

Promontory Anchored Incus Replacement Prosthesis

Researchers at the University of South Florida have invented an auditory prosthesis which restores hearing to individuals who have ossicular discontinuity.

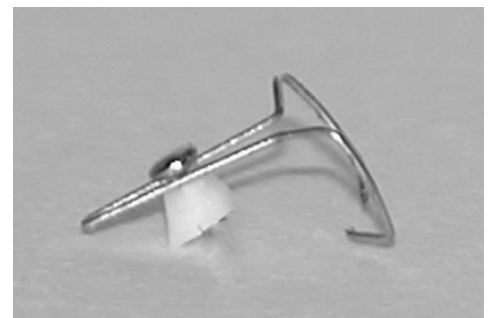
One of the most common causes of hearing loss in younger individuals is ossicular discontinuity, an abnormal separation of the middle ear bones. This may also be caused by a congenital defect, chronic ear infections, or skull trauma. Often this will not heal on its own, requiring reconstructive surgery to implant a prosthesis or cartilage. Cartilage has poor sound conductive properties and can form scar tissue which inhibits success rates. Current prostheses available do not properly bridge the bones within the ear and can also form scar tissue. Surgery to correct ossicular discontinuity is successful just 50% of the time and often requires repeat procedures to attempt to improve the patients' hearing.

USF inventors have created a new inner ear prosthesis to replace the incus in the inner ear, curing ossicular discontinuity. The middle ear prosthesis connects the stapes capitulum to the malleus to restore hearing. A vibratory segment of the prosthesis is suspended under the malleus to reduce the chances that the head of the prosthesis will become trapped between the umbo and the promontory. Furthermore, this prosthesis has an adjustable pivot element to fit the natural contours of the ear properly. This inner ear prosthesis has potential to greatly improve the probability of restoring hearing to those with ossicular discontinuity and decrease the amount of times ear surgery must be repeated.

ADVANTAGES:

- Anchors the prosthesis to the inner wall of the ear
- Adjustable pivoting section follows natural contours of patients' ears
- Improves success of restoring hearing

Auditory Prosthesis for Patients with Discontinuity in the Middle Ear Sound Conductive Mechanism



Side View of the Prosthesis Prototype

Tech ID # 03B090

Patent #: [7,025,785](#)