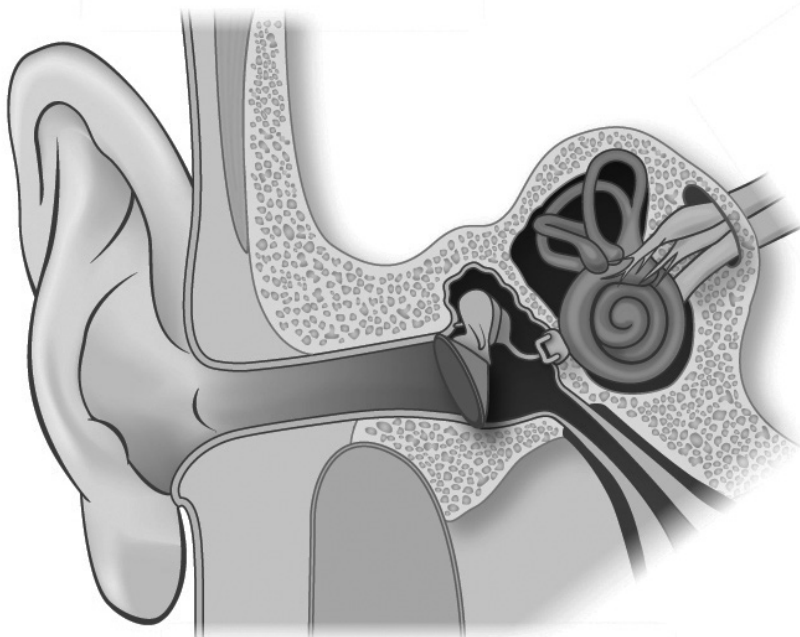


Inner Ear Disorders

Information for patients and families



Read this booklet to learn about:

- what are inner ear disorders
- possible symptoms
- tests you may need
- treatment options



About inner ear disorders

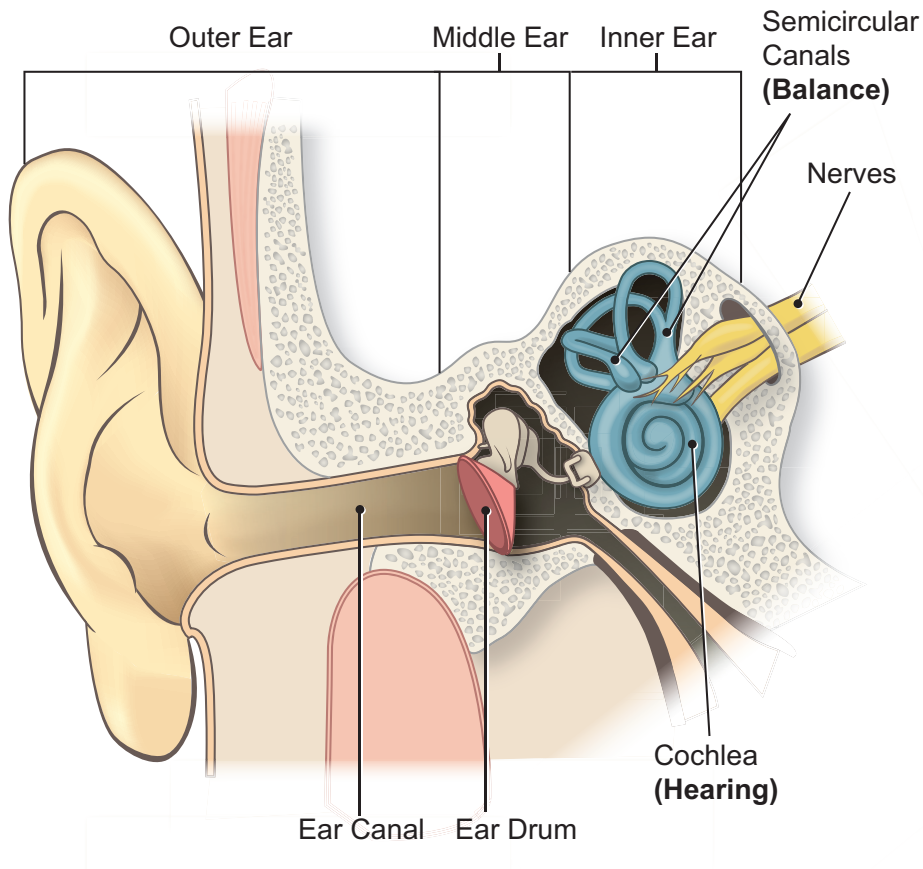
How does the inner ear help control my balance?

Your body needs your ears, your eyes, and your muscles and joints to stay balanced.

Your **inner ear** plays an important part in keeping you balanced. Both of your inner ears:

1. Have a “balance organ” with receptors that sense when your head moves. Other receptors in your inner ear sense gravity and when you speed up and slow down.
2. These receptors know when your head turns and when it is moving in a straight line (like when you are walking).
3. When your inner ears notice these types of head movements, they tell your brain to let you know which direction you are moving.
4. Your brain then sends this information to your eyes. This keeps your vision in focus even when your head is moving.

Parts of the ear



What symptoms may I have?

Some people have inner ear problems that affect their balance. Sometimes, it could mean that one, or both of your inner ears have stopped sending the right signals to your brain.

While not everyone will have the symptoms of an inner ear problem, the most everyday symptoms are:

- changes in your hearing
- vertigo
- dizziness
- not being able to stay balanced
- problems seeing

Changes in your hearing

- Your hearing may be normal one day and then you may have trouble hearing sounds clearly on other days
- You may have lost some or a large amount of hearing
- You may have “tinnitus” (you hear ringing, buzzing, roaring, whooshing or other noises)
- Your ears are easily hurt by loud sounds such as bells, whistles, and alarms (this is called hyperacusis)

Vertigo and dizziness

- You may feel like you or the world are spinning or whirling. This is also called **vertigo**.
- You may feel lightheaded, like you are floating, or you may feel a rocking sensation. This is called **dizziness**.
- You may feel like your head is heavy and is being pulled in one direction

Imbalance or unsteadiness

- You may be stumbling or, have trouble walking straight or when turning a corner
- You may feel clumsy or have difficulty with coordination
- You may have a hard time standing up straight and will need to look down to find the ground
- You may walk around with your head bent to the side
- You may need to hold onto things when standing
- You may be very sensitive to changes of the ground surfaces when walking

Vision

- You may have trouble focusing on objects with your eyes
- Words on paper or objects around you may seem to jump, bounce, float or appear doubled
- You may have a hard time seeing well in busy places, such as in crowds and stores
- You may be easily bothered by light or, moving or flickering lights
- If you have night blindness (trouble seeing at night), you may find this becomes worse and that you have trouble walking in the dark

Some other symptoms could be:

- Nausea (feeling like you need to throw up) or vomiting (throwing up)
- Motion sickness
- Pain in the ear
- Feeling of “fullness” in the ears
- Headaches
- Slurred speech (trouble speaking)

What are some causes of inner ear balance problems?

Vestibular Neuritis: An infection and inflammation (swelling) of the inner ear that may happen after a cold or a virus.

Damage to the inner ear because of a head injury.

Meniere's disease: A condition caused when there is too much fluid in the inner ear. You may also have hearing loss and ringing in your ears

Migraine headache: A headache with dizziness.

Benign paroxysmal positional vertigo (BPPV): Happens when crystals inside the inner ear become loose and begin collecting in the semicircular canal at the back of the ear. Certain head movements can cause short vertigo attacks that last for seconds.

Acoustic Neuroma: Inner ear balance problems that are caused by a benign (non-cancerous) tumour.

Ototoxicity: Poisoning to the inner ear from certain intravenous (IV) medicines (medicine put directly into your blood) or some medicine to fight infections that is put directly on your skin.

Though there are many different causes of inner ear balance problems, you should know that there are times when a cause cannot be found.

Diagnosis

What tests are used to diagnose it?

Your doctor will use your medical history and information from your physical exam to choose the right tests for you.

These tests will:

- look at the way your ear works and the structure of your inner ear
- look at the way you brain works and the structure of your brain
- test your balance
- make sure there is nothing else causing your symptoms

You may have to do these tests at our Hearing and Balance Department at the Toronto General Hospital:

- Electronystagmography (ENG or VNG)
- Rotation Tests
- Vestibular Evoked Myogenic Potentials (CO Vemps)
- Hearing Test
- Electrocochleography (ECoG)
- Otoacoustic Emissions (OAE)
- Auditory Brainstem Response (ABR)

Other tests that could be right for you and done at one of the Medical Imaging Departments of the University Health Network may be:

- Magnetic Resonance Imaging (MRI)
- Computerized Tomography (CT)

Treatment options

How are inner ear disorders treated?

Vestibular Rehabilitation

Most people with an inner ear balance disorder do get better. Recent research shows that the best way to get better is to do special exercises to help speed up the way your body keeps its balance.

Your physiotherapist will show you how to do these exercises. **For these exercises to work, you must do them every day for a few minutes each time, 3 to 4 times a day.**

These exercises “re-train” your brain to know and understand signals from your balance system and, at the same time, pass on the information coming from your eyes, arms and legs.

Medications

Medications may also be used to help you if you are feeling dizzy or nauseous (feel like you need to throw up). You may not take this medicine for a long time because it could confuse your body. It could also take you longer to get better.

Important: if you have Meniere’s disease or dizziness from migraines, you will need to take medicines for a long time to help with the symptoms.

Changing your diet

Changing what you eat and drink can help lower the dizziness caused by inner ear problems.

Caffeine, alcohol, and tobacco can all cause you to feel dizzy, or can even cause dizziness if you sometimes have vertigo, balance problems, and light-headedness.

To feel less dizzy or to stop your dizziness:

- have less sugar and salt
- drink enough fluids
- stay away from caffeine
- drink less alcohol

Recovering from a balance disorder can be hard. What should I do to help myself?

There are some things that you can do to feel better:

- Do your vestibular exercises every day or, as much as your doctor or physiotherapist has suggested. These exercises are the most helpful treatment for most inner ear balance problems.
- Try to lower your stress and anxiety
- If you are feeling depressed, talk to your family doctor
- Drink more fluids
- Reduce the amount of caffeine, alcohol, sugar and salt you have

Important:

Inner ear balance symptoms can change from day to day.

Once your doctor knows what is causing your symptoms, you can start a treatment program that is right for you.

For more information about inner ear disorders, or to ask a question:

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