HEARING LOSS

In order to understand hearing loss, you should first know a little bit about how hearing works. The human ear is divided into 3 parts: the outer, middle, and inner ear. The outer ear consists of the pinna and the ear canal. The middle ear consists of the eardrum, 3 ossicles called the malleus, incus, and stapes, and the Eustachian tube. The inner ear consists of the cochlea, the organs of balance, and the auditory nerve.

Sound is collected by the pinna and transmitted down the ear canal. The sound strikes the eardrum and sets the ossicles into vibration. These vibrations are transmitted to the sensory organ of hearing called the cochlea. The cochlea contains many special cells that respond to different pitches, similar to the keys on a piano keyboard. The information from the cochlea is transmitted along the auditory nerve to the brain to be processed as sound.

There are 3 main types of hearing loss. A conductive hearing loss results from a problem with the outer and/or middle ear. Common causes may be wax occlusion, fluid in the middle ear space (also called otitis media, or “ear infections”), a hole in the eardrum, and malformations or dislocations of the ossicles. Certain structure(s) of the ear may also be malformed or completely absent. These hearing losses are often medically or surgically treatable, depending on the extent of the problem and the age and overall health of the child.

A sensorineural hearing loss is caused by a problem with the cochlea and/or the auditory nerve. Many different things that can cause a sensorineural hearing loss, such as serious illness in a pregnant mother or young child, trauma to the head or ear, exposure to excessive noise, certain medications, and structural malformations. Sensorineural
hearing loss can also be inherited. These hearing losses are not usually medically treatable, and are almost always permanent.

A mixed hearing loss has both a conductive and sensorineural component. In other words, the child has hearing loss from the outer and/or middle ear, and the inner ear. The conductive component may be surgically or medically treatable, however, the sensorineural component is normally not.