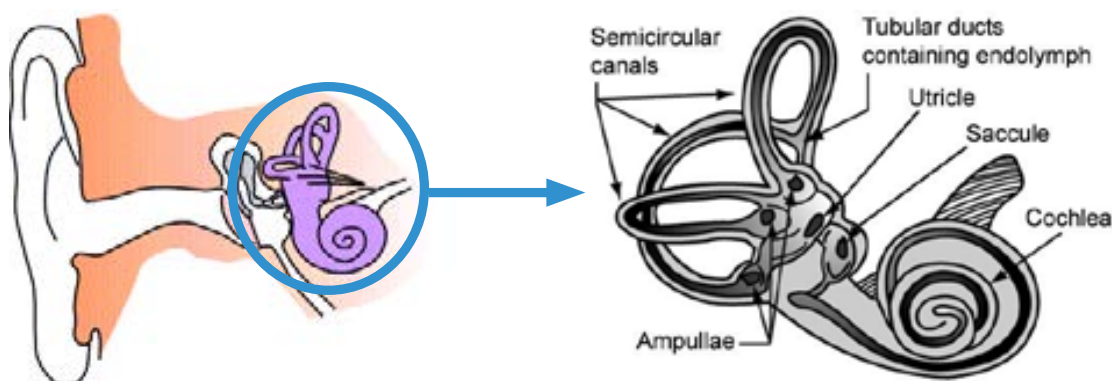


Patient information factsheet

Vestibular disorders in children

We have written this factsheet to give you more information about vestibular disorders in children. It explains what vestibular disorders are, how to spot the signs of a vestibular disorder and the treatment options we may offer your child. We hope it will help to answer some of the questions you may have. If you have any further questions or concerns, please speak to a member of our team.

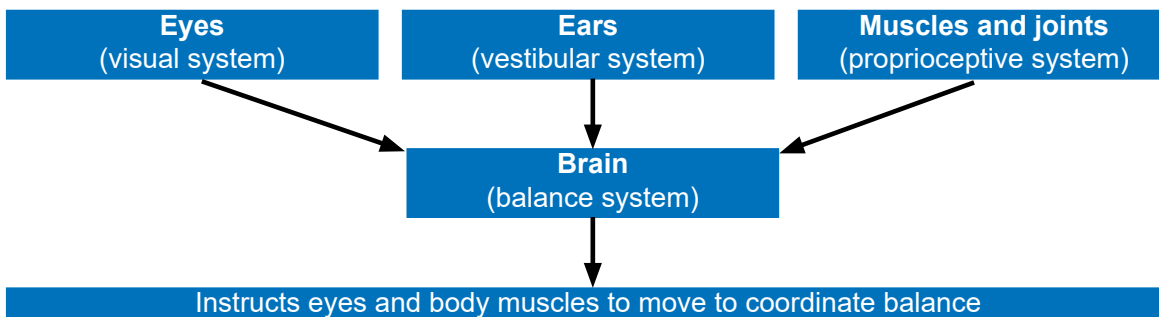
What is the vestibular system?



The vestibular system is located in the inner ears. It is involved in the development of normal movement reactions and balance. It is made up of two main parts:

- the semicircular canals (these detect movement in multiple directions)
- the otolith organs (the utricle and saccule) (these detect changes in height)

The information detected by these structures is sent to the balance system in the brain. The balance system also receives information from the eyes (visual system), and sensors in the muscles and joints in the body (proprioceptive system). The information from the vestibular, visual and proprioceptive systems is used to adjust the muscles, joints and eyes to keep your balance and vision steady. The balance system is fully mature by the time a child is six years old.



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What are vestibular disorders?

If there is a problem with the vestibular system, the brain may not receive enough information for the balance system to work normally and vestibular disorders (balance problems) may occur.

What causes vestibular disorders in children?

There can be many causes of vestibular disorders in children, including:

- ear infections
- hearing loss that is present from birth
- genetic conditions
- problems at birth (for example, reduced oxygen)
- head trauma (for example, car accidents or sports injuries)

What are the symptoms of vestibular disorders?

The most common symptoms of vestibular disorders in children are:

- vertigo (a feeling of movement or spinning)
- dizziness
- imbalance
- delayed development of movements (for example, sitting up or walking)
- slower achievement of milestones (for example, riding a bike, swimming or climbing stairs)
- problems with vision when moving their head
- a dislike of busy visual environments (for example, crowded areas, patterned carpets or patterned walls)

Dizziness

The term dizziness can mean different things to different people. It can be used to describe:

- a spinning sensation
- a falling sensation
- light-headedness
- a general off-balance feeling

Vertigo

Vertigo is the sensation that you or everything around you is moving. Very young children who cannot describe what they are feeling may display symptoms of vertigo by clinging to their parent or guardian, refusing to stand up, or falling asleep. Older children may say that 'the house is moving' or 'I am falling'. For some children, the sensation of vertigo can be associated with:

- nausea (feeling sick) or vomiting (being sick)
- a loss of appetite
- abdominal pain (they may say that their tummy hurts)
- headaches

What are the most common childhood vestibular disorders?

Benign paroxysmal vertigo of childhood (BPVc)

BPVc is a common cause of recurrent short episodes of dizziness in children. Children with BPVc may experience some of the following symptoms:

- vertigo
- abnormal eye movements
- nausea or vomiting
- a sensitivity to movement, sound or light
- poor coordination of limbs (legs and arms)
- difficulty maintaining balance (they may suddenly fall, or cling onto a person or reach for something for support)

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Children with this condition often feel better after a sleep. BPVc episodes usually only last a few minutes and once an episode is over, children with BPVc are likely to behave normally again.

Migraine

Migraine can be associated with BPVc. In younger children (under the age of five), migraine usually presents as BPVc, but it can sometimes present as benign paroxysmal torticollis (recurrent spells of tilting the head to one side). Migraine episodes usually only last around 10 minutes, but they can sometimes be longer. Children with migraine may also experience other symptoms of dizziness, look pale and have a lack of muscle control.

In older children or teenagers, migraine may take the more recognised form of a headache, dizziness, or a dislike of lights and loud sounds. Your child may describe seeing patterns or flashing lights in their vision. Migraines can be triggered by changes in hormone levels, which is why they are more common in children and teenagers going through puberty.

Vestibular neuritis

Vestibular neuritis is inflammation of the vestibular nerve (the nerve in the inner ear that sends messages to the brain). It can cause dizziness and will often subside over a few weeks.

Labyrinthitis

Symptoms of labyrinthitis are similar to those of neuritis. However, labyrinthitis can also cause ear-related symptoms, such as hearing loss and tinnitus (noises in the ear).

Glue ear

Glue ear is where the empty middle part of the ear canal fills up with fluid. This can impact a child's balance if it occurs during an important stage of their development, such as when they are learning to walk. Children with this condition may be unsteady on their feet or be described as clumsy. Glue ear usually clears up within three months and a child's balance often improves once it clears.

Permanent hearing loss (sensori-neural hearing loss)

Some children who are born with a permanent hearing loss may experience vestibular problems, such as dizziness and difficulties with maintaining balance, if their vestibular organ is damaged.

Ototoxicity

Certain medications (known as ototoxic medications) can damage the balance structures in the ear. This can cause dizziness and difficulties with maintaining balance. It can also cause hearing loss.

Benign paroxysmal positional vertigo (BPPV)

BPPV causes short bursts of intense dizziness or vertigo when the body or head is placed in certain positions. It occurs in people of all ages but is more common in adults. When a child has BPPV, it is usually caused by head trauma.

Will a vestibular disorder affect my child's development?

If a vestibular disorder occurs early in childhood, it can slow down a child's development of balance, coordination and fine motor skills, such as sitting unsupported, standing and walking. It can also affect a child's vestibulo-ocular reflex (VOR) (a reflex that is used to keep your vision still when you move your head). An impaired VOR can affect a child's ability to keep up with their peers at school, as stable vision is important for learning to read and write.

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How are vestibular disorders treated?

The treatment we recommend will depend on the cause of your child's balance problem. Some children may benefit from performing specialist exercises to improve their balance, known as vestibular rehabilitation. If your child is suitable for vestibular rehabilitation, we will provide them with a tailored exercise programme that they can complete at home. The exercises will be based on your child's age, interests and level of understanding. Exercises may include:

- bouncing on a gym ball
- looking around for pictures stuck on a wall
- walking around and looking for items
- walking around a fun obstacle course
- catching and throwing a ball against a wall

The aim of the exercises is to help your child's brain learn to adapt to the new information coming from their impaired vestibular system. Performing these exercises can also help improve your child's learning ability, development, balance and self-confidence.

Children typically respond more quickly to these exercises than adults because of their brain's ability to learn. Children also tend to be less fearful of the movements than adults.

It is important that all care givers, including teachers, support and encourage your child to carry out the exercise programme.

Contact us

If you have any questions or concerns, please contact us.

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Useful links

www.ndcs.org.uk/information-and-support/childhood-deafness/deaf-children-and-balance

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For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit **www.uhs.nhs.uk/additionalsupport**