University of Southampton

Loudness scaling and the acoustic reflex in adult cochlear implant users

Cullington H E and Hacking C R, Institute of Sound and Vibration Research
University of Southampton, UK

Aim

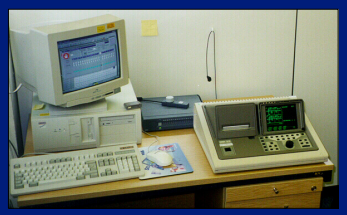
To examine the relationship between the electrically-evoked acoustic reflex threshold (EART) and loudness in adult CI users

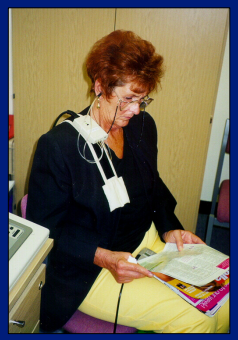
Previous research has shown the EART to be a valuable tool for objectively programming the cochlear implant (Battmer et al, 1990; Spivak and Chute, 1994; Van den Borne et al, 1994; Shallop and Ash, 1995; Hodges et al, 1997)

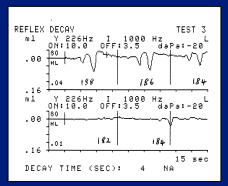
Method

EART measurements were attempted on 6 channels for 16 CI patients. Those with present reflexes took part in loudness scaling procedures on the same channels.

Loudness scaling
Very soft
Soft
OK
Loud
Very loud
Too loud

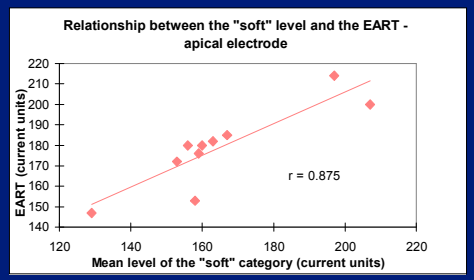




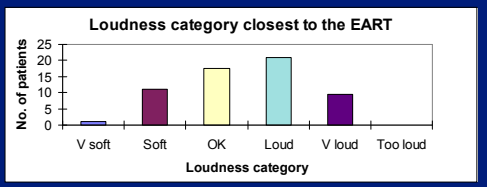


Results

Strong linear association between EART and loudness perception for most electrodes and most loudness categories



Reflex threshold closest to “loud” category in most cases



Reflex Incidence	EART<ULL
63%	93%

Conclusion

The EART provides information for objectively programming a cochlear implant.
It rarely exceeds the ULL and is well correlated with loudness perception.