Balance function assessment

You have been referred for balance function assessment at the Audiology Department. This referral was made as you have experienced dizziness or problems with your balance. Our balance clinic is led by audiological scientists; we are not medically trained but are scientists specialising in hearing and balance. The aim of your appointment will be for us to investigate the possible causes of your symptoms.

This leaflet gives you an overview of the balance system and what to expect from your appointment.

Insight into your balance system

Your balance system is very sophisticated. In order for you to balance, your brain needs information from three inputs:

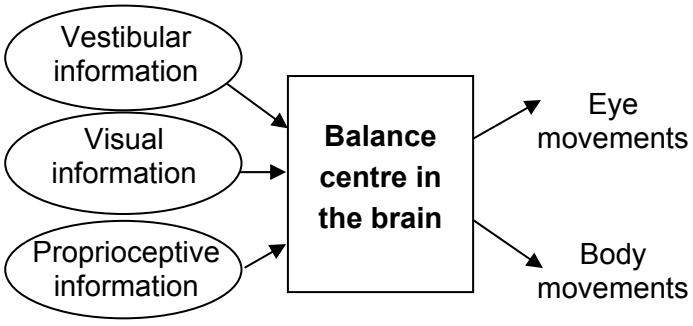
1) The balance organs in each of your ears (*vestibular information*);
2) Your eyes (*visual information*); and
3) The sensors in your joints and muscles (*proprioceptive information*).

Your brain combines all of this information so that it can work out where your head and body are in relation to your surroundings and to help you move around safely by controlling eye and body movements.

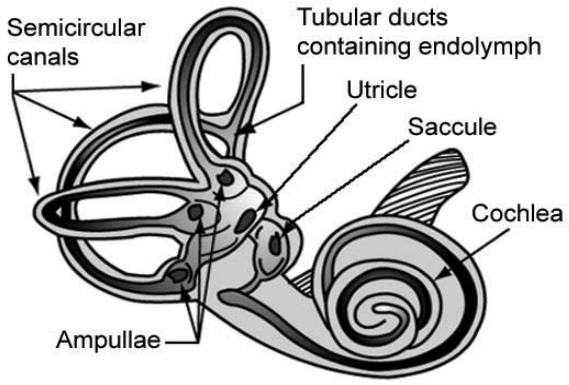
As audiologists we are most interested in the function of your vestibular organs. They are the balance organs, located inside your ears, connected to the organs of hearing (cochlea).

Each balance organ comprises of three semicircular canals and two otolith organs (the utricle and the saccule). Together your balance organs allow you to detect movements of your head such as up and down, rotation, and tilt.

Inputs to your balance system:



The balance organs:



Prior to your appointment:

- Please ensure that both of your ears are completely free of wax. We cannot carry out some of the tests if there is any wax in your ears. Please arrange an appointment with your GP or nurse to check for wax and have it removed if necessary.
- Please do not consume any alcohol or recreational drugs within 48 hours of the appointment as they will affect the test results.
- Please do not take any of the following balance medication within 48 hours of the appointment as they may affect the test results:
  - Prochlorperizine (Stemetil or Buccastem) *(Please ask your GP if you are unsure*
  - Cinnarizine (Stugeron or Stugeron Forte) *which balance medication you take)*
  - Cyclizine (Valoid)
- If you take Betahistine dihydrochloride (Serc), you may continue taking it.

On the day of your balance assessment:

- Take into consideration that an appointment may often last two to three hours (although in some cases it may be shorter).
- Please ensure that you remove all makeup (including eye makeup) as this will interfere with, and in some cases prevent, the recording techniques.
- Please bring a list of any current medications.
- Please wear comfortable, loose clothing and tie back long hair.
- Please ensure that you have someone to accompany you home after the appointment. It is not advisable to drive yourself home.

Your appointment format:

1) Questionnaire: You will be asked to complete this to help us identify the nature of your balance problems and the effect they are having on your life.

2) History: We need to hear a first hand account of the difficulties you have been experiencing so we can work out which tests are necessary.

3) Testing: We will select which assessments are appropriate to help investigate the cause of your balance difficulties (*see next page*).

4) Results: All the test results will be analyzed and we will discuss the results with you. Do remember that in many cases it will not be possible to suggest a cause for balance problems on that day and that some of the test results may need further analysis.

5) Management: Problems affecting the vestibular organs can often be managed effectively and most patients should expect a decrease in their symptoms, if not a full recovery.

Your testing may include:

Please note, all tests will be explained in full at your appointment and will only be carried out with your consent. Do feel free to ask any questions if you are unclear on any issues.

- Tympanometry and acoustic reflexes: To assess your eardrum movement and your ears' reflexes to loud sounds.
- Hearing test: To determine the quietest levels of sounds you can hear in each ear.
- Tests of standing balance: To see how well you stand on the floor or a cushion with your eyes open or closed.
- Bedside vestibular testing: This includes the head impulse test, which involves the audiologist observing your eyes while making small rapid movements with your head; the vibration induced nystagmus test, which involves measuring your eye-movements, with the application of vibration behind your ear; and the headshake test, which involves measuring your eye-movements, after having shaken your head, amongst others.
- Dix-Hallpike: To test for a common cause of dizziness called Benign Paroxysmal Positional Vertigo (BPPV), using a controlled movement from sitting to lying.
- Electronystagmography / videonystagmography: To evaluate your brains control of eye movements, as your eyes and ears depend on each other for good balance and clear vision during head movements. Since we cannot record from the balance organs directly (as they are located deep within the skull), we record your eye movements using one of two techniques: (1) electronystagmography, which uses sticky pads located either side of the eyes and one in the centre of your forehead; or (2) videonystagmography, which uses cameras located in a set of goggles.
- Vestibular-evoked myogenic potentials: To assess and compare the function of your right and left saccules and their nerve pathways. This involves recording muscle activity in your neck or under your eyes (using wires and sticky pads), whilst clicking sounds are played into your ears.
- Caloric test: To assess and compare the function of your right and left semicircular canals and their nerve pathways. This can be the most useful test as it can detect a common cause of dizziness where the two organs are not working at the same level. This test involves gently running water or blowing air into your ears one at a time, for up to a minute, at a warm and then a cool temperature. This test may cause a turning sensation because we are warming or cooling the fluid in one of the balance organs.
  It is important to remember this is a completely normal sensation in people with and without balance problems and it is not linked to any previous dizziness you have experienced, nor will it precipitate another attack of dizziness.

If you have any questions about the testing or the results do feel free to contact us via 0118 322 7238 and the admin team will contact a member of the Balance Team for you.

For further information about the Trust, visit our website www.royalberkshire.nhs.uk

If you would like this leaflet in other languages or formats (e.g. large print, Braille or audio), please contact the Audiology department.

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