



## Mr Glenn Watson

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### OTOSCLEROSIS & STAPEDECTOMY A guide for Mr Watson's patients

During your consultation with Mr Watson, the contents of this pamphlet will be discussed. Reading this pamphlet in your own time will allow you to further understand your condition and the option of Otosclerosis and Stapedectomy, as well as the risks and benefits of this procedure. If, after reading this pamphlet (also obtainable from Mr Watson's website), you do not understand all the risks of your impending operation, please make another appointment with Mr Watson so your questions may be further discussed and clarified prior to proceeding.

#### OTOSCLEROSIS

Otosclerosis is a condition that causes progressive hearing loss. The hearing loss is usually in both ears. Most patients identify hearing loss during their late teenage years or early adulthood.

#### Anatomy of Ear

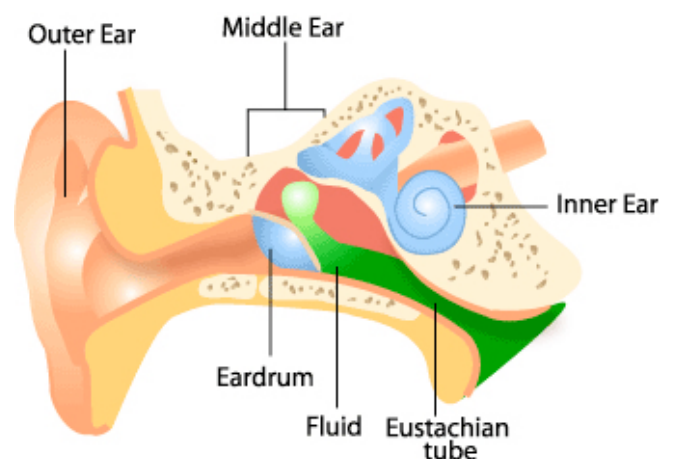
The ear itself is divided into three parts:

##### Outer Ear

The outer ear comprises the ear lobe that leads into an ear canal. This is a dead end canal with the end being the eardrum. The eardrum is semi-transparent like Gladwrap. Wax is made within the ear canal and eventually falls out of the ear canal. Wax acts as a cleaning agent to the ear canal trapping dirt and debris.

Cotton buds should never be used in the ears.

Ear canals are self cleaning and cotton buds will simply push wax into the ear canal and it will be retained within the canal. The wax therefore becomes dirty in the depth of the ear canal.



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## **Middle Ear**

The middle ear is a bony space (room) behind the eardrum. This room has its own air vent which leads to the back of the nose (eustachian tube). This air vent opens and closes with changes in altitude and pressure. This air vent often does not function as well in children as it does in adults. Usually by the approximate age of ten it has improved to normal functioning. The middle ear also contains three small ear bones (Ossicles) that together with the eardrum act as an amplifier of sound presented to the ear.

## **Inner Ear**

The inner ear has two components, one the cochlear for hearing and secondly the semi-circular canals for balance control.

There are three small bones in the middle ear, the space behind the eardrum. These three bones are all connected together by small joints and act as the amplifier of sounds presented to the ear. The first of the three bones, the malleus, is attached to the eardrum. The last of the three bones, the stapes, make attachment to the inner ear lying on a thin tissue membrane called the footplate. Below the footplate is a reservoir of fluid within the inner ear.

We hear by sound waves passing through the ear canal and causing very slight movement of the eardrum. This in turn moves the ear bones. This acts as an amplifier to the sound. With the movement of the third bone, (the stapes), it pushes down on the thin membrane, beneath which lies a reservoir of fluid. As the membrane is depressed, this sets up a wave motion stimulating small receptors or hair cells in the inner ear, sending impulses to the brain. The brain codes this information and interprets it as sounds. This is the way we normally hear. With the condition of otosclerosis, there is new bone growth across this foot plate region, preventing the movement of the fluid beneath. This causes a conductive hearing loss, meaning that the sound is not conducted from the outside of the ear to the inner ear.

My analogy to this condition and operation is that the inner ear is like a lake of still water. When you pat the water in the lake with your hand, ripples or waves are created. This is what happens when the Ossicles push down on the footplate as described. Now imagine the lake is frozen over. No wave can be generated when touching the ice. The operation therefore involves drilling a hole through the ice (footplate), and now a piston is inserted into the hole. In this way, it is like putting your hand through the hole and rippling the water beneath, therefore creating once again a wave. In this way, normal hearing is restored.

This condition is corrected by a hearing aid or an operation called stapedectomy. If the condition deteriorates there can also be spread of bone growth deep within the inner ear. This cannot be fixed by surgery and only a hearing aid is of value. Mr Watson would have discussed with you the options of treatment of otosclerosis, involving all the complications of the surgery.

## Operation of Stapedectomy

A stapedectomy is generally done under a general anaesthetic. Given that this is a very delicate procedure performed under an operative microscope, any medical conditions should be reported to Mr Watson. It is important not to take Aspirin or anti-inflammatory medications, Vitamin E or herbal medications for two weeks prior to the surgery. Smokers should not smoke for at least two weeks prior to the procedure. Any ear infection or upper respiratory tract infection may delay surgery.

The operation itself is performed down the ear canal, or may involve a small incision just in front of the ear canal. The cut will be stitched up at the end of the procedure. The technique of the operation relies on lifting the eardrum up and exposing the middle ear. Following this the stapes is removed and a small hole made in the stapes foot plate. An artificial piston (prosthesis) is then inserted into the hole and a crimping wire connects the piston to the remainder of the bones, namely the incus.

## Possible Complications of this Surgery

All surgical procedures have possible complications. General problems of surgery include pain and discomfort, nausea and vomiting and possible reaction to anaesthetic medications provided. Other potential problems are associated with healing and infection, particularly in patients with other problems such as Diabetes.

### Deafness

About 90% of patients have improved hearing. Approximately 8% of patients have no substantial improvement in hearing. Approximately 2% of patients have worsened hearing. Approximately 1% of patients have total hearing loss in the operated ear.

### Dizziness

Dizziness is quite normal in the first 24 hours after the operation. This may be associated with nausea and perhaps vomiting. The dizziness usually settles a week or so after the operation. Ongoing dizziness is sometimes an indication of a fistula. A fistula is a small hole in the inner ear around the piston area. This usually settles by itself, but on occasions repeat surgery may be necessary to fill a fistula.

### Tinnitus

Tinnitus is noise that is heard within the ear. This can be a roaring noise. It can be short-lived, but sometimes is ongoing.

### Facial nerve paralysis

A very rare complication of this procedure is paralysis of the side of the face. This where the nerve placed alongside the footplate can become damaged. This is a very rare complication.

### Infection and meningitis

This is a very rare complication of the procedure. It is important in the post-operative period, if there is any severe neck stiffness or fevers, to consult your doctor.

### Eardrum perforation

Occasionally on raising the ear drum a hole occurs and needs to be repaired. It is in less than 1% of cases that a hole can occur.

## **Disturbance in taste and mouth dryness**

This can occur in association with damage or cutting of a nerve that supplies the side of the tongue. In some procedures this nerve needs to be divided.

## **Susceptibility to noise**

After the operation of stapedectomy some people have susceptibility to noise. Patients should wear ear protection in noisy work places. Patients undergoing this operation should not dive or fly without consulting their surgeon. In the post-operative period six weeks' recovery should be provided before flying or any heavy lifting. No manual labour or lifting anything more than 10kgs should be done 6 weeks following operation.

During your consultation, Mr Watson will introduce you to an Audiologist. An Audiologist performs hearing tests and also supplies hearing aids. The Audiologist will discuss with you the option of a hearing aid and show you that there are variety's that are available to you. In this way you can consider all options available to you, not just a surgical option. After consideration of both surgical and conservative options, then you can decide which option you would like to proceed with.

## **Post Operative Care**

- The procedure is usually carried out as a day case.
- Please arrange for someone to take you home after the operation. You will not be able to drive.
- Ear pain is usually mild.
- Avoid rigorous nose blowing, coughing or sneezing for about six weeks after the operation.
- No straining, for example, lifting or moving heavy objects. No straining on toilet for six weeks.
- Eat normally on the day after the operation and thereafter. Food is taken as tolerated as after the operation there may be some nausea.
- Air flights should not occur for six weeks after the operation.

Contact your surgeon or doctor if your child becomes unwell after the procedure, for example, ongoing pain, fever greater than 38° or has a persistent discharge (pus) from the ear canal. Note: a discharging ear is treated with ear cleaning and eardrops, not in general oral antibiotics.

Please read this entire document carefully and if there is anything which is not understood, then Mr Watson would like you to reschedule another appointment with him to discuss your concerns or questions.

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