

# IMPORTANT BATTERY FACTS

*for today's*

# HEARING INSTRUMENTS

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

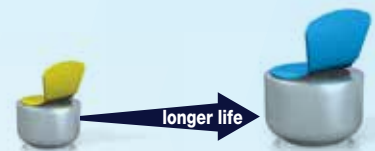
## 1 An individual's hearing loss

*As severity increases...*



## 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

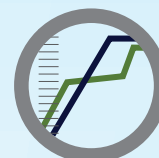
### OEM Settings

- 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*

## Factors that affect battery life (cont.)

### 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
  - Use of wood burning to heat homes
  - Keeping battery in dry aid kits in an already dry environment
  - Intermittent user
  - If normal service life is more than 7 days



#### 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.
  - Live in a non air conditioned environment in high humidity areas
  - Intermittent user
  - If normal service life is more than 7 days



#### 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
  - Flying in a plane when battery is late in discharge

### 6 Expected Ranges of Battery Life

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.***