HEARING AND DIABETES

Listening to diabetes to live better

Two global social emergencies

DIABETES

Diabetes is a chronic condition characterized by elevated blood glucose levels (hyperglycemia) and is caused by the body's reduced insulin production or inability to use it

382 million people worldwide have diabetes

4 million in Italy

592 million by 2035

HEARING LOSS

Hearing loss is a decrease in hearing ability: a problem involving a reduced perception of sounds and difficulty in understanding speech, especially when whispered and/or in the presence of background noise

590 million people worldwide have hearing loss

more than **7** million in Italy

1.2 billion by 2050

Diabetics are twice as likely (2.15 times) to suffer hearing loss

2.61 times under 60 years

1.51 times over 60 years

Prevalence of hearing loss

44% Diabetics - Type 1

45% Diabetics - Type 2

20% Non-diabetics

A close yet underestimated relationship

Hearing loss is not considered a complication of diabetes and often is not diagnosed or even ignored

Hearing loss in diabetic patients increases the risk of falls, social isolation, and the development of cognitive deficit or depression

Why are they linked?

Diabetes affects the cochlea and causes blood vessel walls thickening

The cochlea is a part of the inner ear, with a spiral structure in which sounds are converted into nerve impulses

! People with diabetes are more sensitive to noise, with a slower "recovery" from injury caused by acoustic trauma

Risk factors

MID-LOW PITCHED FREQUENCIES

- HDL cholesterol below 40 mg/dl **> 2.20** times
- poor general health condition **> 3.55** times

HIGH PITCHED FREQUENCIES

- coronary disease **> 4.39** times
- peripheral neuropathy **> 4.42** times

Diabetes favours *cochleopathy*: diminished hearing due to damage in the inner ear, which loses the ability to convert perceived sound vibrations into nerve impulses

Listening to diabetes

For an early diagnosis

Given the potential negative consequences of untreated hearing loss, hearing must become a regular topic of discussion between diabetic patients and their doctors:

- **inform patients** of the possible impact of diabetes on hearing
- insert **audiometric tests** in the diabetic patient's annual check-up
- monitor **blood glucose changes** in people with hearing loss

For a tailor-made solution

If hearing loss is detected, the most suitable hearing aid must be chosen according to the patient's needs:

- **carefully fit the device** considering the greater sensitivity of diabetics to acoustic trauma (e.g. more elevated thresholds at high frequency)
- **choose suitable materials** taking into account skin infections and other manifestations common in diabetic patients (e.g. non-allergenic earmold material, slimmer behind-the-ear housing of hearing aids, etc.)