

## Hearing Aids: Analog and Digital

(an excerpt from the U.S. Food and Drug Administration, Medical Devices, 2010)

**Analog hearing aids** make continuous sound waves louder. These hearing aids essentially amplify all sounds (e.g., speech and noise) in the same way. Some analog hearing aids are programmable. They have a microchip that allows the aid to have settings programmed for different listening environments, such as in a quiet place (like at a library), or in a noisy place (like in a restaurant), or in a large area (like a soccer field). The analog programmable hearing aids can store multiple programs for the various environments.

As the listening environment changes, hearing aid settings may be changed by pushing a button on the hearing aid. Analog hearing aids are becoming less and less common.

**Digital hearing aids** have all the features of analog programmable aids, but they convert sound waves into digital signals and produce an exact duplication of sound. Computer chips in digital hearing aids analyze speech and other environmental sounds. The digital hearing aids allow for more complex processing of sound during the amplification process, which may improve their performance in certain

situations (for example, background noise and whistle reduction). They also have greater flexibility in hearing aid programming so that the sound they transmit can be matched to the needs for a specific pattern of hearing loss. Digital hearing aids also provide multiple program memories. Most individuals who seek hearing help are offered a choice of only digital technology these days.



### Source:

U. S. Food and Drug Administration (2010). Types of hearing aids [online]. Retrieved October 15, 2010. From <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ConsumerProducts/HearingAids/ucm181470.htm>.