

Take away notes from “Evidence-Based Design Leads to Remote Microphone Hearing Instrument Technology,” Steve Hallenbeck, AuD, Jenny Groth, MA (December 12, 2011)

Pinna (external ear) - the part of the ear responsible for shaping acoustic sound properties. The outer ear interacts with sound waves as they approach the cochlea. The effects of sound waves reflecting / absorbing / changing due to this interaction provides important cues for spatial hearing.

Some hearing aid designs utilize the natural pinna shape of the ear to format the sound waves and the microphone is placed in this area. Traditional BTE designs place the microphone above the pinna, losing the frequency and reflection shaping from natural pinna interaction. The differing microphone location (“microphone location effect”) is taken into account during the electroacoustic design.

Other design considerations:

- BTE designs suffer from feedback caused by mechanical or acoustic vibration in the casing
- Wind noise reduction (can be completed through algorithm or microphone location)

Final RM Design:

