



What is vestibular rehabilitation in children?



Vestibular rehabilitation

Paediatric vestibular rehabilitation refers to the assessment and treatment of balance disorders in children. The assessment includes tests of balance or postural control, motor skills and functional mobility, oculomotor function (eye movement) and motion sensitivity.

However, the assessment not only focuses on the vestibular system. Because children are still growing and developing their balance right up to their mid-teens, the assessment also focuses on how their vision and proprioceptive systems are also developing. This is because for balance development children depend on these three systems (vestibular, visual, proprioceptive systems) developing, working and communicating well with each other.

What to expect?

For children under 4 years of age, assessment includes standardised tests of cranial nerve function, posture, quality and quantity of movements, muscle tone, reflexes and motor skills. Within this assessment are tests of the vestibular, visual and proprioceptive systems.

For children over 4 years of age, assessment includes standardised tests of vestibular function including tests of gaze stability, balance (static and dynamic) and motor skills as well as age appropriate assessment of the visual and proprioceptive systems.

The three principles of vestibular rehabilitation are: adaptation, habituation and substitution, Which principle is applied to rehabilitation depends on the child's symptoms, assessment findings, nature of vestibular dysfunction and the integrity of the other sensory systems. This is why a thorough specialised assessment with a Paediatric Physiotherapist who is certified in vestibular rehabilitation is so important so that the rehabilitation process is individualised and tailored to your child and so your child's goals can be more effectively and efficiently met.

What a parent should expect from assessment and rehabilitation very much depends on the age of the child. For all children, there will first be a parent interview for relevant information gathering and to ascertain parent concerns, priorities, goals. For the younger child, the assessment is very much play based and child led and there is very little hands on rehabilitation which is in line with how children learn best and current best practice in paediatric rehabilitation. Paediatric rehabilitation should be child led, enjoyable for the child and importantly be practiced in their home environment for maximum carryover with their primary caregivers with the guidance of a paediatric physiotherapist prescribed home programme. For the older child, the assessment includes more formal tests of oculomotor function, vestibular function, muscle strength, coordination, agility, motor skills which are only performed within the tolerance levels of the child. For all children the rehabilitation and home programme is goals focused.

The focus of rehabilitation including the home programme can focus on:

- Improving balance and safety
- Improving stable gaze and symptoms of dizziness
- Improving tolerance of positions and motions the child tends to avoid
- Improving motor skills
- Improving adaptive responses to sensory input

Who can Benefit?

Children who have balance problems, restricted physical activity and motor developmental delay due to the following can benefit from this service:

Dizziness or altered spatial awareness

Sensation of spinning (vertigo)

Postural control issues such as leaning/tilt, stumbling, clinging to parent, fear of movement, overly cautious, holding onto an object or person to walk or stand still, recurrent falls

Sensorineural hearing loss

Migraine with dizziness

Head injuries

Concussions

Torticollis

Does it work?

There have been studies of the positive effects of vestibular rehabilitation in children on gaze stability, balance and motor skills specifically in the following conditions:

Sensorineural hearing loss

Benign paroxysmal positional vertigo (BPPV)

Dizziness and motion sensitivity

Concussion

Qualifications

Deirdre O' Donoghue at Move Kids Physio is a certified in vestibular rehabilitation having completed training in adult vestibular rehabilitation online with Medbridge. Deirdre has attended extensive training in Paediatric Vestibular Management having completed a two day training course in Paediatric Vestibular Management in Alder Hey Children's Hospital Liverpool, a two day webinar in Pediatric Vestibular Rehabilitation with Ms Ingrid Bruekner, Specialist Vestibular Physical Therapist and a two day conference in Paediatric Vestibular Dysfunction, Testing and Rehabilitation with Boston Children's Hospital.

Deirdre has also established a referral link with the Audiovestibular Department in Alder Hey Children's Hospital in the event she feels your child requires further specialist testing and medical management of their condition. If you would like to book a consultation with Deirdre please send an email to movekidsphysio@outlook.com and/or go to www.movekidsphysio.com/services for more information around assessment and follow up.

Reference

Rine, RM (2018). Vestibular Rehabilitation for Children. Semin Hearing 39(3): 334-344. Available from: Contemporary Concepts in Pediatric Vestibular Assessment and Management: Vestibular Rehabilitation for Children - PMC (nih.gov) (accessed 15 May 2023).