

Innovative noise management

AkzoNobel



GOOD PRACTICE

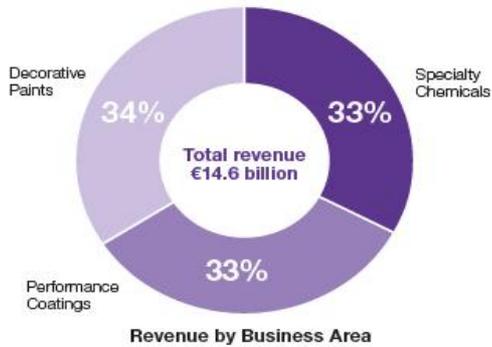
Engaging workers and managers to make a difference

Marianne Willemsen-
Schulpen
Head Medical Dept.
AkzoNobel Sassenheim
Mar 2016

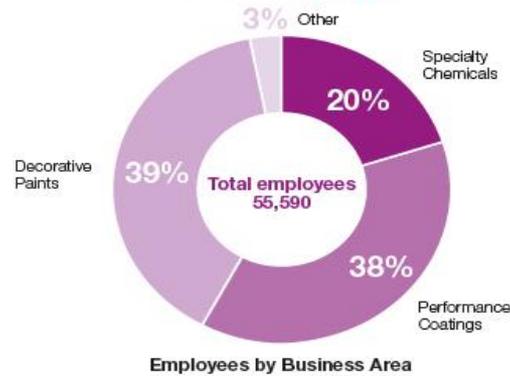
Multinational Coatings & Chemicals

AkzoNobel

Revenue (in billions) €14.6



Employees 55,590

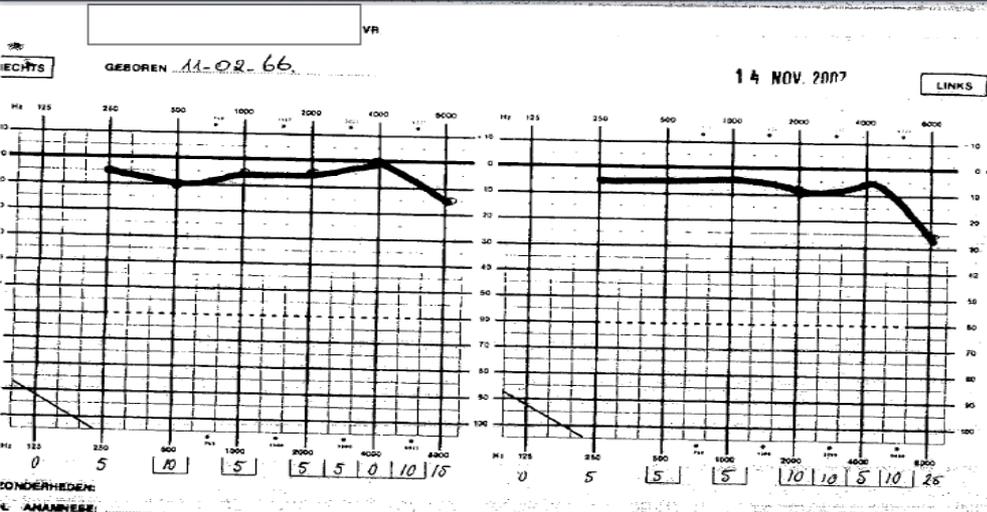




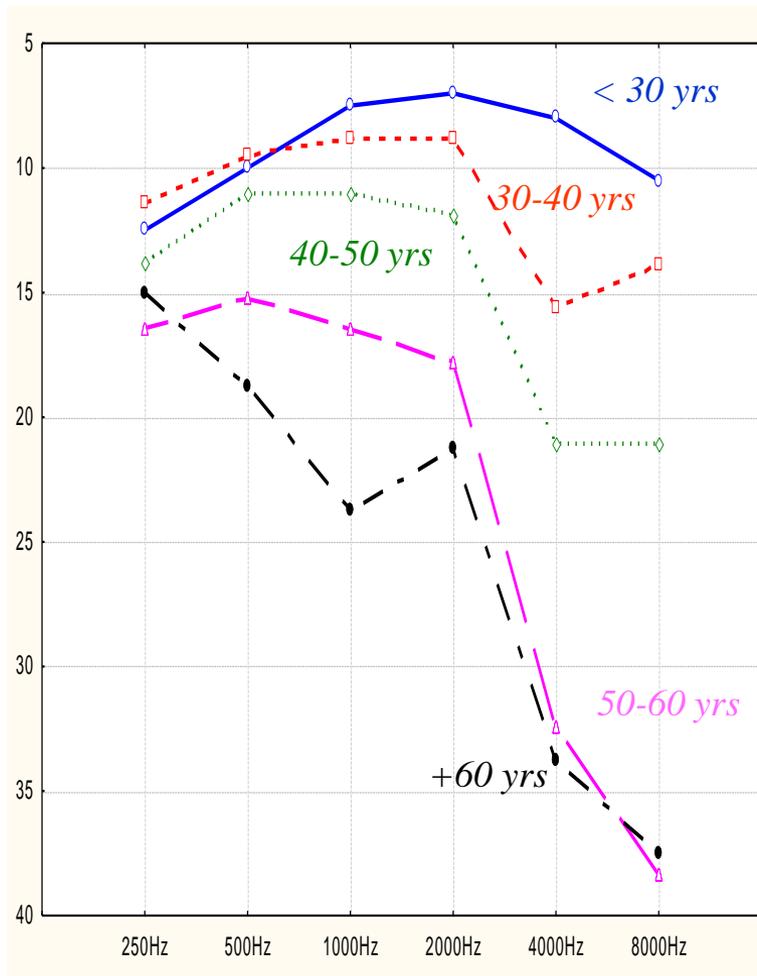
Industrial Hygiene Strategy



Zero Tolerance



Beep-test with headphones
(pure tone audiometry)

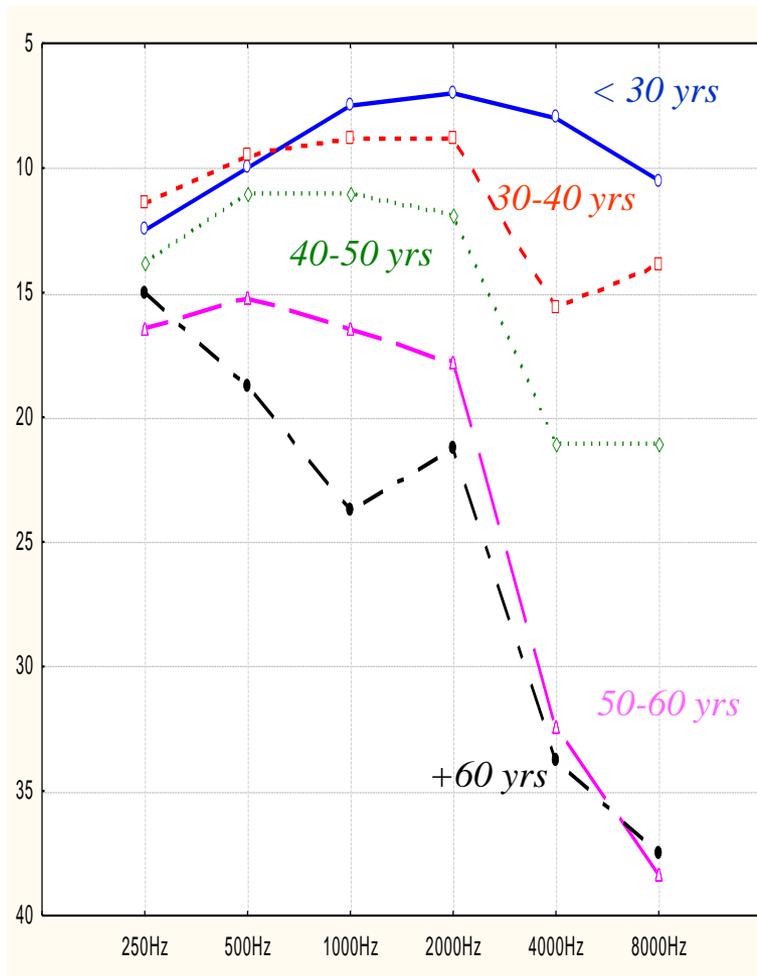


Cat 2

- +/- normal audiogram
- Some complain about difficulties to **understand speech** (in noisy places/ in silence)

Cat 1

- Irreversible and significant hearing damage
- Complain about the ability to **detect sound** (pure tones)

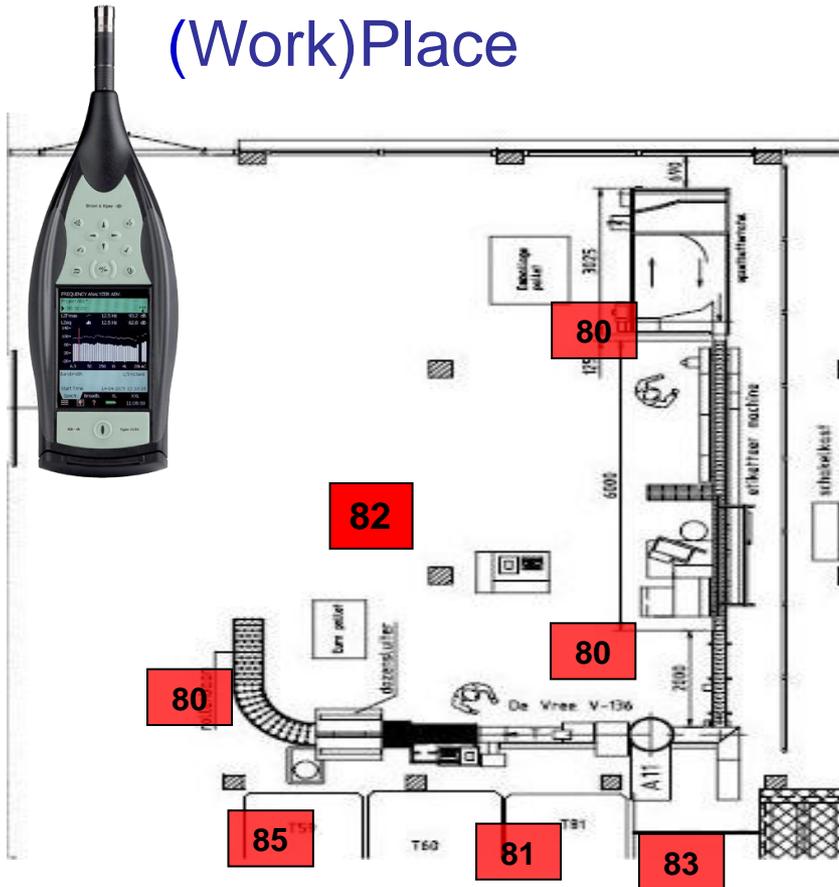


We lack

- information
- An early warning system for noise induced hearing damage

= 1st missing link

(Work)Place

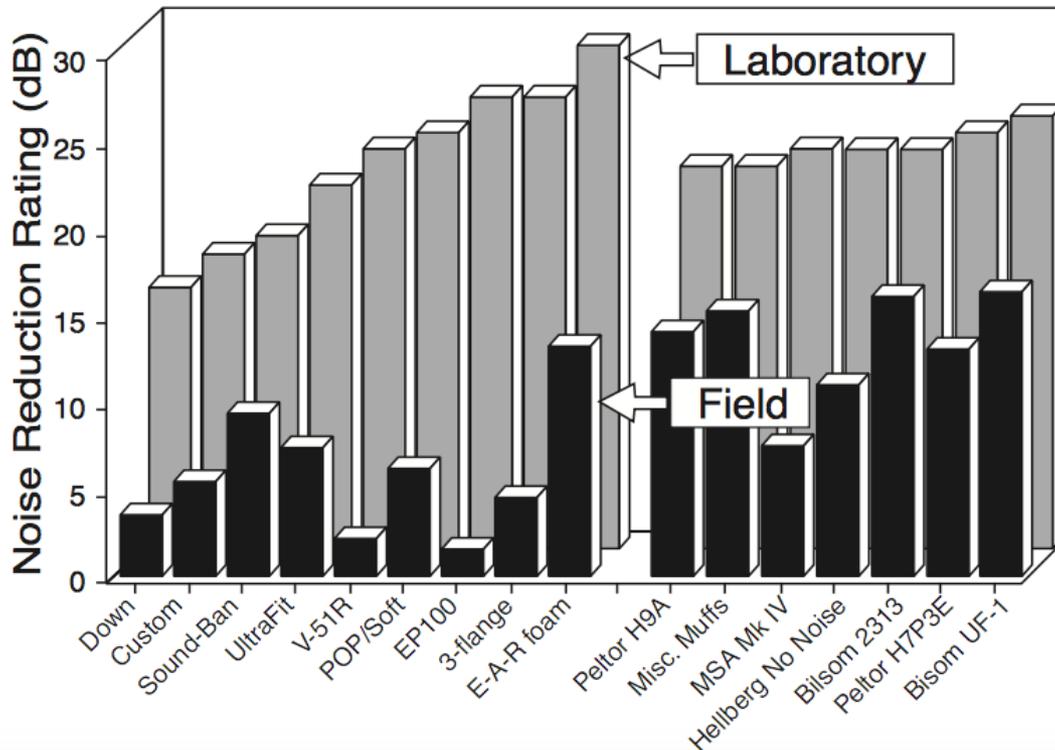


Person



labeled attenuation versus real world

Figure 1 - Comparison of NRRs published in North America (labeled values based upon laboratory tests), to real-world "field" attenuation results derived from 20 separate studies.

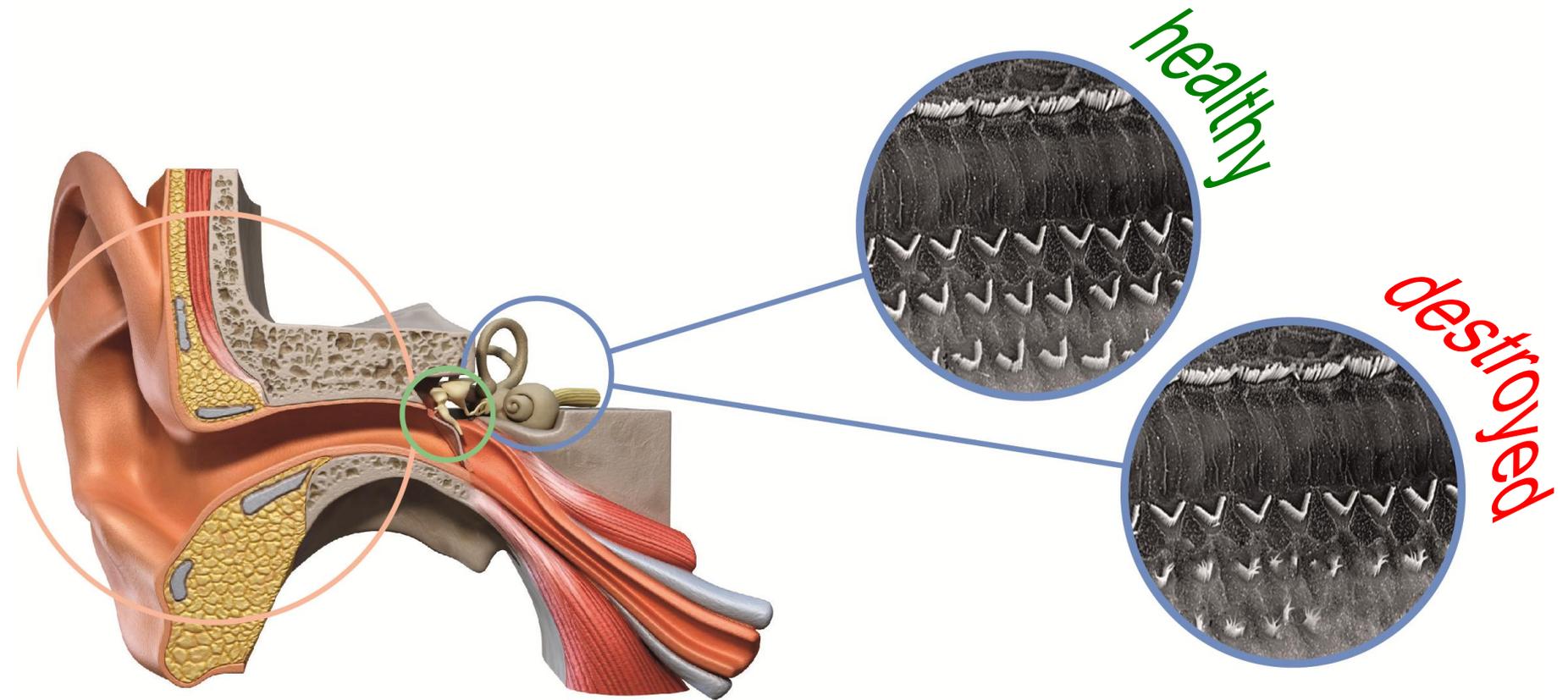


Looking for answers



An early indicator of
hearing damage
(outer hair cell)





Physical (noise), chemical or medical induced destruction of the 'outer hair cells' is irreversible and permanent

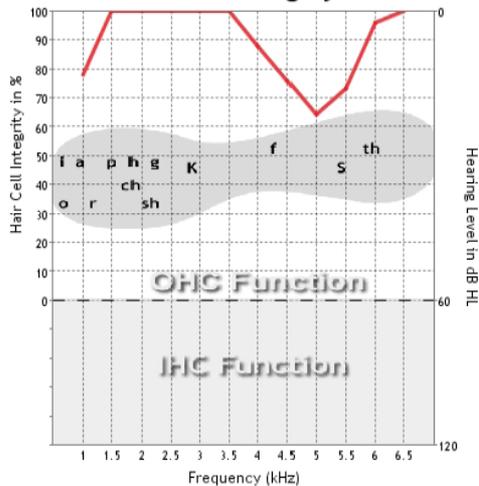
Test details

Date/Time of test : 2007-11-14 08:11:04
 Gender : Male
 First Name :
 Last Name :
 Id Number : 8611068
 Date of birth (yyyy/mm/dd) : 1966/02/11

RIGHT EAR

OHC Damage Index
12 %

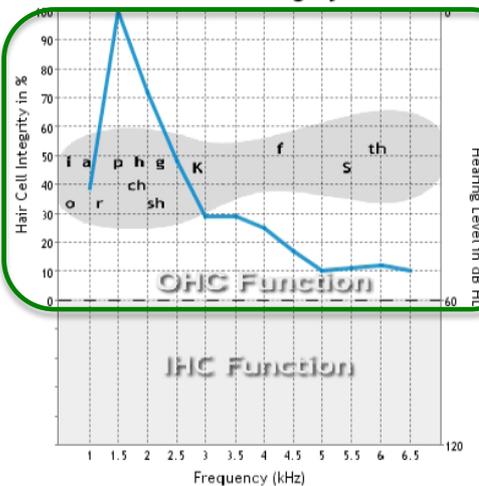
Hair Cell Integrity



LEFT EAR

OHC Damage Index
71 %

Hair Cell Integrity



**% hearing damage
 (OHC Damage Index)**

Easy to **understand (%)**
 Easy to **explain sense of urgency**
 Easy to **monitor**

**'Outer Hair Cell' integrity
 (per frequency & related to speech)**

Precision (8 pts/octave)
Objectify subjective complaint

OHC Scan versus audiogram

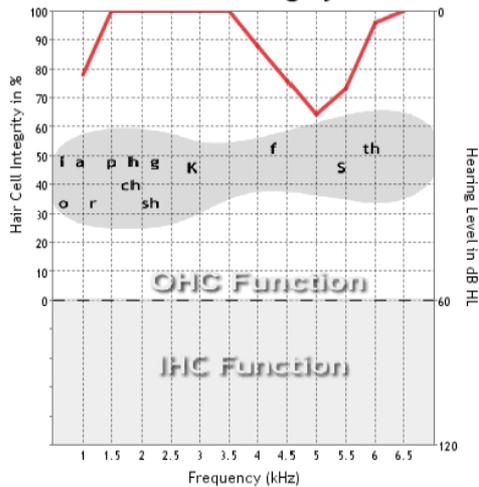
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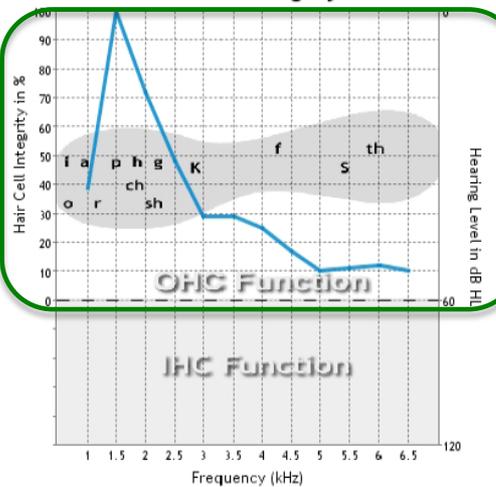


kHz	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
%	78	100	100	100	100	100	88	76	64	73	96	100

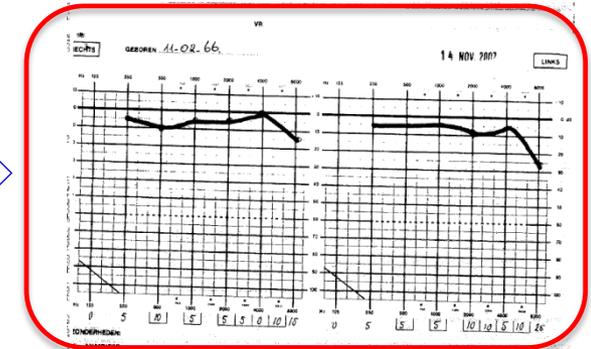
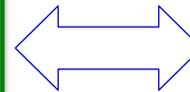
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Hair Cell Integrity



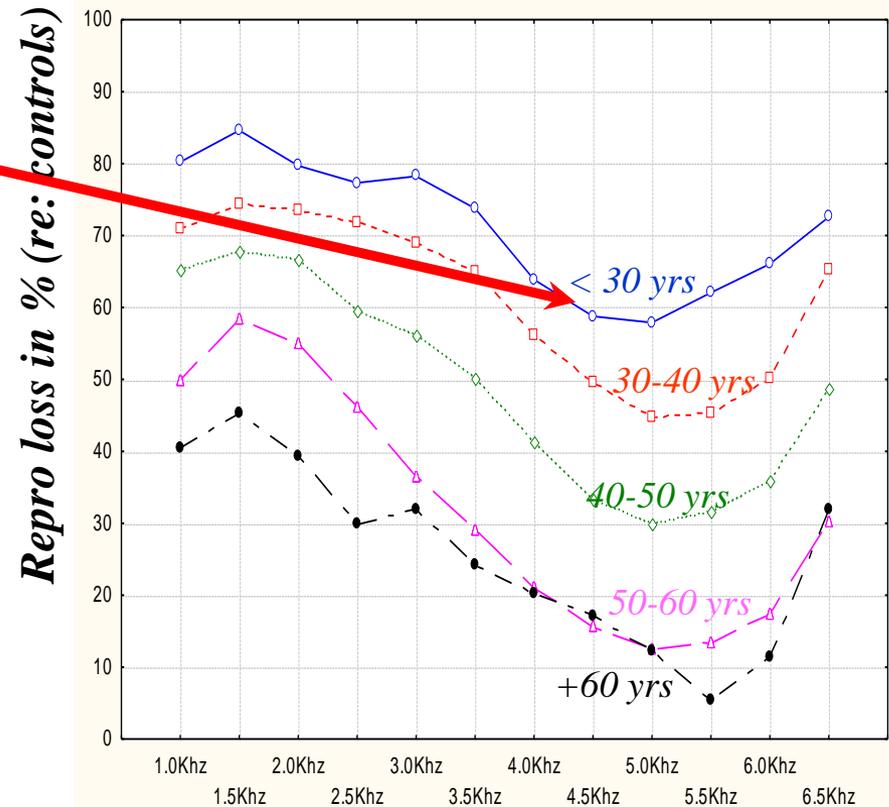
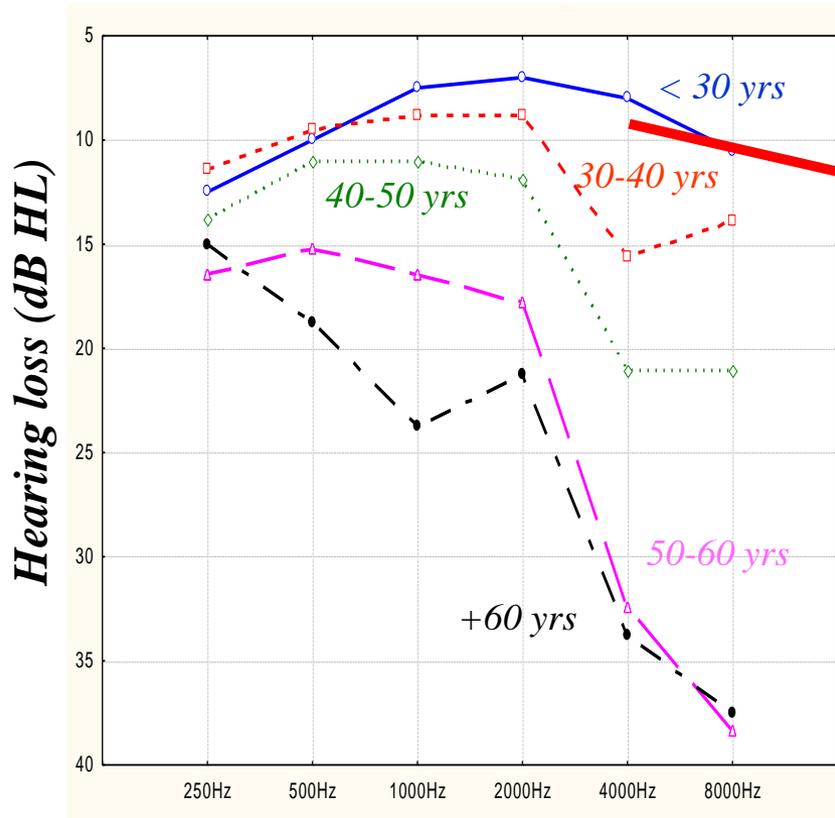
kHz	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5
%	39	100	72	48	29	29	25	17	10	11	12	10





Audiometry

OAEs



- The (irreversible) damage to the 'outer hair cells' is not picked up until it has realised an effect on hearing
= TOO LATE
- Requires strict test conditions to ensure quality of the result. This comprises 'repeatability' of the test which is an essential element of a health surveillance tool.
- Subjective test requiring cooperation from the individual



Management says : WE are responsible, so we take responsibility

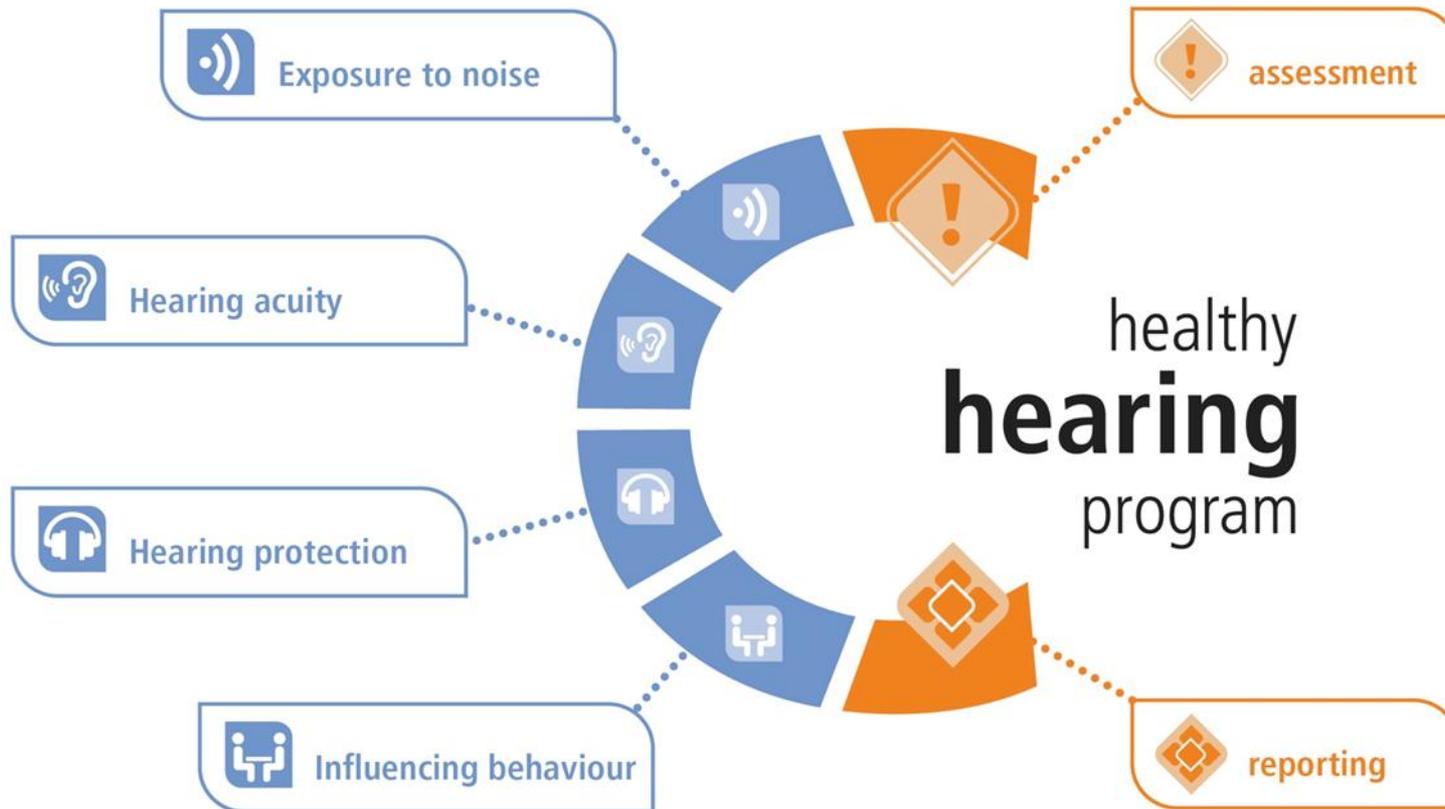
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- To measure is to know
- Evidence based
- Solution and future Focused
- Trust and Challenge > occ hygienist and company doctor
- Multidisciplinary approach and cooperation (“project”)



- questionnaire
- personal interview (work, private)
- inventarisation workplace
- coaching at the wp
- cooperation with the teamleader





67 GPB (80 Euro) per Tea-cosy> - 6 dB(A) AkzoNobel



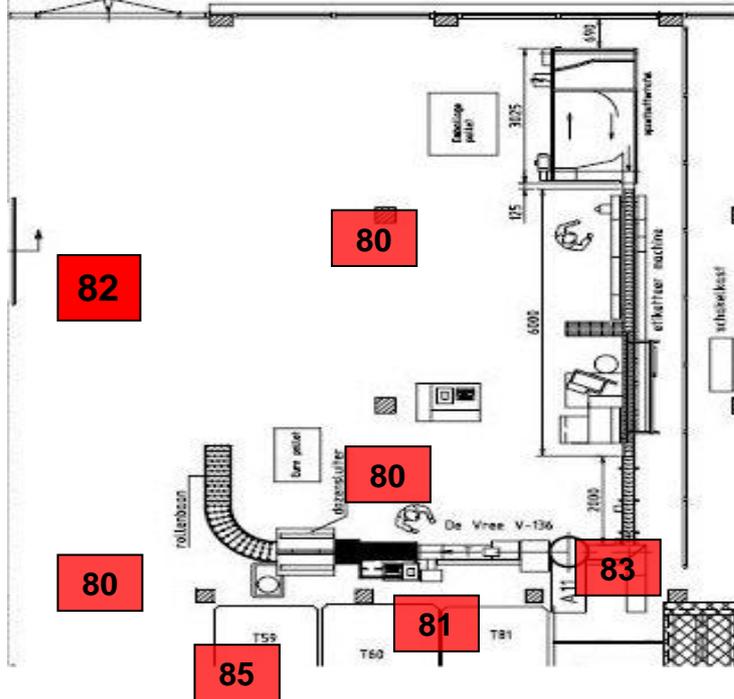
“Curtain” : - 10 dB(A) (8000GBP)

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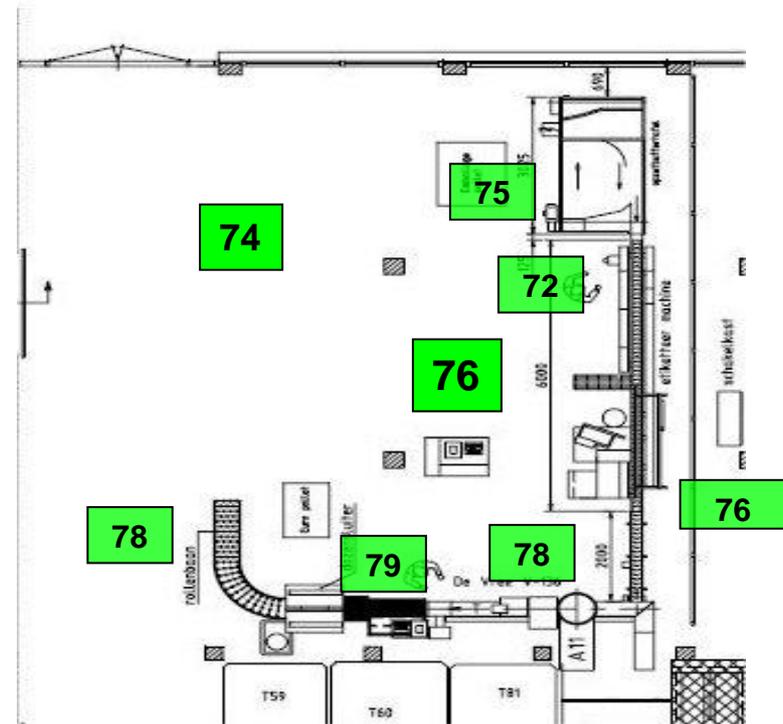


reduced noise levels

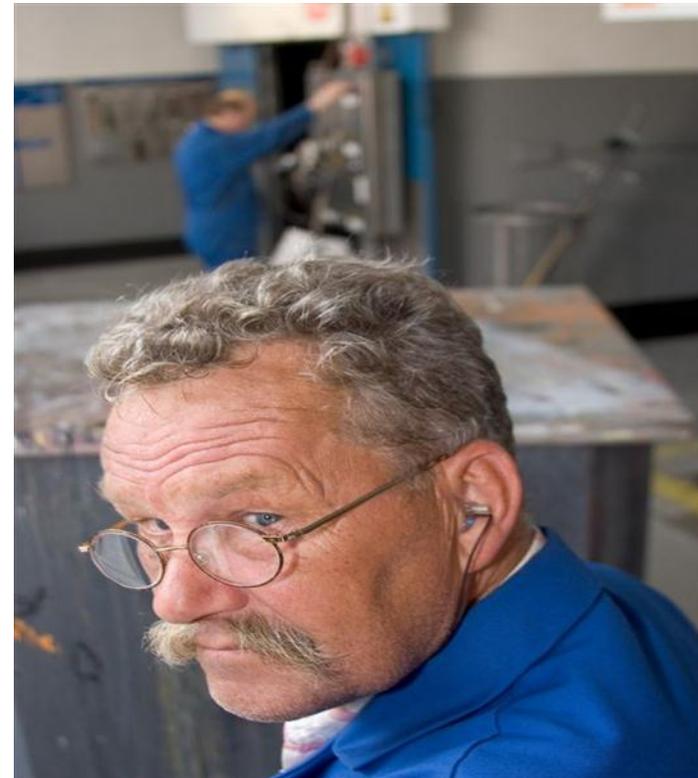
0 measurement A11



Measurement after reduction A11



- **Effective/efficient monitoring of ability to hear,**
 - **Awareness** (both employees and managers)
 - **Management commitment**
 - **Back to basics (the source)**
 - **Creativity at the source**
 - **“Let it be clear that...”**
 - **Social responsibility**
 - **Less noise: 50%**



- innovative noise management

Engaged workers and managers make a difference !

To measure is to know (OHC!), know what you want to measure

A good multidisciplinary practice of prevention of NIHL

Thank you for your attention

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