can be confusing for him. Some children then have the tendency to withdraw, while others become very active. If you go out, choose a time that's not too busy. Take unexpected events into account, as well as how your child might react.

7.1 Doing the shopping

One of the first trips that parents often take with their children is doing the shopping. This can be an overwhelming experience for children with CVI, because there's so much to see in a shop. Choose a moment when it's quiet so that he isn't overwhelmed by a lot of different noises. You can keep your baby or toddler close to you in a baby carrier, or let him experience the shop from the relatively enclosed environment of a pram. If you notice that there is too much visual information for your child, you can put the hood of the pram up to limit what he sees above and to the side of him. A small child might enjoy riding in the shopping trolley, so he can focus his attention on what there is to see while also being able to feel and see that you are close by.

7.2 Visiting friends and family

From a young age, your child will probably accompany you on visits to see other people. For a baby, your proximity will be enough for him to feel at ease. You can facilitate this by taking your baby onto your lap, or carrying him with you in a baby carrier. If you want to have your baby sleep in a different environment, then you can give him a feeling of security by putting him in his own pram with his dummy or his soft toy.
An older child will be more aware of the fact that he is in a new environment. Walk with him around the living room in the house of a friend or his grandparents. Tell him what you encounter and what sounds there are.

Encourage him to shake hands with the other people present if he feels brave enough to do so. This will help him to connect voices and faces with each other. Take his own play mat along with some favourite toys, so that there's something familiar around him.
If you sit in a corner of the sofa, you will be easy for your child to find, especially if you wear clothing in primary colours, such as a jumper in red, yellow or blue. It's nice for your child if you take a little time to pay attention to him during the visit. Don't be too quick to put him on someone else's lap. This may give him a fright. Give him time to get used to all the other people in the room. If you visit someone for their birthday, for example, it's nice for your child if you are among the first to arrive. This gives him the opportunity to get used to the increase in busyness due to people arriving.
During the visit, keep an eye on how much your child can deal with. If you notice that it's getting too much for him, then return home. You can always try again another time.

7.3 Going on holiday

Going on holiday with young children is always a big undertaking. When choosing a destination, you usually try to take your young child into account, in the hope that he will enjoy it as much as you do.
A child with CVI may have to get used to the new surroundings at first. Nothing is the same as it is at home. There's a different bed, another environment, another plate, cup and cutlery, other smells and sounds and a different daily routine.
All of these new impressions can mean that your child shows little initiative to explore his environment, and may even withdraw. Alternatively, he may become very active and confused because he cannot absorb and process all of this new information.
It will therefore be nice for your child to have plenty of time to get used to the new surroundings and settle in. Stay close to him. As his parent, you are familiar to him. Explore the new surroundings together with him. Walk around the field in which your tent is pitched, or look at all the rooms in the holiday house together. Tell him where you are, what he can hear and see, and give him the time to process all of this. If your child has difficulty looking and moving at the

same time, it may help him if you carry him the first time you go and look around the new surroundings.

Bringing along some familiar items may also help your child to feel secure. This might include his own bed cover with his scent on it, his favourite soft toy, his own plate and cup, and familiar toys that he likes to play with.
You can also make him a play area and demarcate it as much as possible. For example, you could use an inflatable pool without water in it, or a mat at a fixed place where he can play. This means that while playing, he will only need to focus on this spot and he will be able to find his toys easily.

Give your child a sense of security by sticking to the same routine he's used to at home.

It may be more restful for your child if you stay for as long as possible in the same place, and don't make too many trips during the holiday. Be aware that your child will need to become accustomed to a new environment each time. This may be easier for some children than others. You will notice from your child's behaviour what he can and can't handle. If you're in a busy area like a playground, zoo or beach, carry something with you in a bright colour. This will make it easier for your child to find you. Some children prefer to sit in the relatively contained environment of a pushchair or pram and to become accustomed to a busy or new environment from there.

8 Parties

On Floor's third birthday, lots of people come to visit, there is cake to eat, and Floor receives presents. Everything is a little different that day. It isn't long before Floor only wants to sit on her own familiar chair and she remains silent. Her brothers are fully enjoying the party.

From birthdays to Sinterklaas and Christmas, there are lots of parties to celebrate with your baby or young child. Parties are first and foremost about fun, both for the child celebrating his birthday and those who are invited. Children with CVI can have just as much fun at a party as their peers without visual impairment. However, some extra adaptations may be necessary.

8.1 Birthday parties

Your child's birthdays are very special occasions. Your child is already a year older and a lot of things have probably happened in the last year. It will be pleasant for your child if the day has some fixed landmarks, such as eating, drinking and sleeping at the usual times. The fact that everything is different on such a day can cause your child to become upset, after which it won't be fun for him any more.

Even though your child may have difficulty with a lot of visual information, it's nice to decorate the room in a festive manner. You can keep it visually manageable if you choose to put all of the decorations in one place. It's generally sufficient to decorate a chair or the door of the living room. If your child is a toddler, you can also show him a streamer and a balloon up close the day before and let him touch them.

If you've invited visitors, you can welcome them together with your child and tell him who has arrived. This is an especially good idea if he has trouble recognising faces. This will help your child to better understand where all the voices and sounds are coming from. It's generally not pleasant for your child to be unexpectedly touched or picked up by lots of people. Therefore, tell your adult visitors what to be aware of in dealing with your child, preferably beforehand. Make the party manageable for him by limiting the number of people and the time they are there.

As his parent, you can choose to wear clearly recognisable clothing that makes you easy for your child to find among all the visitors.

8.2 Sinterklaas

Children will often be aware of Sinterklaas from the age of one or two, especially if they have older brothers or sisters.
What does Sinterklaas involve, and how can you involve your child in this celebration? It is certainly advisable not build up unnecessary levels of excitement, and to prepare your young child well for what's going to happen. The Sinterklaas celebration can also be confusing. Some young children think that the arrival of Sinterklaas, generally three weeks before 5 December, is the whole celebration. This makes it unclear for them when the Sinterklaas activities come to an end. Why are you allowed to put your shoe out at some times and not at others? This requires explanation, clarity and predictability. Who are Sinterklaas and Piet and what do they come here to do? What do they have with them? Your young child will probably perceive something of the colourful clothing from afar, but they will most likely find it difficult to see exactly what Sint and Piet look like from a distance. You can prepare your child for this by letting him dress up as Sinterklaas or Piet, with the usual accessories such as gifts, pepernoten (small ginger cookies), the sack and the big book. You can also read a simple book about Sinterklaas to him, and look at the pictures together. If you do, choose a book that doesn't have too many images on one page, and has illustrations in clearly contrasting colours without too much detail.

If you go to see the arrival of Sinterklaas, be aware that this will be accompanied by crowds and lots of noise. Your young child may become confused and panic. Keep him close to you or let him sit safely up on your shoulders.
If you invite Sinterklaas and Piet to visit you at home, be aware that some children with CVI can be very good at recognising voices. If you have a familiar person play Sinterklaas or Piet, you may get caught out. If a stranger plays Sinterklaas or Piet, prepare him for the fact that your child might not look at things in a focused way and may especially adopt a listening attitude.

Sinterklaas also means putting your shoe out. This is a great moment for you and your family to look at and feel what kinds of shoes there are and how they differ from each other. One might have velcro while another has a zip or shoelaces. “Hey, how funny! Daddy's shoe is bigger than Mummy's!”

8.3 Christmas

Christmas is a celebration in which the creation of a warm and festive atmosphere plays a central role. Lamps, candles and a Christmas tree are elements that contribute to this special atmosphere.

8.3.1 Lights and Christmas decorations

Some children with CVI may really enjoy Christmas lighting, but for others it might be annoying. Your child may focus all of his attention on the lights and glittering Christmas decorations, while completely losing an overview of his environment. Pay attention to your child's body language. You can generally tell from it whether he finds the circumstances nice or annoying. In principle, you can celebrate Christmas just the way you're used to doing. You can guide your child by telling him a lot about what's going on, doing activities together, and letting him see everything from close up, and hear and feel it.

8.3.2 Decorating the Christmas tree

Decorating a Christmas tree is a big experience for your child if he's the right age for it. If your small child has only seen a Christmas tree from a distance, it may have escaped him that there are individual needles on a branch and that the branches are attached to a trunk. Finding that out is often a whole new experience for him.
You can decorate the tree with all kinds of glittering materials and objects that feel different and make noises, such as a bell, birds and pine cones. Hanging objects in the tree is a new skill for your child to learn. Give him enough time to learn this and do it together with him by laying your hands over his. In this way, you can guide and steer your child's actions effectively. This also reduces the chance of things going wrong, and this will encourage him to try again. If it turns out to be too difficult, you can always ask your child to pass you the decorations. Give him enough time to look at and feel the decorations properly. A Christmas ball and tinsel both glitter, but feel different. You can give your child a container of unbreakable Christmas ornaments beforehand so that he can become accustomed to them. Be aware that if you play Christmas songs while doing the decorating, you will make it more difficult for your child to focus his visual attention.

8.4 Presents

Children often receive presents during the celebrations described above. Every child naturally enjoys something different, depending partly on his age and interests. A very young child probably won't understand much about a wrapped present. Playing with crackling paper will be just as fun to him as the contents of the gift. It's okay if your child initially has little interest in new toys. He will need all of his attention for everything else going on during the day.

The following is some advice to bear in mind when choosing a gift:

- Plain, brightly coloured materials are easier to see than materials with busy patterns and in pastel colours.
- Choose images with as little detail as possible on things like a humming top, tea set or a ball.
- Make sure that puzzles, dominos and lotto games come with clear images and a plain background.
- Glittering materials can be extra appealing to partially sighted children with CVI.
- Look for picture books with clear images and plain backgrounds.
- Choose brightly coloured thick markers or pencils.

- A colouring book with thick lines and few unnecessary details is easier for your child to see than detailed colour images.
- A mirror is often a nice gift because your child can use it to look closely at his own face and all of its details. A magnifying shaving mirror is even better.
- Large, brightly coloured or glittering beads are easier to see than small beads with little colour. The threading wire should be in a contrasting colour and must be thick enough. It's also useful if the wire has a sturdy end that fits through the bead hole easily.
- Things that make noise are often very appealing. This might include brightly coloured rattles and musical instruments.

9 From pre-schooler to kindergartener

By the time your child reaches two years of age, you often already have to start thinking about a suitable primary school.
Many parents wonder what would be a suitable primary school for their child. That certainly applies to parents of a child with CVI too. Going to primary school heralds a whole new chapter in your child's life.
More and more, children with CVI are able to go to a school in the neighbourhood instead of some kind of special education institution. If your child has sufficient opportunities to compensate for his visual impairment, he can often go to a regular primary school. As parents, you generally don't need to make this choice on your own. You can seek the support of an institute specialised in guiding people with a visual impairment.

9.1 Choosing a primary school

As a parent, you know your child well and know what he needs for his development, but what should you be aware of when looking for a suitable school? The starting point is always to look for a school environment that allows your child to shine.
Perhaps an older sibling is already going to school, and you're wondering whether this school will also be suitable for your child with CVI. Discuss this with the school in good time.

What do you need to be aware of?
Each school has its own way of working. You can pay attention to the general aspects of the school such as the atmosphere, location, identity, size of the classes and educational vision. It's also important to know whether the school is capable of dealing with your child's visual impairment.

It's a good idea to make an appointment with the head of the school to find out more. During this appointment, you can discuss what opportunities the school has to offer in terms of individual guidance for your child. Can a teacher or other staff member make extra time for your child? Has the school previously had students with disabilities, and what were their experiences? Is the school prepared to be in regular contact with the parents and a supporting institution?

Is there enough peace and structure in the groups, can your child develop in his own way and learn at his own pace?

During this conversation, you can also clarify what your child needs and what you consider important. If possible, talk to other parents beforehand who already have a child at this school. Go along to the school when the children are coming out, talk to other parents and ask about their experiences with this school.

You can also pay attention to what the school looks like, inside and outside. It's important that the class room, the corridor and the toilet are well lit. A class with fewer children is clearer and less noisy than a class with many children.
An ordered corridor and hall make it easier for your child with CVI to find his way around. Pay attention also to the walls and floor. Muted, plain colours will make it less stressful for him to look at things.
Go past the school when the children are playing outside. Is there supervision in the schoolyard? Is there a separate area for kindergarteners, or are all the children playing together?

If you come to the conclusion that special education is best for your child, the same questions and comments outlined above apply too.

9.2 Additional support

Most parents with children with CVI receive support and guidance from an institution for people with visual impairment. These institutions have special educational staff who can guide your child at school.

Glossary

Cerebral palsy
Cerebral palsy (CP) is due to a non-progressive brain injury that occurred at a very young age, during pregnancy or birth. Associated complaints include spasticity, involuntary movements and coordination problems. These are due to poor control from the brain. As well as posture and movement problems, there may be additional problems such as a delay in intellectual development and speech-language development, learning problems and problems with sight and hearing.

Epilepsy
Epilepsy is a condition characterised by epileptic seizures. These seizures are caused by a sudden, temporary disturbance in the electrical stimulus transfer in the brain. This is a type of short circuit in which large groups of brain cells discharge temporarily and in an uncontrolled manner. There are various causes of epilepsy. It can originate from a shortage of oxygen in the brain prior to or during birth. It can also be due to brain damage following an accident, or metabolic disorders in the brain. Infections such as meningitis or a brain abscess may also cause epilepsy.

Visual field
The visual field is the area that we can take in with one glance if we focus on a single point with one eye.

Fixating
Being able to look at something in a sustained, focused way.

Meningitis
Meningitis is an inflammation of the membranes surrounding the brain and spinal cord. In most cases this is caused by a bacterium or virus.

Oxygen deficiency (asphyxia) around birth
Asphyxia is a situation of temporary oxygen deficiency due to which various organs in the body can sustain damage. The term asphyxia is used in the Netherlands for oxygen deficiency occurring during the pregnancy or birth.

Asphyxia literally means ‘no breathing’. It is more common in children whose birth was difficult and prematurely born babies with a low birth weight.

Brain cells are sensitive to oxygen deficiency. Especially children born after a normal gestation but who suffer from oxygen deficiency during birth, may be subject to cell death in the brain areas important for visual processing. There is then a risk for cerebral visual impairment (CVI). Because asphyxia poses a risk to sight, these children are often seen by the ophthalmologist at an early age.

Prematurity

A premature baby is a baby born more than three weeks too early, so earlier than 37 weeks of pregnancy. An early childbirth with a gestation age of less than or equal to 32 weeks is called extreme prematurity.

Visual acuity/vision

We are referring to visual acuity (or vision) at a distance and near vision. Visual acuity is the capacity to distinguish details and recognise objects at various distances. A normal, sighted eye has a visual acuity of 1.0.

A visual acuity of 0.1 means that the smallest detail that someone with normal sight could distinguish at ten metres is only visible at one metre for a person with a visual acuity of 0.1. This person needs to come ten times closer compared to someone with normal vision.

Near vision is the capacity to distinguish symbols from each other at reading distance.

A baby can see right after birth, but its visual acuity still has to develop. After birth, a baby sees fewer details and sees best at a short distance. After around six weeks, the baby will be able to recognise facial contours and facial patterns as well as distinguish colours. Visual capacity is fully developed by around six to seven years of age.

Further reading and viewing

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Dutch Facebook group for parents of children with CVI: register via cvikinderen@gmail.com

Facebook group Wonderbaby CVI: wonderbaby.org

Addresses

for questions about visual (and multiple) disabilities, you can contact:

Bartiméus
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Telephone: 035 6985711
Website: www.visio.org

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