

## The story behind the battery in my hearing aid

Regardless of what some advertisers may claim, rechargeable battery technology in the hearing aid industry is nothing new. Rechargeable batteries have been around for over 30 years, yet most major manufacturers have yet to adopt rechargeable technology? Why?

“All of my personal electronic devices use rechargeable batteries so why doesn’t my hearing aid?”

The short answer is this: **the benefits they offer do not outweigh their real life practical problems.** All of your personal electronics use a much higher voltage, and can therefore employ a rechargeable battery that would destroy a hearing aid circuit. The two most likely candidates for future hearing aid use might be the Silver-Zinc (AgZn) and the Lithium Ion (Li-Ion) rechargeable battery, but for now their voltage is far too high, unsafe, and would burn up a high-quality hearing aid circuit. The NiMH rechargeable battery is available in the proper voltage, but it has major issues, unless you are willing to sacrifice current hearing aid technological advances, performance, stability and battery life.

### NiMH rechargeable battery:

Tao Cui, AuD at GNResound states “There are two main disadvantages of NiMH. One is that the energy density of this technology is low. So for a given battery size, it will not be able to power a hearing aid for anywhere near as long as a zinc air battery of the same size” (Audiology Online, May 2014).

“The other disadvantage of the NiMH battery is that it may have a memory effect when charged and discharged. This reduces the capacity every time the battery is charged or discharged. Since the capacity is not all that high to begin with, this is a double-whammy” (Cui, 2014)

“Furthermore, all rechargeable batteries are worn-out a little bit every time they are charged and discharged. This effect is called **capacity fading** and reduces the so called cycle life of the rechargeable battery. The battery may operate well in the first few months, but then the battery capacity will reduce gradually to an unacceptable level.

“However, if you wish to take advantage of the current high technology in hearing aids then the hearing aid has digital wireless capability, NiMH may cause unstable performance. This is because the capacity is “used up” much earlier than with a zinc air battery during use” (Cui, 2014).

### Zinc Air

Every major manufacturer of hearing aids in the world provides the Zinc Air battery with their product. There are several reasons for this choice. These major players in the hearing industry do not jump on the latest bandwagon. They are looking for the best power source that gives them:

1. Stability
2. Safety

### 3. Performance

It is the small manufacturer that might try to get a marketing foothold that makes exaggerated promises on old technology. As in everything, it pays to be informed.

Source:

Tao Cui, AuD - GNResound