

Controlling the risks from noise at work

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Scope

This aim of this guidance is to ensure that all schools/services have a management system in place to protect employees from excessive noise at their place of work, which could cause them to lose their hearing and/or suffer from tinnitus.

This guidance note does not cover the environmental aspects of noise and noise pollution or the adverse effects on wellbeing which can arise from 'nuisance' noise.

1. Introduction

Noise at work can cause hearing loss that can be temporary or permanent. People often experience temporary deafness after leaving a noisy place. Although hearing recovers within a few hours, this should not be ignored. It is a sign that if an individual continues to be exposed to the noise then their hearing could be permanently damaged. Permanent hearing damage can be caused immediately by sudden, extremely loud, explosive noises.

The Control of Noise at Work Regulations 2005 imposes duties on the University to protect employees who may be exposed to noise. This guidance outlines measures that need to be in place to protect employees, including assessing the risks and taking measures to reduce noise exposure. Providing training and information for employees on the risks from noise and the measures in place to reduce these and providing health surveillance where the risk assessment shows that this is appropriate.

2. Roles and responsibilities

2.1 Head of School/Service

The Head of School / Service is responsible for ensuring that arrangements are in place to eliminate the risk from noise at work where possible. If noise cannot be eliminated then ensure that effective control measures are in place in their areas of responsibility that reduce noise exposure levels so far as is reasonably practicable. The Head of School / Service is responsible for ensuring that noise control arrangements are communicated to all staff via the local rules document.

2.2 Line Manager/Supervisor

Line Managers/Supervisors have a responsibility to ensure that;

- There is a procedure in place to ensure that noise risks are assessed and that action is taken to reduce the noise exposure.
- Action is taken to ensure that legal limits on noise exposure are not exceeded, this will include providing hearing protection if the noise limits cannot be reduced enough by using other methods.
- Staff are provided with information and training on health risks and control measures in place.
- Ensure noise factors are taken into account when hiring or purchasing new equipment.
- Noise levels are considered when installing or relocating equipment or activities.
- Maintenance arrangements are in place to ensure that equipment continues to operate correctly and so far as possible does not become noisier over time.
- Suitable hearing protection is provided and maintained. Where hearing protection is mandatory, ensure that adequate supervision is provided.

- Areas are designated hearing protection zones where necessary.
- Health surveillance is arranged where there is a risk to health.
- The risk assessment is reviewed and updated on a regular basis.

2.3 Occupational Health Service

The University Occupational Health Service is responsible for;

- Organising and carrying out appropriate health surveillance programmes and associated training and education as required. Ensuring that health surveillance records are confidentially maintained.
- Notifying the Line Manager of health surveillance results and any resulting recommendations.

2.4 Employees

Members of staff have a responsibility to ensure that they;

- Comply with control measures outlined in risk assessment.
- Use all equipment in accordance with instruction.
- Wear hearing protection in accordance with their employer's instructions.
- Report to their line manager immediately any symptoms that would be associated with noise at work.
- Report to their line manager any faults or difficulties with noise-control equipment
- Cooperate with health surveillance programmes.
- Report any defects or difficulties with any equipment.

3. Noise levels

3.1 How noise is measured

Noise is measured in decibels, shown as dB. To take account of the way that the human ear responds to sounds of various frequencies a frequency weighting is added which is known as the A weighting. When measuring peak noise a C weighting is applied to ensure that proper account is taken of the sound energy in the peak sound.

3.2 Action levels and exposure limits

The regulations require specific action at certain action values. If an employer is exposed to noise at or above a lower exposure action value personal hearing protectors must be made available at their request. If an employee is exposed to noise above the upper exposure action level then personal hearing protection must be provided and the area designated as a hearing protection zone.

These relate to:

- the levels of exposure to noise of your employees averaged over a working day

or week; and

- the maximum noise (peak sound pressure) to which employees are exposed in a working day.

The values are:

- lower exposure action values:
 - daily or weekly personal noise exposure of 80 dB (A);
 - peak sound pressure of 135 dB (C).
- upper exposure action values:
 - daily or weekly personal noise exposure of 85 dB (A);
 - peak sound pressure of 137 dB (C).

There are also levels of noise exposure which must not be exceeded. These are called exposure limit values:

- daily or weekly personal noise exposure of 87 dB (A);
- peak sound pressure of 140 dB (C).

This is the maximum sound exposure permitted for any individual and takes hearing protection into account i.e. It is the actual sound exposure of the individual at the ears following any attenuation from hearing protection.

Where the exposure of an employee to noise varies markedly from day to day, an employer may use weekly personal noise exposure in place of daily personal noise exposure for the purpose of compliance with these Regulations.

4. 5 Steps to risk assessment

The following outlines the five steps to complete an assessment of the risk to health created by noise;

Step 1- Identify the hazards

In most cases it should be possible to identify those activities and workplaces where noise levels are significant. As a general guide to this, the following should be considered;

- If noise is intrusive but normal conversation is possible, likely noise level is approximately 80 dB (A).
- If you have to shout to talk to someone who is 2 metres away, likely noise level is approximately 85 dB (A). If you have to shout when the person is 1 metre away then the noise will be approximately 90dB (A).
- A tractor, power mower or hand drills are likely to generate at least 90 dB (A).

- Sounds peaking of over 140 dB (C) are liable to cause immediate and lasting hearing damage rather than accumulating over time.
- The decibel scale used to measure noise is logarithmic, an increase in 3 dB equates to a doubling of sound. The increase from 80 to 85 dB is almost a fourfold increase in sound level.

Any risk assessment must take into account not only the noise level but how long staff are exposed to it. For example an individual working in an area where the noise level is 80 dB (A) would have a personal exposure of 80 dB (A) if they working in that environment for 8 hours. However, working in an area where the noise level was 85 dB (A) for 2 hours per day would give a personal exposure of 80 dB (A).

In order to identify whether there is a significant risk from noise the following should be considered;

- Ask employees which if any tools, machines, processes involve regular exposure to noise. This will lead to a list of tools and jobs.
- Consult equipment handbooks which should declare noise levels. This may be provided by the manufacturer: however, manufacturers' data will often come from testing under specific controlled conditions which are very different from normal working practices and therefore may significantly underestimate exposures in practice. Additional information may be sought from equipment suppliers.
- Ask members of staff if they have any symptoms associated with work related noise levels.
- Observe specific working practices.

Step 2 - Identify all persons who may be at risk

If there is likely to be a risk the next stage is to identify who may be at risk. In considering the potential for people to be harmed, it is important to consider the possibility of hearing damage and also risks to safety such as noise interfering with communications.

This can be achieved by making a list of employees who use noisy machinery or equipment and which jobs they do. Also list those who have outlined concerns or stated that they have symptoms of hearing loss.

Ensure that you consider others who may be affected by the work activity, these will include students, members of public and contractors.

Step 3 - Assess whether current controls are adequate

An estimate of the daily personal noise exposure (Lep,d) of employees at risk should be made and compared with the exposure action and limit values. The estimates of noise levels must be reliable enough to be able to assess whether any exposure action levels are likely to be exceeded. Reliable information will include noise

measurements for specific tools or equipment, if specific measurements are required; ensure that these are carried out by a competent person using specialised equipment.

The Health and Safety Executive (HSE) have produced noise exposure calculators which can help you work out your daily noise exposure, weekly noise exposures, and estimate the performance of hearing protection. This resource can be accessed via the Health and Safety Executive website at;

<http://www.hse.gov.uk/noise/calculator.htm>

Action should be taken to reduce risks from noise to as low as reasonably practicable. These controls should include the following;

- Consider whether the work can be done another way which then eliminates or reduces exposure to noise.
- Replacing tools/equipment/vehicles with alternatives which create lower levels of noise.
- Shielding or enclosure (of either a piece of equipment or the operator).
- Ensuring all equipment is properly maintained.
- Reducing time exposed to noise e.g. regular breaks, job rotation etc. every halving of the time spent in a noisy area will reduce noise exposure by 3 dB.
- Design and lay out the workplace to minimise noise exposure;
 - use absorptive materials within the building to reduce reflected sound, e.g. open cell foam or mineral wool;
 - keep noisy machinery and processes away from quieter areas;
 - design the workflow to keep noisy machinery out of areas where people spend most of their time.
- Providing hearing protection.

Hearing protection should only be used as an additional measure after noise has been reduced by other means or as a temporary measure when other methods of controlling noise are being developed or installed.

Staff must be provided with hearing protection when;

- they ask for them and their noise exposure is between the lower and upper exposure action values. The aim of hearing protectors is to get below 85 dB (A) at the ear;
- their noise exposure exceeds the upper exposure action values. In this case line managers must ensure that staff are wearing the hearing protection.

Line managers need to identify hearing protection zones, i.e. areas where the use of hearing protection is compulsory, and mark them with signs indicating that hearing protection must be worn. Access to hearing protection zones should be restricted and the workplace carefully monitored.

Staff must be provided with training and information on;

- The nature of risks from exposure to noise.
- The exposure limit values and upper and lower exposure action values.
- The significant findings of the risk assessment, including any measurements taken, with an explanation of those findings.
- The availability and provision of personal hearing protectors, how to use and care for the equipment.
- Why and how to detect and report signs of hearing damage;
- The entitlement to health surveillance, and
- Safe working practices to minimise exposure to noise and their responsibilities to report any concerns or defects to equipment to their line manager.

Step 4- Record the findings

The risk assessment should include an action plan which documents the measures already in place to reduce the risk from noise exposure and any further measures planned.

The noise risk assessment can be a stand-alone document, or can be incorporated into the overall risk assessment document for a school or service.

Step 5 - Monitor and review the risk assessment

It is the responsibility of the line manager to regularly check that controls introduced are effective. This will involve talking to employees, ensuring that hearing protectors are being worn and stored correctly and well maintained and monitoring health surveillance results as necessary.

It is strongly recommended that the risk assessment should be reviewed if there is any change in noise levels and on an annually basis.

5. Health surveillance

It is the responsibility of Line Managers to identify staff requiring health surveillance for noise risks through risk assessment and ensure that they are referred to the University Occupational Health Service. Health surveillance is required if there is a risk that an employee's are likely to be frequently exposed above the upper exposure action values, or are at risk for any reason, for example they already suffer from hearing loss.

The University Occupational Health Service will provide a tiered approach to health surveillance. Line managers will need to ensure that they refer any member of staff when they start in a role that will expose them to noise or those changing jobs so that a baseline can be taken.

This will be followed by a programme of regular checks (usually initially annually, leading to 3 yearly checks) these may be more frequent if any problems are detected or where the risk of hearing damage is high.

All individual records will be held in confidence. Where appropriate summary results for groups of employees may be reported back to a manager, this will provide information on the effectiveness of any noise controls which are in place.

Further information of health surveillance and the Occupational Health Service referral form is available on the website at; <http://www.bristol.ac.uk/safety/health/>

Job descriptions need to be specific about detailing hazards which may affect an individual's existing health condition/disability or that has the potential of causing a new health conditions/disability. Therefore any job role where the risk assessment indicates that there is a risk to the health of staff exposed to noise must outline the hazard in the job description. This information is required to enable the individual to self de-select early in the recruitment process if the job is clearly not suitable. Further guidance is available on the Human Resources website.