



IMPORTANT BATTERY FACTS

for today's HEARING INSTRUMENTS

There are many factors that affect how long a hearing aid battery lasts.

1 An individual's hearing loss

As severity increases...

Increased amplification
is required



Increasing current

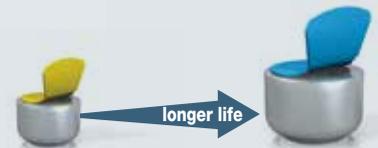


Reducing battery life



2 The battery size

As the physical size of the batteries decrease, the amount of ingredients needed to power the battery also decreases, making the battery life shorter for smaller batteries and longer for bigger batteries.



3 An individual's hearing aid usage

2 things to take into account:

How many days a week
do they wear their hearing aid?



How many hours a day
do they wear their hearing aid?



4 Instrument Differences

Features in today's digital instruments, like:

Premium Features

- FM (looping)
- Generation of sound with tinnitus patients

Wireless / Bluetooth Features

OEM Settings

- low battery warnings can result in perceived short life.

Noise
cancellation



Multi-channel
processing



May reduce
battery life
by **20%**

With and without
interface units



When in use, can
increase the current
up to **300%**, further
reducing battery life

5 Environment



Low Humidity

As humidity is reduced...

- Batteries may dry out, reducing the battery life.
- This can be an issue if: Users are indoors during winter months in northern climates.



High Humidity

As humidity increases...

- Batteries may take on moisture, interfering with the natural discharge expansion, resulting in swelling/leakage and reducing battery life.
- This can be an issue if: Users work outdoors for extended periods in high temp/high humidity areas.



Temperature

As temperature is reduced...

- Hearing aid battery voltage is lowered and reaches functional end point earlier, reducing battery life.
- This can be an issue if individuals are working outside in the winter or in a refrigerated environment.



Altitude

As altitude increases...

- Percentage of Oxygen level in the air is reduced, lowering the hearing aid battery voltage, causing the battery to reach the endpoint earlier and reduces battery life.
- This can be an issue if: Individuals live in areas at high altitude.

6 Expected Ranges of Battery Life

If you must communicate a battery life range to patients, the following ranges should be representative for most hearing aid wearers.

Battery Size	Life Expectancy
10	3-10 days
312	3-12 days
13	6-14 days
675	9-20 days

*Cochlear implant devices normally require a **specialty formulated battery** and they may last as little as **one day**.

The Bottom Line...

There is no one answer that is going to work for all hearing aid wearers. The best way for a patient to understand the battery life that they can expect, is to benchmark their individual battery performance over time.

Also Remember:



After un-tapping a zinc air hearing aid battery, allow at least 1 minute for the battery to air up. The battery voltage will rise to a level high enough to power a hearing instrument, usually 1.3 volts. The battery cell can take up to 24 hours to reach the full 1.45v, but again, this level is not required to operate a hearing instrument.



Always use a fresh hearing aid battery to program a hearing instrument. The programming cycle of a hearing instrument can put high demands on the hearing aid battery, It is equally important to put a fresh battery in the hearing aid before the patient leaves your office. This ensures that the patient will get the full life out of their battery the first time they use their aid.