

Health and Safety Department

## **Hand Arm Vibration Safety Policy**

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## 1.1 Purpose

It is the policy of Loughborough University to ensure that all staff who use hand-held power tools and equipment are prevented from developing hand-arm vibration related health conditions. Examples of roles which are at higher risk when frequently using hand-held power tools are the Grounds and Gardens and maintenance teams.

Regular and frequent exposure to hand-arm vibration can lead to permanent health effects. This is most likely when contact with a vibrating tools and equipment is a regular part of a person's job. Occasional exposure is unlikely to cause ill health.

A fundamental requirement of this policy is to reduce exposure to 'as low as reasonably practicable'. Restricting exposure to just below the Exposure Action Value may still result in many workers developing hand-arm vibration syndrome (HAVS).

## 1.2 Scope

This policy applies to all work involving the use of hand-held power tools and equipment, ensuring that the necessary controls are in place to prevent, or where this is not possible, to reduce the risk so far as is reasonably practicable to human health and safety.

The policy applies to all staff, students (both postgraduate and undergraduate) and personnel (e.g. contractors) at workplaces under the control of Loughborough University.

## 1.3 Definitions

- Hand Arm Vibration (HAV): Mechanical vibration transmitted from work processes into an employee's hands and arms.
- Handheld Equipment: pedestrian lawn mowers, hedge cutters, strimmer's, and backpack blowers.
- Exposure Action Value (EAV) – 2.5 m/s<sup>2</sup> A (8) (exposure averaged over a day)  
Wherever exposure at or above this level occurs, actions (including health surveillance) are required to control the risk.
- Exposure Limit Value (ELV) – 5 m/s<sup>2</sup> A (8) (exposure averaged over a day) This is the maximum vibration exposure permitted for any individual on a single day.
- Trigger time – it is the actual time an employee's hands are in contact with the equipment, not the overall time it takes to complete the job

## 1.4 Effects of vibration injury

Employees whose hands are regularly exposed to vibration may suffer from symptoms due to pathological effects on the muscles, circulatory and nervous system, and other tissues of the hand and arm. Where they affect the hands or arms the symptoms are collectively known as hand-arm vibration syndrome (HAVS). HAVS symptoms may include the following components.

- **Neurological** symptoms of HAVS include numbness and tingling in the fingers, and a reduced sense of touch and temperature. This nerve damage can be disabling, making it difficult to feel, and to work with, small objects.

- **Vascular** - Episodic finger blanching is the characteristic vascular sign. This is sometimes known as 'vibration white finger', 'dead finger' or 'dead hand'. The main trigger for the symptoms is exposure to the cold, for example being outdoors early on a winter's morning. The symptoms can also be triggered by localised or general body cooling in otherwise warm environments. Although vibration causes the condition, it does not precipitate the symptoms.
- **Muscular** and soft tissue. Employees may complain of joint pain and stiffness in the hand and arm. Grip strength can be reduced due to nerve and muscle damage. An individual employee suffering from HAVS may not experience the complete range of symptoms, for example symptoms related to the neurological component can be present in the absence of vascular problems and vice versa. Neurological symptoms generally appear earlier than finger blanching. Carpal tunnel syndrome, a disorder of the hand and arm giving rise to tingling, numbness, weakness, pain and night waking, can be caused by exposure to vibration.

The symptoms of HAVS are usually progressive with continuing exposure to vibration. There will be individual variation in the timing and rate of deterioration. The degree to which symptoms regress on removal from exposure to vibration is not known with any certainty and the condition may be irreversible.

## 2. Key legislative requirements

- Control of Vibration at Work Regulations 2005.
- The Health and Safety at Work (etc) Act 1974
- Provision and Use of Work Equipment Regulations 199
- The Management of Health and Safety at Work Regulations 1999

## 3. Duty holders

### 3.1 Deans of Schools/Heads of Professional Services

Deans of Schools/Heads of Professional Services shall:

- Nominate a person(s) (usually the Departmental Safety Officer) to implement the vibration regulations within the department or section, and ensure they have the necessary skills and competence.
- Support the nominated person(s) in implementing measures to comply with the vibration regulations.
- Ensure all managers and employees within the department discharge their responsibilities in accordance with this policy.
- Seek confirmation from School/Service staff that arrangements are still effective
- Ensure training and competencies for all relevant staff and students.

### 3.2 School/Department Safety Officers or Responsible Person (RP)

SSO's/DSO's/RP shall monitor the effectiveness of any control measures and make recommendations to the Dean of School/Head of Service as necessary. In particular:

- Monitor that all HAVs operations are in accordance with the policy and ensure the asset list is kept up to date with the vibration magnitude and historical maintenance records are kept.
- Assist in training of all staff, students and visitors
- Audit risk assessments documentation to verify that suitable and sufficient assessment are in place and up to date.
- Suitable personal protective equipment (PPE) is provided where appropriate and is maintained to a good order. Reusable items are regularly examined for faults, damage, wear and tear.
- Verify that plant, equipment and engineering controls are maintained in accordance with the agreed maintenance schedule.
- Liaise with occupational health service to arrange health surveillance if its suspected that staff are exceeding the EAV.

### 3.3 Line Managers/Academic Supervisors

Staff who are responsible for managing the activities carried out by students and staff, have a duty to ensure the health and safety of the students/staff they supervise and have responsibilities where their students/staff operate handheld power tools and equipment.

Line managers are responsible for the health and safety of the staff/students they manage and others who may be affected by their work.

Line Managers/Academic Supervisors will ensure:

- Understand the scope and content of the Vibration regulations where this is relevant to work in their area
- Ensure vibration factors are considered when hiring or purchasing new equipment
- Ensure that necessary vibration risk assessments have been undertaken for any equipment used by those in their charge
- Implement and enforce vibration control measures, in conjunction with the Departmental safety officer
- Ensure employees are suitably trained in all aspects of operating equipment, including vibration control

### 3.4 Occupational Health Service

The Occupational Health Advisor shall:

- Provide health surveillance on request
- Give feedback and guidance on risk to individuals following health surveillance
- Feedback group results from health surveillance to the appropriate manager

- Advise the appropriate manager if there are restrictions on an individual's ability to work due to health risks.

### 3.5 Facilities Services Grounds & Gardens

The Facilities Services Grounds & Gardens shall:

- Ensure all operational staff use the Reactec monitors when operating handheld tools and equipment.
- Ensure Occupational health service are aware of staff who are likely to exceed the action value.
- Make staff have received suitable and sufficient training.

### 3.6 Employees, students and visitors

Employees and students shall:

- Attend training as requested by the SSO/DSO
- Ask for approval prior to purchasing handheld tools and equipment.
- Carry out HAVs risk assessments before commencing work. required.
- Co-operate with the University to implement any control measures identified in the HAVs risk assessments
- Report any defects or deficiencies in these measures (e.g. problems with PPE, or concerns regarding tooling.
- Dispose of tools and equipment in accordance with School arrangements

## 4 General Requirements and Guidance

### 4.1 Purchase and acquisition

The following requirements relate to both the purchase and acquisition of all vibrating handheld tooling.

Buy smooth – purchase handheld tooling and equipment which has a low vibration magnitude and low noise emissions.

Create an asset list of all handheld tooling and equipment.

Ensure all handheld tooling is maintained with records are regularly updated.

### 4.2 Hand Arm Vibration risk assessment Risk assessments

The fundamental requirement of the risk assessment is to enable managers to control the risk to prevent injury to employees. Furthermore, hand-arm vibration shall be managed in such a way to reduce the exposure level to As Low AS is Reasonably Practicable (ALARP). Where guidance on exposure times is given in the risk assessment, these should be treated as

maximum exposures and every opportunity should be taken to reduce exposure below the action value (EAV).

When conducting the risk assessment, the following steps should be followed:

- Identify all existing powered tools, equipment and machinery which potentially pose a risk of hand arm vibration.
- Review and observe the conditions under which such powered tools, equipment and machinery are used to obtain a true and representative appreciation of the nature of the work
- Identify the maximum duration of their use ('trigger time') in any working day, if necessary, by keeping a log or using monitoring devices
- Assess the vibration magnitude from each piece of equipment used. This information 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 from on-site measurement or from databases of vibration levels may be required.
- Consider individual factors such as pre-existing health conditions that may increase risk from vibration exposure for individual employees;
- Ensure that employees use equipment correctly. Poor posture, technique etc. may increase vibration exposure from a particular activity by up to 50% compared to colleagues.
- Contact the LU safety team to discuss the most appropriate approach to managing vibration for your specific activities.

The risk assessment should detail the measures in place to reduce the risk from vibration exposure and where applicable may include an Action Plan indicating any further measures planned. The vibration risk assessment can be a standalone document, or can be incorporated into task specific risk assessment document for a department or process where this is more appropriate

Before being used, noise and hand-arm vibration information shall be passed to operators stating the risk to the individual and making it clear how long the equipment can be used without risk (maximum trigger time) and the type of hearing protection required when it is being used.

### 4.3 Training

Line Managers and Supervisors shall be responsible for ensuring that those in their team are properly trained in the safe use of the tools they are using. The training should include the manufacturers' advice on tool use and maintenance. Advice on minimising tool use, maximum usage times, the cumulative effect of using different tools on the same day and how to report any concerns they have should be included.

In conjunction with the University Health, Safety and Risk Manager and the Occupational Health Advisor, the appointed person (in FM the FM Health and Safety Manager) will arrange suitable training for Supervisors, Line Managers and Operatives when they take up post at the University and thereafter every three years or following the introduction of new working arrangements. The training will include advice on; -

- using tools as recommended by their supervisors,
- the measures taken to eliminate or control the risk due to hand- arm vibration
- the exposure limits and action values and what they represent, including the cumulative effect of using more than one vibrating tool or piece of equipment,
- the measurement of vibration, particularly regarding trigger or contact times
- the content of the risk assessment and how it is used to help control the risk
- why and how staff can identify and report signs of injury,
- the arrangements for health surveillance for those identified as at risk,
- the collective results of the health surveillance appropriate to staff
- the requirement to follow instructions given on safe working practices, report problems with their equipment (such as perceived unusually high vibration) and cooperate with this programme of control measures.
- Tools and equipment shall only be used by those trained to operate them safely.

Training and information shall be given to employees on the risks of vibration, and the various control measures to reduce the risk.

All employees whose work might expose them to handheld vibration will be given suitable training.

Supervisors will receive the same training with additional material relating to the vibration action plan and their role within it, the rules adopted to ensure that maximum daily use is not exceeded

(cumulative exposure) and the requirement of and how to use the departmental 'Vibration Spreadsheet' the HSE Vibration Calculator and, if appropriate the 'Reactec' monitoring system.

#### 4.4 Health surveillance

Initial health surveillance will be undertaken for all current members of staff who are exposed to vibration. Those who have pre-existing vibration related health conditions or who are considered at increased risk should be referred to the Occupational Health Advisor and Occupational Health Physician as appropriate. Initial health surveillance will be carried out for all new employees who will be exposed to

vibration. Annual surveillance will be carried out for those identified as being at higher risk of vibration related problems if the exposure is likely to be above the exposure action value (EAV).

Supervisors and Line Managers shall ensure that members of staff with existing health problems are protected by appropriate control measures as advised by Occupational Health following health surveillance.

## 5 Specific requirements

### 5.1 The Health and Safety at Work Act 1974

Work to be without risk so far as is reasonably practicable.

### 5.2 The Management of Health and Safety at work Regulations 1999

Employers must assess risk of working with high vibration equipment and taking steps to control the risk as far as is reasonably practicable

### 5.3 The Provision and Use of Work Equipment Regulations 1998

Requires equipment is suitable for the job with respect to the risk involved.

### 5.4 The Control of Vibration at Work Regulations 2005

Implement Control and preventative measures including health surveillance.

## 6 Technical references and further reading

### 6.1 L140 HAVs Guidance outlining what an employer's duties are under the Control of Vibration at Work Regulations 2005

<http://www.hse.gov.uk/pubns/priced/l140.pdf>