



Visual impairment and occupational therapy

The best of both: working together to support children with visual impairment and additional complex needs

A series of leaflets exploring ways that the QTVI (Qualified Teacher of Visually Impaired children) and other professionals can achieve an effective working relationship together and ensure the best outcome for children with special requirements.

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“The team”

A child with a combination of disabilities is likely to receive continued support from several agencies, each to address a medical, educational, therapeutic or social need. Each supporting professional will have their own expertise, priorities, methods of working and aims for the child.

In this series of leaflets we look at the above scenario and explore ways that the QTVI can support effective team work with other professionals. We aim to discover how good communication and joint working can help to:

- eliminate seemingly conflicting or confusing practice for both professionals and parents
- avoid, or solve, practical problems
- co-ordinate working practice, aims and targets to ensure the best possible outcome for the child.

Other titles in the series include:

- Visual impairment and physiotherapy
- Visual impairment and orthoptics (clinical and functional vision assessment)
- Visual impairment and speech and language therapy
- Visual impairment and specific medical needs and medication.



How the occupational therapist and QTVI can achieve the “best of both”

This leaflet explores the roles of the occupational therapist (OT) and the QTVI in their joint working with children who have MDVI (multiple disabilities including visual impairment).

These professionals have a common aim for the children they support: ultimately to enable the children to access activities of daily life appropriate to their age and environment. Activities include independent living skills, inclusion in family life and incidental learning, education in school and interaction with their peer group. Their support of a child with a visual impairment will differ in its focus and delivery. However, there may be some instances where intervention overlaps. It is helpful for the OT and QTVI to communicate so that duplication is avoided (eg both supplying the same piece of equipment), skills are taught in a consistent way and communications to parents and others are delivered in a cohesive and joined-up manner.

The role of the QTVI focuses on the child's learning and development

The QTVI:

- works with a child to optimise remaining vision, where appropriate, and develop other senses to facilitate learning
- provides or adapts materials and teaches strategies to help the child overcome problems associated with sight loss, so that developmental milestones and educational targets can be achieved
- advises parents and educational settings of strategies and facilities to improve access and inclusion
- aims to reduce any negative impact of the child's visual impairment as far as possible.

The role of the OT is to enable the child to engage in meaningful and functional activities

Often working closely with the physiotherapist and speech and language therapist, the OT:

- addresses issues of gross and fine motor function, sensory integration dysfunction and motor planning, in relation to the performance of functional tasks (these are special areas of concern for children who have a visual impairment)
- advises on the purchase of specialist equipment, such as crockery and cutlery, moving and handling equipment, furniture and adapted toys
- promotes self-help skills and independence, for example the OT may suggest postural tips and other strategies to improve motor control, such as when eating, drinking, dressing or playing
- may specialise in modifying unhelpful behaviours and addressing sensory integration dysfunction (see "Sensory issues and visual impairment" section).

The impact of visual impairment

Many people consider vision to be the most important sense. It has often been stated that we acquire 80 per cent of information through our eyes. Most successful blind adults would disagree! However, vision does allow us to take in a lot of information very quickly – "A picture paints a thousand words". Vision can also be considered to be the "confirming" sense. We may sense something, such as an insect on our skin, the sound of footsteps, or the smell of cooking and then look to confirm what it is.

A severe or complete visual loss will almost inevitably cause delay or difficulties in meeting developmental milestones. These include communication and language, social interaction, independent living skills, play and learning. Many children are unable to achieve the same level of competence within a similar time frame as their sighted peers.

When a child has additional complex needs, access to learning is severely compromised. Some children may never progress beyond the very earliest stages of development. In this case, "independence" may mean co-operating with dressing by straightening an arm in a sleeve; "communication" by turning away from an unwanted spoonful of food; or "learning" by gaining some understanding of the immediate environment and how to relate to it.

Children with complex needs do not have the same access to incidental learning as their sighted, able peers. They need help to achieve the basic life skills that most of us take for granted. For example, in order to eat and drink independently some children will require a high level of support from a multi-disciplinary team.

The skills of eating and drinking rely on having good hand-eye co-ordination, motor control and ability to chew and swallow, but this is not all. Motivation to eat is not just driven by hunger, but by the sensory experience food gives us. We associate the look, texture and smell of food with its flavour. We learn to look forward to foods that taste, smell and feel nice. Children whose early feeding experiences have been unpleasant due to physical or sensory issues are more likely to have ongoing problems with food and independent eating.

Sensory issues and visual impairment

Children with severe or complete sight loss are at increased risk of having an imbalance of sensory responses, known as sensory integration dysfunction (SID). In our experience, this condition seems to occur more frequently with certain causes of visual impairment, including optic nerve hypoplasia, cerebral visual impairment (CVI), and CHARGE Syndrome. Having additional sensory, physical or learning disabilities increases the risk of SID even more.

What does sensory integration mean?

Sensory integration is a term used to describe the way we process and modulate information from our senses. Normally we are aware of the well-known “five senses” – sight, hearing, touch, smell and taste – as we go about our daily lives. Sometimes we experience an unpleasant sensory shock that may temporarily overwhelm us, such as a particularly unpleasant smell, the sound of fingernails scraping on a blackboard, an irresistible itch or the pain of a wasp sting. Mostly our senses remain in balance and work well together. We may hear a sound and look to see what it is. We often choose a piece of fruit, such as a mango or pineapple, by looking at its condition then smelling to confirm its ripeness. We are not normally aware of any particular sense overriding, or being out of sync with the others. This is known as modulation; which is the ability to respond “just right” to a sensory experience, ie to neither over nor under react.



The “hidden” senses

Less obvious are the senses that help us understand and manage our bodies in relation to our environment. These are the vestibular senses (balance and equilibrium) and proprioception (the feedback from muscles and joints). These senses are at work all the time, informing us of where we are in space. We may only be aware of them when our normal environment changes, such as being upside down on a roller-coaster ride, or the different effects of pressure and gravity we experience when standing in deep water.

What is sensory integration dysfunction, and why are severely visually impaired children at greater risk?

Living without a major sense like vision can throw the other senses out of balance. Many children with a severe visual impairment adapt well and learn to use other senses more effectively.

Sensory integration dysfunction is when the senses are out of balance, to the extent that they adversely impact on everyday life. For some children this may mean that one sense will “knock out” another. It is not uncommon to see a child with CVI “switch off” visually as soon as they hear a sound. Another child might notice an object, but look away while reaching or exploring with their hands.



In a more complex form SID is characterised by unusually high or low levels of arousal in response to sensory input. It can affect one or more senses. Examples may include hypersensitivity (being over-sensitive) to certain movements, sounds or textures (including “tactile defensiveness” and “selectiveness”).

Other children may be hypo-sensitive (under-reactive senses). These children will often seek more intense sensory input. They might self-injure, spin round in circles, stare at the sun or create a noise that no one else can tolerate.

Some children may show a mixed pattern of over and under reaction in all the sensory systems.

Sometimes extreme actions are a way of coping with unwanted sensations that are beyond the child’s control. Self-inflicted pain or making a loud noise are actions that a child can control and have the desired effect of blocking out everything else.

Functional actions

However, from the perception of a QTVI, not all the “unusual” behaviours of children with a severe visual impairment may be due to SID. Some actions are functional. Side to side movements can facilitate sound or echo location. Clicking, stamping, shouting and clapping also provide important feedback when travelling through different environments. Some children with CVI move constantly because they can only see objects in motion (the same effect is achieved when the observer moves in relation to stationary objects). It is important that this is understood by all supporting adults, so that children are not discouraged from using strategies that help them.

Co-operative problem solving

A recent discussion between the OT and QTVI supporting a group of children with severe visual impairment in a Special School helped to clarify the reasons for some unusual behaviours. Understanding these issues from both the VI and the OT perspective proved really helpful when working out some strategies to help the children concerned. These are described below.



Katie

Katie, aged six, rocks constantly when she is sitting. She also rocks from one foot to the other when standing and walking. The OT explained this from her perspective:

Sighted people get all the vestibular stimulation they need during rhythmic and confident forward movement, eg brisk walking. A blind child will often seek vestibular stimulation, but cannot walk with the same confidence and rhythm. Rocking from one foot to the other, or rocking while seated gives the same vestibular effect but with a stable base from which to move.

Rocking is also comforting, as new parents, pacing the bedroom floor with a crying baby, at 3.00am will verify! Adults in distress will often rock too. Sometimes rocking may be a way to alleviate boredom – after all, a blind child can't sit and watch the world go by. Equally, they can't observe that other people don't rock!

What can we do about it?

The OT pointed out that if we can identify how a child benefits from a particular action, ie “what do they get out of it?”, then we may be able to replace it with an alternative that gives the same benefit, but is more socially acceptable.

Katie's teacher has established a daily dance session at the start of the school day. Katie now gets the stimulation she seeks, but in an acceptable way. Since starting the dance sessions, her rocking has decreased, both in frequency and intensity.

Here are some other examples:

Paul

Paul has CHARGE syndrome. He used to spend playtime spinning round on one foot, wearing out the soles of his shoes within no time! The school staff helped and encouraged Paul to use the play apparatus. Now he enjoys swinging, climbing and jumping every day. He has completely stopped spinning and is much happier at playtime.

Aarti

Aarti has profound learning difficulties. She is very difficult to motivate and only the strongest stimuli will evoke a response from her. Aarti has some self-stimulatory behaviours including breath-holding and hyperventilating. These behaviours are alleviated when she is provided with stimulating tactile objects, such as a scrubbing brush, crackly plastic and a vibrating bumble ball. Aarti benefits from a weekly movement session with her OT in the soft play room. She has also started a “brushing” programme (see below).



Mary

Mary, aged two, could not control the continuous athetoid or slow writhing movements of her body, head and limbs. It was impossible for her to focus on a visual stimulus. The QTVI made a joint visit with Mary’s OT who wrapped Mary tightly in a blanket until she was still and relaxed. She then slowly released one arm, keeping the rest of Mary’s body immobilised. Mary remained relaxed and was then able to focus on the light and reach towards it.

Deep pressure can have a beneficial effect for children with motor dysfunction, like Mary. It is also known to have a calming effect, and can help some to alleviate distress caused by sensitivity to other stimuli. The OT will sometimes suggest the use of a weighted blanket which has proved effective in many cases.

For some children a deep pressure brushing programme can help. Using a special brush and applying deep pressure through the arms, legs and back, the sensory reactions experienced by individual children can be modulated from over or under reacting to sensory input. Brushing can be used to modulate all the senses, including vestibular and proprioception. Brushing can help to reduce over reaction to tactile input for a blind child who is reluctant to touch and explore. It can “wake up” the limbs so that a child is able to move them more purposefully. It can enhance the sense of touch and enable a child to access tactile information. Brushing can also have a calming effect on children whose sensory hypersensitivity is causing them distress. This should be done as part of a structured programme, which the OT and QTVI will advise on.

These are just a few examples to show that the QTVI and OT can work together for the greater benefit of the children with whom they work.

Conclusion

The aims of the QTVI and OT, and aspects of their support are often similar. However, when they discuss children with whom they both work, from the different perspectives of “VI” and “OT”, it soon becomes evident that their background knowledge is very different.

The combined knowledge and experience of these two professionals working together helps both parties achieve a greater understanding of the child’s development, disabilities and needs. Together they can promote a learning programme that has more impact and ensures “the best of both” for the children they support.



Insight magazine

Inspirational and practical information on the education, health and wellbeing of **children and young people** with visual impairment, including those with complex needs. Parents now receive **Insight** free when they become RNIB Members. **Insight** is also now available free to VIEW members! For details, call **0303 1234 5555** and quote “Insight offer”.

