Damage to hearing

What should I know?

Many people at work are exposed to levels of noise that put their hearing at risk. Because of this, the Noise at Work Regulations require employers to prevent or reduce the risk to their employees.

Noise created at work can cause:

- permanent or temporary damage to your hearing
- ringing, whistling, buzzing or humming in the ear.

The signs, symptoms and effects of hearing damage can include:

- not hearing instructions or warning/alert systems at work
- not participating in or keeping up with conversation
- distress and sleep disturbance
- enforcement action, court cases, compensation claims.

The damage is caused by, for example:

- repeated exposure to high noise levels over months or years
- sudden and extremely loud noises.

Am I at risk?

You, your business and staff may be at risk, if workers:

- are in an area where there is interfering noise for most of the day (e.g. a vacuum cleaner, a busy street or a crowded bar)
- have to raise their voices to talk to a person 2 metres away
- use powered or pneumatic tools or machines
- use impact tools (e.g. hammers, drop forges, riveters)
- use powered cartridge-operated tools and guns or punching tools
- carry out noise-generating activities in high-risk sectors including heavy construction, demolition, agriculture, road repair, foundry work or undertake wood or metal products manufacture or repair, plastic processing or waste recycling
- experience muffled hearing at the end of the day.

What should I do?

Establish the following:

- Noisy areas and sources.
- Who is exposed, to what level and why.
- What prevention and control measures are needed.
- Who needs hearing protectors and what type.
- Who needs hearing checks.
- The control measures you provide are used correctly and maintained.
- Whether employees are involved in decision making about their work or work design affecting health and safety.

What should I avoid?

- Damaged or blunt tools, shock absorbers and mountings.
- Damaged sound-absorbing panels.
- Damaged noise enclosures.
- Placing a noisy machine in the middle of a workshop.
- Incorrectly fitted and/or dirty earplugs.
- Using damaged and/or incorrectly fitted earmuffs.

Where can I get help?

- Scottish Centre for Healthy Working Lives, tel: 0800 019 2211 or www.healthyworkinglives.com
- Health and Safety Executive, www.hse.gov.uk/noise

For further details see ‘Where to get extra help and support’ on pages 83–88.

Additional information

There are four steps in preserving hearing:

1: Reduce noise:

- Choose the right methods for your situation.
- Use a quieter process or tool.
- Avoid impact noise (e.g. reducing drop height or force, using noise absorbers on the impact head).
- Reduce vibration from machines and tools.
- Fit silencers and vibration dampers to machines and tools.
- Use shock absorbers and mounts on machines.
- Erect professionally designed enclosures around machines.
- Use sound barriers, absorbers or reflectors.
- Design work areas to keep noisy machines away from quieter areas.
- Limit the amount of time spent in noisy areas each day.
- Carry out checks and maintenance schedules as recommended in the machine manual.
- Specify quieter machines when buying or hiring them.

2: Provide hearing protectors:

Hearing protection should be issued free of charge:

- where extra protection is needed after using noise reduction control measures
- for use as a short-term control until you have put in place other noise reduction control measures
- if requested by employees where noise exposure is within the recommended exposure action values.*

3: Train employees to use control measures properly:

- Even the best control systems and hearing protectors fail if they are not used in the right way.

4: Hearing checks:

You must provide hearing checks when your employees:

- » are exposed regularly above the upper noise exposure action values*
- » are at an increased risk of hearing loss, e.g. individuals are susceptible to damage due to pre-exsisting medical conditions or a family history of such conditions.

* To learn more about exposure action values, exposure limit values and how to assess and measure them, visit the HSE website.

This is not a full list.

Selecting hearing protection (earmuffs and plugs)

What should I know?

Hearing protectors should be issued to employees, who should use them whenever it is not possible to achieve adequate control of exposure to noise by other control measures alone.

Other exposure control measures include:

- » using a quieter process or tool
- » avoiding impact noise (e.g. reducing drop height or force, using noise absorbers on the impact head)
- » reducing vibration from machines and tools
- » fitting silencers and/or vibration dampers to machines and tools
- » using shock absorbers and mounts on machines
- » erecting professionally designed enclosures around machines
- » using sound barriers, absorbers or reflectors
- » designing work areas to keep noisy machines away from quieter areas
- » limiting the amount of time spent in noisy areas each day
- » carrying out checks and maintenance schedules as recommended in the machine manual
- » specifying quieter machines when buying or hiring.

When can I use hearing protectors?

- » After using other control measures.
- » For short-duration or infrequent jobs where other controls may not be practicable.
- » When putting in place other control measures.
- » When carrying out emergency repair work.
- » If your employees ask for them and their noise exposure is between the lower and upper action values.*

In addition, you may consider issuing hearing protectors to provide additional protection in case other control measures fail to operate.

* To learn more about exposure action values, exposure limit values and how to assess and measure them, visit the HSE website.

Am I at risk?

You, your business and your staff may be put at risk, if hearing protectors:

- » are used as the control without any consideration of other control measures
- » are dirty and damaged
- » are incorrectly used
- » have been subjected to DIY modifications.

What should I do?

- » Select the right protectors using the HSE hearing protection calculator at www.hse.gov.uk/noise/calculator. If you are unsure seek help from your supplier or a professional.
- » Provide your employees with hearing protectors and make sure they use them as recommended by the manufacturer.
- » Mark hearing protection zones.
- » Consult employees or their representatives on matters affecting their health and safety.

What should I avoid?

- » Using incorrect hearing protectors for the noise level and the user.
- » Using damaged, dirty or modified hearing protectors.
- » Allowing hair, jewellery, spectacles or eye protectors, helmet or respiratory protective equipment or clothing to cause interference.

Where can I get help?

- » Scottish Centre for Healthy Working Lives, tel: 0800 019 2211 or www.healthyworkinglives.com
- » Health and Safety Executive, www.hse.gov.uk/noise

For further details see ‘Where to get extra help and support’ on pages 83–88.

Additional information

The most commonly used hearing protectors are:

- » earmuffs
- » earplugs.

Earmuffs

These can be held on tensioned bands or fitted to helmets.

Earplugs

These come in various shapes, sizes and designs.

Use of hearing protectors:

- » Wear when extra protection is needed after other control measures are in place and the upper action value* is exceeded.
- » Provide as a short-term measure while other controls are being put in place.
- » Provide if requested by an employee because the exposure is between the lower and upper exposure action values.*
- » Make sure you select the right protector for the patterns of noise. You may need help or can seek information at the HSE website.
- » Do not provide a hearing protector which cuts out too much noise – this can make the user feeling isolated or unwilling to wear it.
- » Where multiple PPE (eye protectors, helmet, etc.) are needed, combination equipment is available.

* To learn more about exposure action values, exposure limit values and how to assess and measure them, visit the HSE website.

The ‘CE’ mark:

- » means hearing protectors meets the minimum design and performance features as set out in law and international standards.
- » does not mean they are necessarily the right type. You must select the right hearing protector for your needs. Get help where necessary.

Provide training

This will ensure:

» correct use, maintenance and storage of hearing protectors

» correct techniques are used to carry out the work, and for using tools and equipment.

Maintenance

Ensure that:

» earmuff seals are not damaged

» DIY alterations are not made to headband tension

» earplugs are discarded when dirty.

This is not a full list.

Damage to touch and grip (vibration)

What should I know?

Many people at work are exposed to levels of hand–arm and whole-body vibration, which put their health at risk. Because of this, the Control of Vibration at Work Regulations require employers to prevent or reduce the risk to their employees.

Vibration created at work can cause vibration-related diseases including vibration white finger (VWF) and damage and compression of the nerves in your hands.

The signs, symptoms and effects on fingers and hands can include:

» tingling, numbness, pain, pins and needles

» damaged blood vessels leading to skin and flesh becoming white

» loss of strength, difficulty in feeling things, reduced grip

» difficulty with fine work, importantly in cold and/or damp conditions

» distress, sleep disturbance, inability to do everyday tasks

» enforcement action, court cases, compensation claims.

The damage is caused by vibration such as that transmitted to the hands from hand-held powered work equipment and tools.

Chainsaws	Concrete or road breakers, compactor plates	Cut-off saws for metals and stone
Hammer drills and jigsaws	Hand-held grinders, disc cutters, hammer drills	Impact wrenches
Needle scalers, scabblers	Pedestal grinders	Polishers
Power hammers, chisels	Power sanders, brush cutters, strimmers	High-powered lawnmowers, hedge trimmers

Am I at risk?

You, your business and staff may be put at risk if you use hand-held powered tools such as those in the table above.

You may also be at risk, if:

- you use hammer-action tools for more than about 15 minutes per day
- you use rotary action tools for more than about 1 hour per day
- you use manually-held vibrating workpieces
- any of your employees have pre-existing health conditions (e.g. tingling, numbness, pain, pins and needles in hands and fingers).

What should I do?

- Identify which tools and tasks are causing the vibration exposure.
- Check who is exposed, to what level and for how long.
- Find out what can be done to eliminate vibration at source.
- Identify what control measures are needed.
- Check who needs health checks for early detection of vibration damage.
- Ensure control measures you provide are used correctly and maintained.
- Consult employees or their representatives on matters affecting their health and safety.

What should I avoid?

- Using blunt or worn cutting tools.
- Hiring, buying and using high-level vibration tools.
- Using damaged or unmaintained tools.
- Unbalanced rotating discs and wheels.
- Constant and continuous use of vibrating tools.
- Using vibrating workbenches.

Where can I get help?

- Scottish Centre for Healthy Working Lives, tel: 0800 019 2211 or www.healthyworkinglives.com
- Health and Safety Executive, www.hse.gov.uk/vibration

For further details see ‘Where to get extra help and support’ on pages 83–88.

Rapid Reference Card

Additional information

There are four steps in preventing vibration damage:

1. Reduce vibration

Choose the right method for your work situation:

- Use alternative work methods to eliminate or reduce vibration.
- Mechanise or automate the task.
- Make sure the equipment selected or allocated for tasks is suitable and can do the work efficiently.
- Select the lowest vibration tool that can do the work efficiently.
- Limit the use of high-vibration tools.
- Use low-vibration workstations.
- Use devices such as jigs and suspension systems to reduce the need to grip heavy tools tightly.
- Purchase or hire low-vibration tools and equipment.
- Limit the amount of time your employees are exposed to vibration.

2. Maintain controls

- Ensure controls you have introduced are used properly.
- Carry out checks and maintenance schedules as recommended in the machine manual.

3. Train workers to use control measures properly

Even the best control systems fail if they are not used in the right way. Provide training in the following:

- How to select and use the right tool for the job.
- How to check the condition of the tool before use (e.g. cutting tool is sharp).
- How to grip or force a tool or workpiece to minimise vibration.
- How to keep warm. You need to provide protective clothing to keep warm and dry. NB gloves can be used to keep hands warm, but should not be relied upon to provide protection from vibration.

4. Health checks

You must provide health checks if your employees:

- are exposed regularly above the vibration exposure action values*
- are at risk of vibration-related diseases, e.g. they already have some degree of VWF symptoms or are sensitive to vibration damage due to prevailing health conditions (e.g. blood circulatory diseases such as Reynaud's disease).

* To learn more about exposure action values, exposure limit values and how to assess and measure them, visit the HSE website.

This is not a full list.

Rapid Reference Card