



Hearing Aids and Cochlear Implants

- Hearing aids – Out of ear assistive hearing device that successfully treats varying degrees of hearing loss, from mild to severe. Most people with hearing loss are candidates for and can benefit from hearing aids, which work by amplifying sound frequencies affected by hearing loss.
- Cochlear Implants – In the ear device implanted in those with a severe to profound hearing loss in most cases, a sensorineural hearing loss that cannot be fixed in any other way than to get surgery. The implant replaces function of the cochlea and the implant works as the cochlea itself.

Waterproof versus Water Resistant

Waterproof:

the device can be submerged under water for long periods of time, without having any of the materials abilities taken away

Water Resistant:

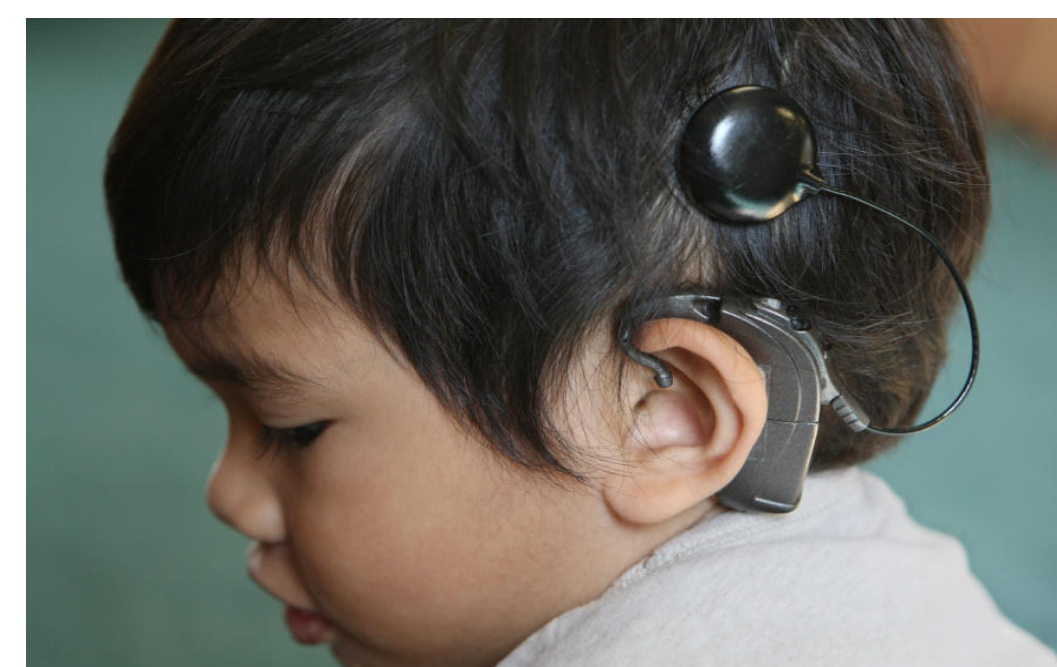
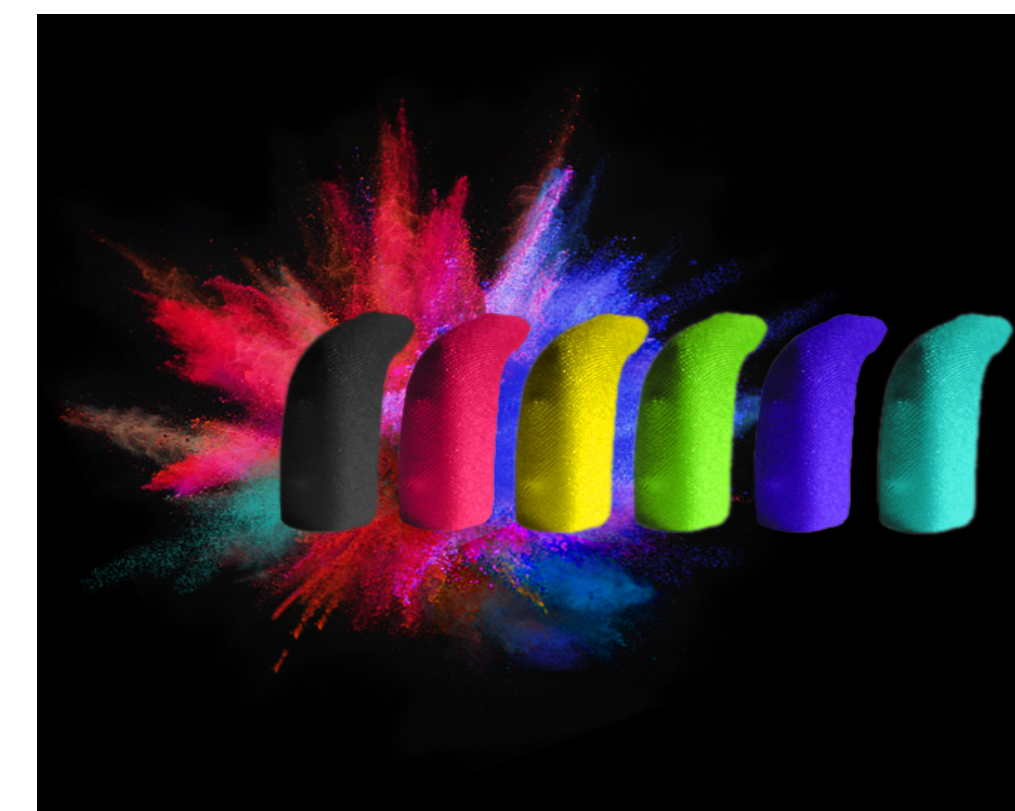
the device can only withhold being submerged in water for a specific amount of time without breaking any of the mechanisms

Current Waterproof Cochlear Implant The Neptune



Hearing Aid and Cochlear Implant Covers

- A cover is placed on the aid or implant to make it dirt or sweat resistant
- The cover helps football, soccer, baseball players, but doesn't support swimmers or specific runners



Neptune Features

Allows for users to feel safer

- Alone
- At night
- At parties
- Swimming

Matches different lifestyles

- Athletes

No mechanisms are given up

- Still fully functional right after coming out of the water

Rechargeable Batteries

- 21 hours of battery before needing to recharge

IP Rating

An IP rating is...

- The first number present in the rating is the liquid resistance
 - Right now, the highest number is 6
- The second number present is the solid resistance
 - Right now, highest number is 8
- The highest IP rating right now that is on the market is 68
 - This can be submerged under one and a half meters of water for thirty minutes

Money and Insurance

- Hearing aids costs range from \$3,000 or above per pair and need to be replaced every 3 to 5 years, depending on the patients' age and condition of the hearing loss
 - It is more commonly found that hearing aids are only covered for children, and not covered for adults, but it depends on the type of insurance
- Cochlear implants cost anywhere \$40,000 to \$100,000, sometimes even higher, plus the costs of doctor's visits and any additional surgeries the user may need.
 - Cochlear implants are more likely to be covered by insurance for all ages, but patients can still be declined to an implant, based off their insurance policy

What do we do now? Why?

- Work with hearing aid manufacturers
 - Look at materials
 - How can we make it fully waterproof?
- Some people are only able to afford hearing aids, or insurance will only cover hearing aids, so we need to make the waterproof aspect available to everyone

References

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