Procedure Information Guide

Surgery to the middle ear to improve hearing (stapedectomy)

Brought to you in association with EIDO Healthcare and endorsed by the Royal College of Surgeons England.

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You should not only depend on the information we have provided when you make any decisions about your treatment. The information is meant to act only as a guide to the treatment you are considering having. Please discuss any questions you may have about your treatment with your treating healthcare professional.

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What is the stapes bone?
The stapes bone is the innermost of the three hearing bones in your middle ear. The bones (ossicles) move together, transferring sound waves from your eardrum (tympanic membrane) to your inner ear (see figure 1). Sometimes the stapes bone can get stuck, and locks in place. This decreases the sound being carried across to your inner ear (conductive hearing loss). The problem is usually caused by otosclerosis, a condition that causes the stapes bone and bony capsule of your inner ear to thicken. The problem can also be caused by brittle bone disease. Your surgeon has recommended a stapedectomy. However, it is your decision to go ahead with the operation or not.

About this document
We understand this can be a stressful time as you deal with different emotions and sometimes have questions after seeing your surgeon. This document will give you a basic understanding about your operation. We tell you about the things you can do to help make the operation a success. It is also important to remember to tell your surgeon about any medicine you are on so he or she can manage this, if necessary. It will also tell you about what to expect after the operation – while in hospital and in the long term. Your surgeon remains the best person to speak to about any questions or concerns you may have about the operation.

How does otosclerosis happen?
Otosclerosis affects only the bones in your ears. The condition usually affects both ears, starting in early adulthood, and can take up to 15 years to cause deafness. Otosclerosis can also affect the bone of your inner ear, preventing the nerves from sending hearing messages to your brain (sensorineural hearing loss). Surgery cannot treat sensorineural hearing loss. You may also get tinnitus (ringing in your ear) and dizziness. Otosclerosis sometimes runs in families. It is more common in women, becoming worse in pregnancy.

What are the benefits of surgery?
Your conductive hearing loss should improve so you will usually not need to wear a hearing aid. However, sensorineural hearing loss tends to get worse over time so you may need to wear a hearing aid in the future.

Are there any alternatives to surgery?
A normal hearing aid or sometimes a special bone-anchored hearing aid can often help you to hear better.

What will happen if I decide not to have the operation?
Your conductive hearing loss will gradually get worse as will any symptoms of tinnitus and dizziness. You will eventually need a hearing aid to hear.

What does the operation involve?
The healthcare team will carry out a number of checks to make sure you have the operation you came in for and on the correct side. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having. The operation is usually performed under a general anaesthetic but a local anaesthetic can be used. Your anaesthetist will discuss the options with you and recommend the best form of anaesthesia for you. You may also have injections of local anaesthetic to help with the pain after the operation. The operation usually takes an hour to 90 minutes and involves replacing the stapes bone with an implant made of metal or plastic (see figure 2).
Your surgeon will perform the operation either through a small cut in front of your ear or through a cut around your ear canal inside your ear. They will lift your eardrum so they can see the ossicles. Your surgeon will remove the top part of the stapes bone, leaving the base or footplate that connects to your inner ear. They will use a drill or laser to make a small hole in the base and then fit the implant, connecting it to the incus. Your surgeon may use a vein graft, usually taken from the back of your hand, to place over the base of the stapes before they attach the implant. They may place a small pack in your ear canal. Your surgeon will discuss this with you.

What should I do about my medicine?
Let your doctor know about all the medicine you take and follow their advice. This includes all blood-thinning medicine as well as herbal and complementary remedies, dietary supplements, and medicine you can buy over the counter.

What can I do to help make the operation a success?
If you smoke, stopping smoking several weeks or more before the operation may reduce your risk of developing complications and will improve your long-term health. Try to maintain a healthy weight. You have a higher risk of developing complications if you are overweight. Regular exercise should help to prepare you for the operation, help you to recover and improve your long-term health. Before you start exercising, ask the healthcare team or your GP for advice.

You can reduce your risk of infection in a surgical wound by keeping warm around the time of the operation. Let the healthcare team know if you feel cold.

What complications can happen?
The healthcare team will try to make the operation as safe as possible but complications can happen. Some of these can be serious and can even cause death. You should ask your doctor if there is anything you do not understand. Your doctor may be able to tell you what the risk of a complication for you is.

1 Complications of anaesthesia
Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

2 General complications of any operation
• Pain. The healthcare team will give you medicine to control the pain and it is important that you take it as you are told to reduce discomfort.
• Bleeding during or after the operation. This may cause the area around your ear to be bruised. Rarely, a blood clot may develop under your skin and you will need another operation to remove it.
• Unsightly scarring of your skin, although stapedectomy wounds usually heal neatly.
• Blood clot in your leg (deep-vein thrombosis – DVT). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. The healthcare team will assess your risk. They will encourage you to get out of bed soon after the operation and may give you injections, medicine, or special stockings to wear. Let the healthcare team know straightaway if you think you might have a DVT.
• Blood clot in your lung (pulmonary embolus), if a blood clot moves through your bloodstream to your lungs. Let the healthcare team know straightaway if you become short of breath, feel pain in your chest or upper back, or if you cough up blood. If you are at home, call an ambulance or go immediately to your nearest casualty unit.

Figure 2
The implant in the middle ear
3 Specific complications of this operation

- Complete loss of hearing if a lot of fluid from your inner ear leaks from around the implant (risk: 2 in 1000). Let your surgeon know straightaway if you get dizziness or your hearing gets worse.
- Worse hearing (risk: less than 3 in 100).
- Dizziness, if fluid from your inner ear leaks from around the implant (risk: less than 2 in 100). You may need another operation.
- Tinnitus. If you already have tinnitus, it usually settles but sometimes you may get new symptoms.
- Change of taste, as the nerve responsible for taste passes over the stapes bone and may be stretched or damaged (risk: 1 in 10). Taste will usually return to normal after a few months.
- Facial weakness, as the facial nerve passes through your middle ear and may be overheated by the drill or laser (risk: less than 1 in 100). You should recover in a few weeks and may need a course of steroids. Permanent weakness can happen if the facial nerve is not in the usual place and gets damaged.
- Infection of the surgical site (wound). Let your surgeon know if you get a discharge from your ear, or your ear becomes red or swells. An infection usually settles with antibiotics.
- Allergic reaction to the pack material, which results in pain, swelling and discharge from your ear. Let your surgeon know if you are allergic to iodine.

How soon will I recover?

• In hospital
After the operation you will be transferred to the recovery area and then to the ward. You may be able to go home the same day. However, your doctor may recommend that you stay a little longer.
If you do go home the same day, a responsible adult should take you home in a car or taxi and stay with you for at least 24 hours. Be near a telephone in case of an emergency.
If you are worried about anything, in hospital or at home, contact the healthcare team. They should be able to reassure you or identify and treat any complications.

• Returning to normal activities
Do not drive, operate machinery or do any potentially dangerous activities (this includes cooking) for at least 24 hours and not until you have fully recovered feeling, movement and co-ordination.
If you had a general anaesthetic or sedation, you should also not sign legal documents or drink alcohol for at least 24 hours.
To reduce the risk of a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been given medicine or need to wear special stockings.
It is not unusual to get mild dizziness for a few days.
Your surgeon will tell you when you can return to normal activities. You should be able to return to work after about two weeks. Do not lift anything heavy or do strenuous exercise.
Do not blow your nose for a few days. Keep your mouth open when you sneeze.
Your surgeon will be able to tell you when it is safe for you to fly.
Protect your ear from water using cotton wool and Vaseline, and do not swim until your surgeon has told you that your ear has healed. This will usually take about 6 weeks but can take longer.
Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, ask the healthcare team or your GP for advice.
Do not drive until your doctor tells you that you can.

• The future
Most people make a good recovery with better hearing. You will need to come back after two to three weeks to have the pack removed.
Otosclerosis can continue and cause further hearing problems.

Summary
Otosclerosis can cause the stapes bone to lock in place, causing conductive hearing loss. A stapedectomy can improve your hearing without the need for a hearing aid.
Surgery is usually safe and effective but complications can happen. You need to know about them to help you to make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

Keep this information leaflet. Use it to help you if you need to talk to the healthcare team.
Acknowledgements
Author: Miss Ruth Capper MD FRCS (ORL-HNS)
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You can access references online at www.aboutmyhealth.org. Use reference ENT13.