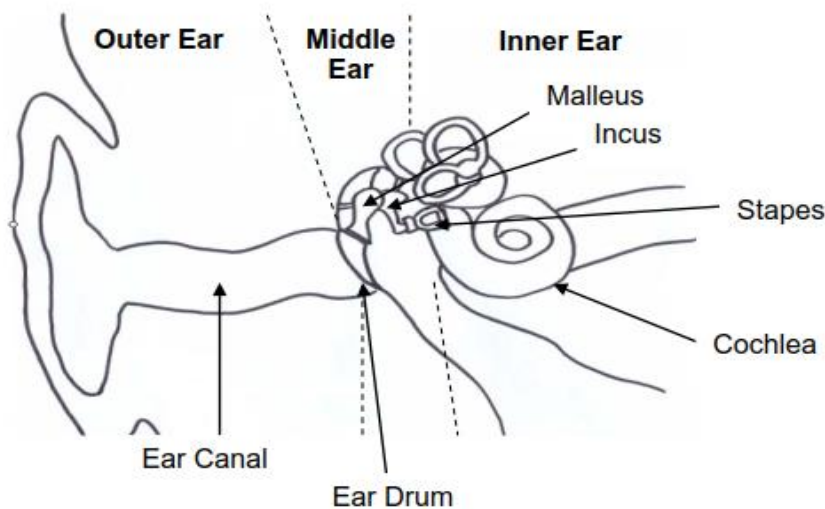




## **PATIENT INFORMATION**

### **How Our Ears Work**

Our ears are divided into three sections, the outer ear, middle ear and inner ear (see diagram below).



When something in our environment makes a sound this creates changes in pressure known as sound waves. When these sound waves reach our ears they are directed into the ear canal.

The sound waves travel to the eardrum and cause it to vibrate. These vibrations are transmitted across the middle ear by 3 small bones called the malleus, incus and stapes. These bones increase the strength of the vibrations and pass them into the cochlea of the inner ear.

The cochlea of the inner ear is filled with fluid and contains thousands of tiny hair cells. The vibrations from the bones in the middle ear cause movement in the fluid. This causes the hair cells to bend. The movement of the hair cells creates a small electrical charge.

These charges travel along the auditory nerve to the brain which recognises them as sound. For an ear to be functioning properly, every stage in this pathway needs to be working.

Hearing loss happens when at least one part of this system is not working as it should.