

## Ear Conditions

### Otosclerosis

Otosclerosis is one of the most frequent causes of hearing loss in adult life. It affects about 1 in 200 people.

The cause of otosclerosis is still unknown; however there is a hereditary aspect in about 70% of cases. The occurrence of the condition is rare in children less than 15 years old and it usually begins in the teens or early twenties.

Otosclerosis strikes women about twice as often as men, and is often first noticed or may be worsened during pregnancy.

#### What is Otosclerosis?

Otosclerosis is the formation of spongy bone in the middle ear, often causing the auditory ossicles (the three small bones of the middle ear) to become locked in position and less able to pass on sound vibrations through the middle ear to the inner ear. The ossicle mainly involved in otosclerosis is the stirrup or stapes, which becomes fixed to the oval window. Otosclerosis can occur in one or both ears.

#### What are the Symptoms?

An early and common symptom is ringing in the ears, or tinnitus, which is reported in about 50-60% of cases. Tinnitus may be constant or intermittent and can be annoying or even distressing. Expression Audiology offer support and counselling, if needed, to help cope with tinnitus.

The most noticeable symptom of otosclerosis is progressive loss of hearing. In some cases an early period of rapid and continuous deterioration in hearing is followed by a long period of stability. In others, there may be a steady decline in hearing over the years. Some people have a steady decline in hearing with additional, occasional rapid losses such as can occur in pregnancy.

The hearing loss is predominantly of a middle ear or conductive type. The maximum possible conductive hearing loss is 60 to 70 decibels resulting in a moderate to severe hearing loss.

The inner ear can also be affected by otosclerosis, adding an extra sensori-neural (or inner ear) hearing loss to the conductive hearing loss. People affected in this way may develop a severe to profound hearing loss, resulting in a considerable hearing handicap.

A feature of the hearing loss in about 80% of cases is the ability to hear speech better in noisy surroundings. This is unlike sensorineural or nerve deafness where people tend to find it harder to hear in noisy surroundings.

Slight and momentary dizziness after head movements, particularly when bending down, occurs in about 25% of cases.

#### What can be done about Otosclerosis?

Use of a hearing aid in one or both ears may be necessary to help overcome the hearing loss. People with a conductive hearing loss are generally good candidates for successful use of a hearing aid. Your audiologist will be able to advise you whether a hearing aid or aids should be used and which type would be most appropriate.

Surgical techniques can restore hearing by freeing the stirrup (or stapes) and replacing it with grafted body tissue attached to a stainless steel wire or plastic strut. This operation is known as a Stapedectomy. Because of the delicate microsurgery involved it is worth discussing the chances of a successful outcome with your Ear, Nose and Throat Specialist. It is acceptable practice to obtain a second opinion from another Ear, Nose and Throat Specialist before going ahead with a stapedectomy.

Following a stapedectomy, tinnitus may still be present. A successful stapedectomy will restore hearing for perhaps many years. It is not uncommon for the stainless steel wire or the plastic strut replacing the stapes to become dislodged, or for the further development of the otosclerotic bony growth to continue to affect the hearing. As people age, they often develop a sensori-neural (or nerve) hearing loss, which may add to existing hearing difficulties.

#### Practical Advice

Swimming, diving and flying in planes can affect middle ear pressure, particularly if there is a history of middle ear infections or eustachian tube obstruction, but should not aggravate the otosclerosis.

There is a possible link between otosclerosis and calcium levels in the body, because the condition can develop or worsen during pregnancy. A diet rich in calcium, therefore, may help slow the development of otosclerosis.

Otherwise there is no special diet that will either worsen or help prevent the condition. There may also be a link between otosclerosis and oral contraceptives, as some women find their condition deteriorates when these are prescribed.

There is little that can be done to prevent the condition progressing, although protecting your hearing from noise damage is advisable. Using a hearing aid will not aggravate the otosclerosis or damage the hearing. Expression Audiology provide on-going rehabilitative support to help cope with a change in hearing.

For people who have a stapedectomy, contact sports may not be advisable, as a blow over the ear or head would dislodge the stainless steel wire or plastic strut.

#### **Related Information Sheets**

- Our Ears and How We Hear
- Living with Dizziness Tinnitus
- A Guide to Hearing Aid Use

For more information speak to an expert at:



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