Pract. oto-rhino-laryng. 1962;24:351

Clinical Masking

E.		de Boer
----	--	---------

Amsterdam

Author's address : Dr. E.de Boer, Wilhelminagasthuis, keel-neus-oorheelkundige afdeling, Amsterdam (Netherlands)

Masking is used to prevent one ear from overhearing a test tone presented at the other ear. When used in the normal way, chances are that the (loud) masking noise applied to the better ear, is overheard by the ear under test (cross-masking). This limits the range where safe determinations of a threshold are possible to some 50 or 60 db. If the masked ear suffers a conduction impairment, the masking sound must be proportionally more intense, so that it is more likely to be overheard. The region of safety is then drastically reduced in size.

According to Hood, presenting masking signals via a hearing-aid type earphone considerably reduces the danger of cross-hearing. For ears with normal conduction pathways the region of safety is at least enlarged to 80 db, while in cases of conduction losses the region is correspondingly wider. In a series of experiments we could corroborate these results.

To profit from the materially enlarged field of applications we built a noise generator for clinical use according to this principle. More can be gained when the masking levels can be chosen to be quite high (110–120 db), in which case one should allow only those frequencies in the masking signal that are really effective in masking the given frequency. Other frequencies should be removed to reduce the apparent loudness as much as possible; they should remain sufficiently strong to mask any harmonic distortion product of the test tone, however.

The generator can be switched to mask the region of 500

1000

1500

2000

or 3000 cps. Its masking level ranges from 50 to 120 db. The masking signal is presented via a miniature earphone and a plastic tube fitting the outer ear canal. The effective isolation between the ears is 80–90 db in healthy people.