Meeting the Training Requirements of the 2007 General Apps Regulations - Control of Noise at Work

- This programme is designed to comply with the requirements of Regulation 130.
- You should preview the slides and include your specific workplace information prior to conducting the training., in slides 1,10,11,12,14,18 (Samples may be used in this version).
- There are 5 hidden slides (4,20,23,29 30). You may choose to include these slides in your presentation.
- Additional information is found in the **Notes Page** of individual slides.
- For printing purposes , the PDF version uses less computer memory and prints faster.
- Documentation and recordkeeping
  - Date and/or version number on all training material.
  - If updating training material, keep an archived copy of previous version.
  - Keep attendance records – these should refer to the training material used.

Control of Noise at Work - Employee training

[ABC]

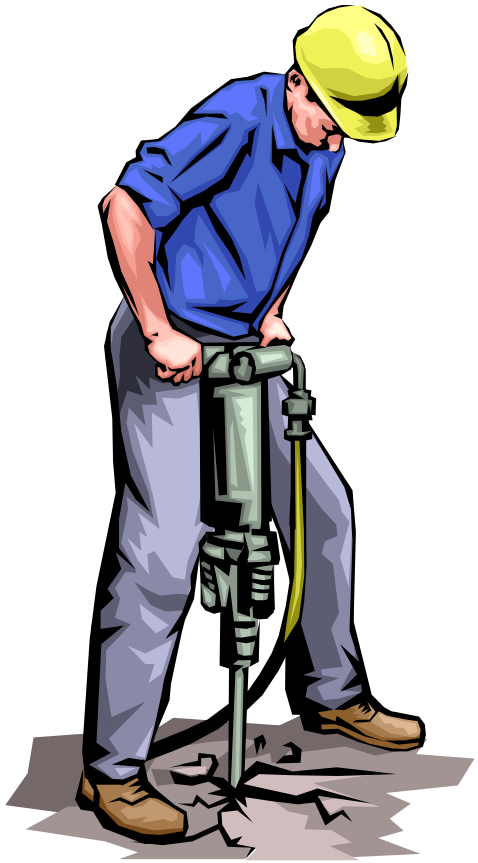
Version 01 October 2011.

Control of Noise At Work

This presentation will cover the following topics:

- The risks from noise – effects on hearing
- Exposure limit values and exposure action levels
- Results of the noise risk assessment at [name]
- Controls used to reduce noise levels
- Technical and engineering measures
- Hearing protection – their purpose, types and use
- Safe working practices
- Why and how to detect and report signs of hearing damage
- Health surveillance - purpose of hearing checks (audiometric testing)

Effects of exposure to loud noise

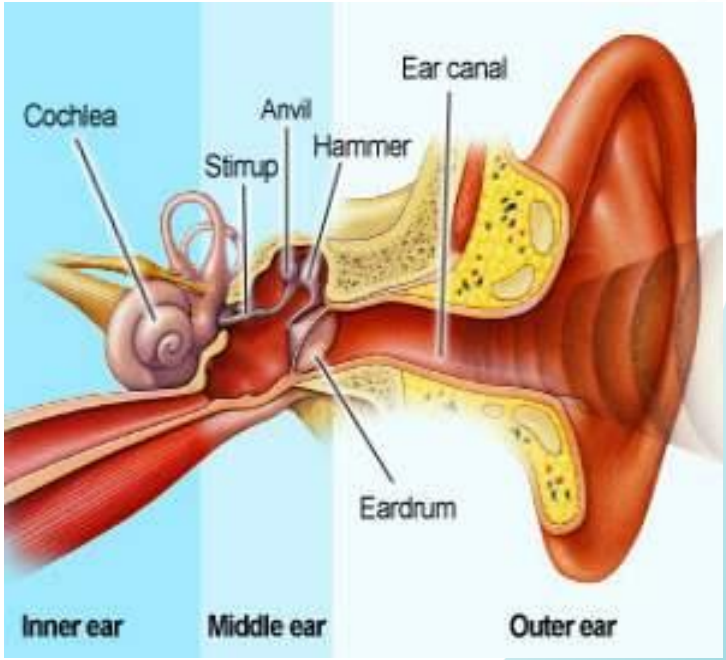


- Causes hearing loss over time.
- Hearing Loss is usually not noticed because it is so gradual
- Usually a person loses the ability to hear high pitches first
- Often the first noticeable effect is difficulty in hearing speech
- Noise exposure can damages or destroy the nerves in the inner ear.
- Other possible effects: “tinnitus” or permanent ringing in the ear.

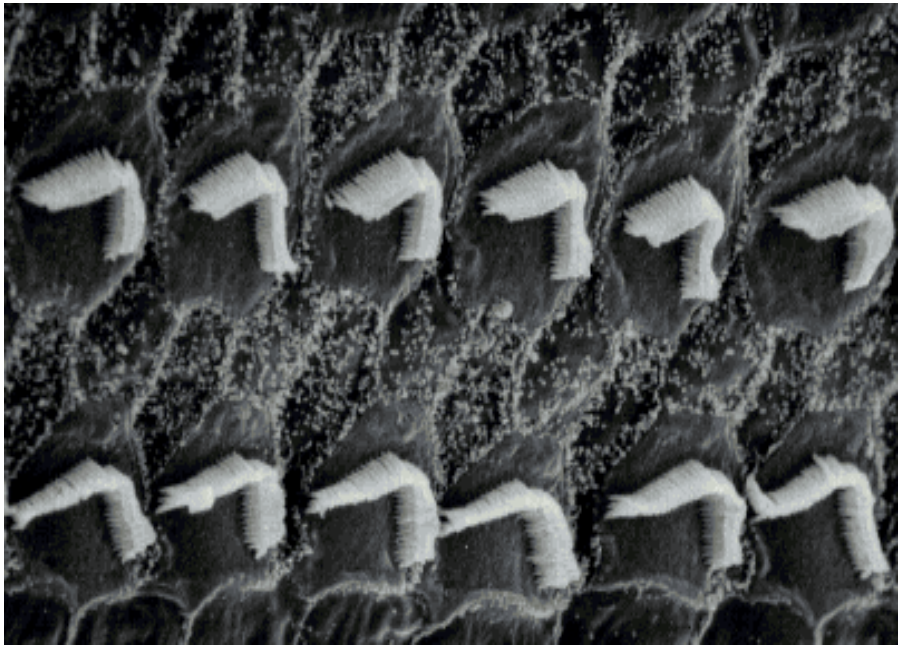
Long Term Exposure to Noise

Ears can recover from short exposure to loud noise, but over time nerve damage will occur

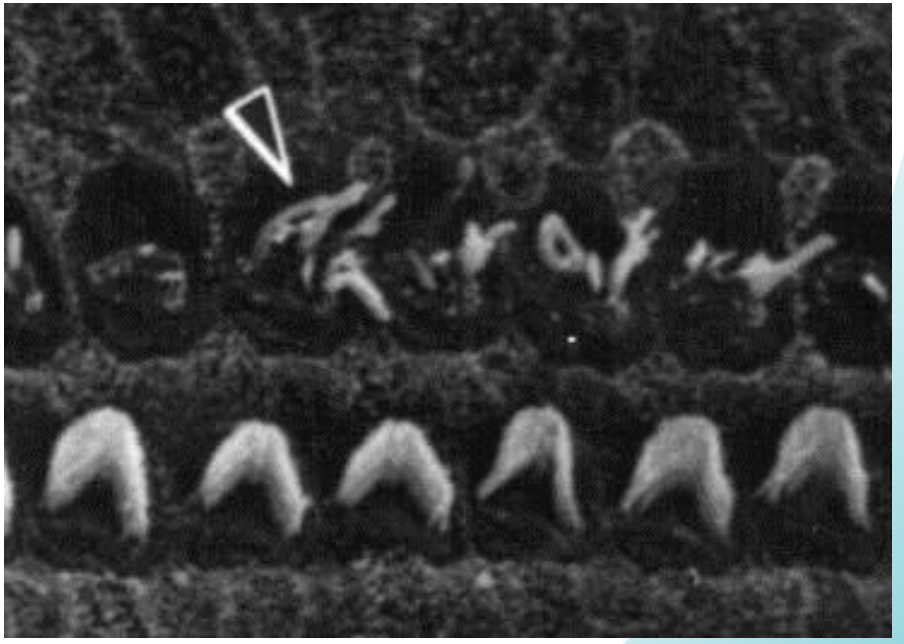
The longer and louder the noise, the greater chance permanent damage will occur



Effects of noise to inner ear



Normal hair cells



Noise-damaged hair cells

When is Noise Too Loud?

Damage depends on both the **loudness** and **length** of exposure.

Loudness is measured in units called "decibels" or "dB"

- Quiet library 30 dB
- Classroom 70 dB
- Tractor cab 80 dB

Rule of thumb: If two people 2 metres apart must shout to be heard, the background noise is too loud

What is too much noise exposure?

- Hearing loss can occur when the levels exceeds 85 decibels over the average working day (8-hours)
- There is a residual risk down to levels of 80 dB
- Impact (instant) or banging noise above 140 dB will cause immediate damage

- 95 dB for 15 minutes = 86 dB for 2 hours = 80 dB averaged over 8 hours

Limit values and action values

Legislators have decided what safe levels are and what limits should apply to workers' hearing

Criterion	**Daily personal exposure ($L_{ex, 8h}$) in dB(A)**	**Peak pressure (P_{peak}) in dB(C)**
Limit value	87	140
Upper Action level	85	137
Lower Action Level	80	135

Source: General Applications Regulations 2007

Noise Risk Assessment
Equipment noise levels at ABC 2011

Equipment	Noise Levels L_{Aeq} , dB(A)
Radial saw, jig saw , planer	90-95
Circular Saw, hammer action drill	>100
Bench Grinder	85
Average for woodworking tools	96.7
Strimmer	97
Quad	90
Self-powered mower	91
Rifle fitted with moderator	73

Personal exposures in [ABC]

Tasks /Persons	Main Sources of Noise Exposure	Noise Exposure Category dB(A)	Risk Without Hearing Protection	Risk With Hearing Protection
Woodwork repairs and fabrication	Powered woodworking tools (radial, circular and jig saws, planer)	>85	Moderate	Negligible
Grounds and path maintenance	Strimmer, Quad, Mower	>85	Moderate	Negligible
General work, including shooting	No significant sources of noise exposure	<75	Negligible	Negligible
Tree surgeon	Chainsaw, wood chipper, leaf blower	>85	High	Low

People may/not be using equipment continuously. The daily exposure values above are based on typical work pattern.

Noise controls we use in [ABC]

- Purchasing quieter equipment where possible
- Maintaining equipment
- Providing PPE:
  - Earmuffs or equivalent,
  - **or** ear plugs
- Signs on equipment or in place of use where exposure **> 80 dB(A)**
- Supervision

Types of hearing protection

Earmuffs

Earplugs

Tissue doesn't work!

- Three types of hearing protection – ear muffs, earplugs and ear caps.
- Ear muffs and earplugs provide about equal protection, ear caps somewhat less.
- All designed to reduce the intensity (loudness) of noise to the inner ear.
- The two types have advantages and disadvantages and people vary on which they prefer to use.

Hearing Protection – ear plugs

- Earplugs are made of foam, rubber or plastic and are either one-size-fits-all or in sizes small, medium and large.
- Some are disposable, some are reusable.
- They are lightweight, and require no maintenance.
- They are inserted into the ear canal.
- [Insert specific type of ear plug used in your location]

Hearing Protection – ear plugs

- Some people may find ear plugs uncomfortable to wear for long periods at first.
- Ear plugs rarely cause infection or prolonged irritation of the ear canal.
- Most people can find a comfortable fit by trying several different sizes, types or brands.

Inserting foam earplugs

Foam type earplugs are one-size-fits-all and must be inserted properly into the ear.

Roll earplug into small cylinder first, then insert in ear.

Inserting foam earplugs

Earplug incorrectly inserted

Earplug correctly inserted

Hearing Protection – Ear muffs

- They cover the whole ear
- Replaceable pads and some high-tech styles filter out specific noise pitches.
- Can last a long time
- Less prone to contamination
- Some are attached to hard hats or goggles.
- Can be uncomfortable in hot weather.
- Don’t seal well for someone with glasses or heavy sideburns

- [ABC] uses [insert specific type here]

How can you hear anything with earmuffs on?

- Using earmuffs or plugs in noisy areas can actually make it easier to hear coworkers or machinery.
- They reduce overwhelming loud background noise.
- Some high-tech muffs can filter out certain frequencies or have radios inside for communication in high noise areas.

Proper use of hearing protection

- Earmuffs and plugs provide good protection only when used properly.
- Sometimes people will remove hearing protection for "just a minute" in a noisy area.
- In areas of very high noise exposure, this could result in noise overexposure.

It won't protect your ears if it is around your neck!!!

Proper use of hearing protection

- It takes just a few minutes of unprotected exposure at noise above 115 decibels to risk hearing damage.
- Earplugs not well inserted into the ear canal will not provide complete protection.
- Likewise, earmuffs not snug against the head will “leak” noise into the ear.

DOs .... **And** .... DON'Ts

- **Comply with all signage.**
- **Check the condition of hearing protection before each use**
- **If possible, rotate tasks to limit prolonged exposure.**
- **Report any faults or unusually increased noise levels from equipment.**
- **Report any problems with your hearing.**

- **Use machinery without wearing proper ear protection.**
- **Wear someone else's ear protection.**
- **Use damaged ear protection – get a new supply**

Detecting and reporting hearing damage

- Difficulty in hearing speech
- Problem hearing over the telephone
- Trouble following the conversation when two or more people are talking at the same time
- People complaining that the TV volume is too high
- Straining to understand conversation
- Asking people to repeat themselves

When are hearing checks and audiometric testing required?

- Based on the risk assessment
  - If >80 dB(A) over 8hours, "audiometric testing" may be done by trained technicians.
  - If > 85 d B(A), then hearing checks are done by a medical practitioner.
- Your manager will arrange.
- State authorities – via the CMOCS.

Purposes of hearing checks (audiometric testing)

Most of us develop a mild hearing loss as we age, especially in the higher pitches.

A severe or significant hearing loss at a younger age may mean you have had excessive noise exposure.

Audiometric testing done regularly can detect early stages of hearing loss.

Audiometric Testing

Audiometric testing results can be used to check the following:

- Hearing protection in use is adequate
- A change in noise exposure
- A medical condition of the ear unrelated to noise exposure

You are entitled to the results

How does Audiometric Testing Work?

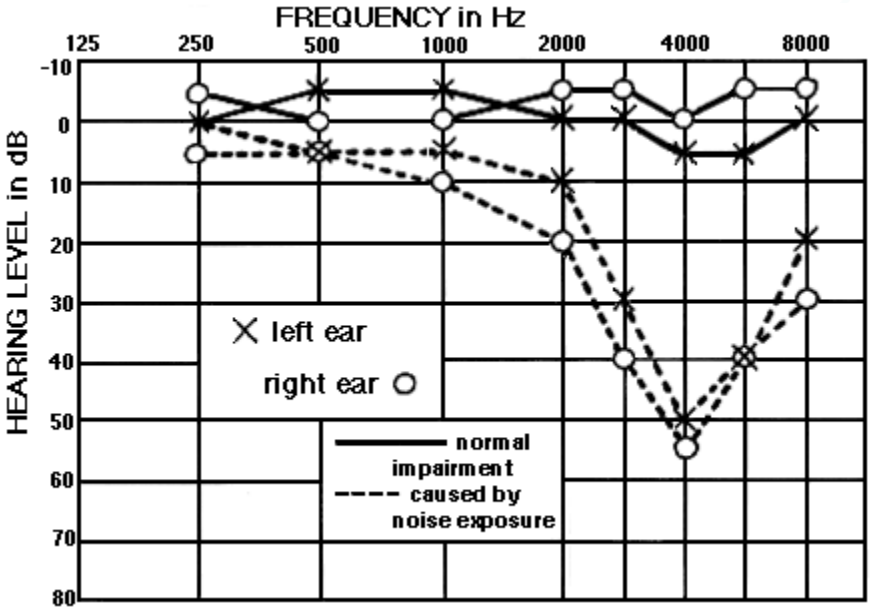
It is preferable to have a 'baseline' test , for instance on starting work.

The testing is repeated at suitable intervals after that and compared to the baseline test result.

If a hearing loss is detected, you will be referred to a doctor or audiologist.

Audiometric Testing

- Audiometric testing produces printed audiograms which show hearing ability at several pitches or frequencies, including those of the human voice.
- The second and subsequent tests are compared to the baseline.



•mage source: Simon Fraser University, Canada)

- If there is a significant drop then further review may be required.

End of Presentation

Thank You !

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