

Version	6
Last Revision Date	August 2016



HS 26

Hand-Arm Vibration Syndrome (HAVS) Policy



DOCUMENT CONTROL

POLICY NAME	Hand-Arm Vibration Syndrome (HAVS) Policy
Department	Human Resources
Telephone Number	01443 425536
Initial Policy Launch Date	2003
Reviewing Officer	Mike Murphy
Review Date	August 2018
Date of Equality Impact Assessment	2008

REVISION HISTORY

Date	Revised By
2003	Gerwyn Hogben
2010	Mike Murphy
2012	Mike Murphy
2013	Mike Murphy
2014	Mike Murphy
August 2016	Mike Murphy

DOCUMENT APPROVAL

This document has received approval from:	Date of Approval:
HR Senior Management Team	
Corporate Management Team	
Cabinet	

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1. INTRODUCTION

- 1.1 Employees who frequently and regularly use vibrating equipment could suffer permanent damage to nerves, blood vessels and joints of the hand, wrist and arm.
- 1.2 Hand-Arm Vibration Syndrome (HAVS) caused by exposure to vibration at work is preventable, but once the damage is done it is permanent.
- 1.3 This policy has been produced in response to the Control of Vibration at Work Regulations.

2. POLICY STATEMENT

- 2.1 The Council will take all reasonable steps to ensure the health and safety of its employees who are/will be exposed to vibration in the course of their employment.
- 2.2 The Council recognises that health and safety hazards may arise from using vibrating equipment and will, so far as is reasonably practicable, ensure that any risks are reduced to a minimum.
- 2.3 The Council will ensure that employees who use vibrating equipment receive adequate information and training on the precautions to be taken.
- 2.4 The Council is committed to introducing and maintaining a 'Health Surveillance Programme' for employees who are at risk from using vibrating equipment.
- 2.5 Forming part of this policy document is guidance for managing risks from the use of vibrating equipment, which will assist managers in ensuring that the risks are adequately controlled.
- 2.6 It is recognised that there may be instances where agency workers undertaking work on behalf of the Council may be exposed to vibrating equipment. In these circumstances the Council shall ensure the health and safety of the agency workers is protected to the same degree as its employees, and will liaise with the employing agency to meet this requirement.
- 2.7 The responsibility for implementing the requirements of this policy and for the preparation of an implementation strategy rests with each Director or Head of Service.

POLICY GUIDANCE

3. WHAT IS HAND-ARM VIBRATION SYNDROME (HAVS)?

- 3.1 Hand-arm vibration (HAV) is vibration transmitted from work processes into workers' hands and arms. Whilst occasional exposure is unlikely to cause ill health, regular and frequent exposure can lead to permanent health effects.
- 3.2 Hand-arm vibration can result in damaged nerves, blood vessels and joints of the hand, wrist and arm, as well as a reduced blood supply, leading to a range of conditions collectively known as hand-arm vibration syndrome (HAVS).

The effects of HAVS on employees can include:

- reduced flexibility and strength of grip;
- inability to do fine work;
- inability to work with hand held equipment;
- pain, distress and sleep disturbance;
- difficulty in working outdoors during inclement weather, as the symptoms may be aggravated by cold and/or damp conditions.

As well as severely limiting the jobs an affected employee can do, HAVS can also impact many family and social activities.

4. WHAT ARE THE SYMPTOMS OF HAVS?

- 4.1 Early symptoms include:
 - tingling and numbness (pins and needles) in the fingers;
 - fingertips going white (blanching) and becoming red and painful on recovery (particularly in the cold and wet);
 - not being able to feel things properly;
 - loss of strength in the hands.

Some employees may develop symptoms after only a few months exposure to vibrating equipment, whilst for others it may take years. In each case, however, continued exposure is likely to lead to a worsening of the condition and permanent damage.

5. WHAT CAUSES HAVS?

5.1 Jobs requiring regular and frequent work with vibrating equipment are most likely to result in an employee suffering from HAVS. Examples of such equipment are:

- chainsaws;
- kerb saws;
- power hammers/chisels;
- hammer drills;
- hand-held grinders, polishers and sanders;
- breakers;
- disc cutters;
- powered lawn mowers;
- trimmers/brush cutters.

5.2 The risk of developing HAVS depends on a number of factors, such as:

- the amount of vibration produced by the tool;
- how often the tool is used;
- how long the tool is used for on each occasion;
- the way the tool is used;
- working conditions, including posture and weather conditions;
- the health of the individual.

6. WHAT DO THE REGULATIONS REQUIRE EMPLOYERS TO DO?

6.1 The Control of Vibration at Work Regulations require employers to:

- assess the vibration risk to their employees;
- ensure that risk from the exposure of their employees to vibration is either eliminated at source or, where this is not reasonably practicable, reduced to as low a level as is reasonably practicable;

- decide if employees are likely to be exposed above the daily exposure action value (EAV) and, if they are:
 - introduce a programme of organisational and technical measures to eliminate risk, or reduce exposure to as low a level as is reasonably practicable;
 - provide health surveillance to those employees who continue to be regularly exposed above the action value, or due to individual circumstances continue to be at risk;
- decide if employees are likely to be exposed above the daily exposure limit value (ELV) and, if they are, take immediate action to reduce their exposure to below the limit value and reduce so far as reasonably practicable thereafter;
- provide information and training to employees on health risks and the actions the employers are taking to control those risks;
- consult trade union safety representatives or employee representatives on the employers' proposals to control risk and to provide health surveillance;
- keep a record of the employers' risk assessments and control actions;
- keep health records of employees who are under health surveillance;
- regularly review and update risk assessments.

6.2 The exposure action value (EAV) is a daily amount of vibration exposure above which employers are required to take specific action to control exposure. The greater the exposure level, the greater the risk and the more action employers will need to take to reduce the risk. For hand-arm vibration the EAV is a daily exposure of $2.5 \text{ m/s}^2 \text{ A}(8)$ (equivalent to 100 points using the HSE calculator).

The exposure limit value (ELV) is the maximum amount of vibration an employee may be exposed to on any single day. For hand-arm vibration the ELV is a daily exposure of $5 \text{ m/s}^2 \text{ A}(8)$ (equivalent to 400 points using the HSE calculator). It represents an unacceptably high risk above which employees can only be exposed under exceptional emergency conditions for which stringent conditions apply.

7. RISK ASSESSMENT

- 7.1 In accordance with the requirements of the Health and Safety at Work etc. Act 1974, the Management of Health and Safety at Work Regulations and the Control of Vibration at Work Regulations, managers must ensure that a risk assessment is carried out in order to assess the risks caused by working with vibrating equipment, and to take measures to reduce these risks, so far as is reasonably practicable. This will ensure that the control measures adopted are relevant to the risks involved and will allow for the prioritising of resources. Further information and guidance on completing vibration risk assessments is contained in Appendix A.
- 7.2 Where the risk assessment indicates that an employee is likely to be exposed above the daily exposure action value or the daily exposure limit value, then action must be taken as described in 6.1 above.
- 7.3 It must be remembered that even if employees' exposure is below the daily exposure action value, the Council still has a general duty to protect their health under the Health and Safety at Work etc. Act 1974. As such, the vibration risk to employees should be eliminated where possible and, if not, reduced to as low a level as is reasonably practicable.

8. WHAT ACTION CAN MANAGERS TAKE?

- 8.1 Once it has been identified that work involves hazardous vibration and it has been determined who is at risk, then managers must take action to reduce the risk. They must do all that is reasonably practicable to control the risk.

Risk controls include:

Alternative work methods:

- consider alternative work methods that eliminate or reduce exposure to vibration. Trade associations and journals and equipment suppliers may be able to help identify good practice;
- mechanise or automate the work.

Equipment selection:

- ensure that equipment selected or allocated for tasks is suitable and can do the work efficiently. Equipment that is unsuitable, too small or not powerful enough is likely to take much longer to complete the task and expose employees to vibration for longer than is necessary;
- select the lowest vibration tool that is suitable and can do the work efficiently (NB an unsuitable tool could have a lower vibration rating but result in employees having greater vibration exposure due to tasks taking longer to complete);
- limit the use of high-vibration tools whenever possible.

Replacing old equipment and tools:

- discuss your requirements with a range of suppliers;
- check with suppliers that their equipment is suitable and will be effective for the work, compare vibration emission information for different brands/models of equipment, ask for vibration information for the way you plan to use the equipment, and ask for information on any training requirements for safe operation;
- get employees to try the different models and brands of equipment and take account of their opinions before deciding which to buy;
- find out about the equipment's vibration-reduction features and how to use and maintain the equipment to make these features effective;
- ensure you have a policy on purchasing suitable equipment, taking account of vibration emission, efficiency and your specific requirements;
- ensure employees who order vibrating equipment are aware of the issues relating to vibration so that they can deal effectively with equipment suppliers;
- identify and prohibit work practices which can increase the equipment's vibration magnitude.

Workstation design:

- improve the design of workstations to minimise loads on employees' hands, wrists and arms caused by poor posture;
- use devices such as jigs and suspension systems to reduce the need to grip heavy tools tightly.

Maintenance:

- introduce appropriate maintenance programmes for equipment to prevent avoidable increases in vibration (following the manufacturer's recommendations where appropriate);
- do not use blunt or damaged concrete breaker and chipping hammer chisels, for example, and replace consumable items such as grinding wheels, so that equipment is efficient and keeps employee exposure as short as possible.

Work schedule:

- plan work to avoid individuals being exposed to vibration for long, continuous periods – several shorter periods are preferable;
- where tools require continual or frequent use, introduce employee rotas to minimise exposure times – avoid employees being exposed for periods that are long enough to put them in the high risk group;
- ensure that employee daily exposure logs are maintained.

Clothing:

- provide employees with protective clothing when necessary to keep them warm and dry. This will encourage good blood circulation, which should help protect them from developing HAVS;
- gloves can be used to keep hands warm, but should not be relied upon to provide protection from vibration.

Monitor:

- regularly check that the programme of controls you have introduced is being carried out (including on the job monitoring);
- talk regularly to supervisors, employees and trade union safety representatives or employee representatives about whether there are any vibration problems with any equipment or the way it is being used;
- check the results of health surveillance and discuss with the appropriate member of the Occupational Health and Wellbeing Unit whether the controls appear to be effective or if they need to be changed.

9. WHAT ACTION CAN EMPLOYEES TAKE?

9.1 Employees are able to greatly reduce the risk of developing HAVS. Some effective ways they can do this are as follows:

- inform their manager about any equipment that produces high levels of vibration so that the risks can be properly addressed;
- maintain blood flow in the fingers while working by:
 - keeping warm at work, especially their hands. Wear warm gloves and extra clothes if they work in the cold;
 - exercise hands and fingers to improve circulation;
- ensure they use the right equipment for the job. Using the wrong equipment can lead to more vibration or cause them to grip the tools more tightly;
- not use any greater physical force than necessary to grip or drive/direct equipment;
- avoid lengthy periods of using equipment without a break – short bursts are better;
- keep tools in good working order – if necessary, ask their manager to get them repaired promptly;
- where reasonably practicable, share high risk tasks with other employees to reduce exposure time;
- take an active part in any health and safety courses they are required to attend;

- **do not ignore symptoms.** If they feel vibration could be affecting their fingers, hands, wrists or arms, they must stop work and report the matter to their manager immediately. The manager will then arrange for them to be referred to the Council's Occupational Health and Wellbeing Unit for assessment;
- immediately report relevant medical factors such as diagnosis of diabetes;
- accurately record their daily 'trigger time' in the relevant log.

10. INFORMATION AND TRAINING FOR EMPLOYEES

10.1 Managers need to ensure that employees are provided with information on:

- the health effects of hand-arm vibration;
- sources of hand-arm vibration;
- whether they are at risk and, if so, an estimation of the risk;
- the risk factors (e.g. the levels of vibration, daily exposure duration, regularity of exposure over weeks, months and years);
- how to recognise symptoms;
- how to report symptoms (reporting symptoms early will allow managers to investigate the tools and equipment being used by the individual and their working patterns without delay);
- the need for health surveillance, how it helps them remain fit for work, how it is planned to provide it, how it is planned to use the results and the confidentiality of the results;
- the need to immediately report significant medical factors;
- ways to minimise risk, including:
 - good working practices to reduce vibration exposure;
 - correct selection, use and maintenance of equipment;
 - reporting defects and problems with equipment so that replacements can be obtained when necessary;
 - correct techniques for equipment use, how to reduce grip force, etc.;
 - specific practices to avoid;
 - maintenance of good blood circulation at work by keeping warm and massaging fingers and the benefits of not smoking (smoking reduces blood circulation).

10.2 In addition to training, a method of providing information to employees is by the distribution of 'pocket cards' and/or leaflets. The HSE information sheet 'Hand-arm Vibration – Advice for employees' (INDG 296) may be freely used.

11. HEALTH SURVEILLANCE

11.1 Health surveillance must be provided to all those employees who, despite the preventative actions that have been implemented to control the risk, are still likely to be regularly exposed above the exposure action value of $2.5 \text{ m/s}^2 \text{ A(8)}$, or who are considered to be at risk for any other reason. The frequency of surveillance shall be decided by Occupational Health in line with HSE guidelines and/or individual circumstances.

11.2 The purpose of health surveillance is to:

- identify anyone exposed or about to be exposed to hand-arm vibration who may be at particular risk, for example people with blood circulatory diseases such as Raynaud's Disease (see also Section 12 below);
- identify any vibration-related symptom at an early stage in employees regularly exposed to hand-arm vibration;
- help prevent disease progression and eventual disability;
- help people stay in work;
- check the effectiveness of vibration control measures.

11.3 The health surveillance programme will be undertaken by managers in conjunction with the Council's Occupational Health and Wellbeing Unit, who can be contacted on telephone number 01443 494003. The health surveillance programme will be provided through a tiered approach from levels 1 to 5:

Tier 1 – a short questionnaire to establish the status of employees moving into work with vibrating equipment, or to establish an initial baseline status for employees already working with vibration;

Tier 2 – a short questionnaire used once a year for employees exposed to vibration to check whether they need referral to level 3. After 3 years of reporting no symptoms, employees will need to be assessed by an Occupational Health Nurse/Adviser;

Tier 3 – a HAVS health assessment by an Occupational Health Nurse/Adviser. If the assessment shows the employee is displaying symptoms that require further investigation, a referral to level 4 will apply;

Tier 4 – a formal diagnosis carried out by an Occupational Health Physician. This level will advise on the employee's fitness for work and any adjustments or restrictions that may be necessary to the workplace or work activities. In most instances, a management review meeting involving all interested parties will be held;

Tier 5 – optional and involves referral of the employee for specialist tests for HAVS. The results may help the doctor more accurately assess the stage of the illness and therefore fitness for work.

- 11.4 Medical records will be maintained on a personal file at the Occupational Health and Wellbeing Unit in accordance with the Confidentiality Code and the Data Protection Act.

12. PRE-PLACEMENT AND PRE-EXIT MEDICAL EXAMINATION

- 12.1 At pre-placement stage, an assessment will be undertaken by the Occupational Health Adviser (and, if necessary, the Occupational Health Physician) before a decision is made to appoint, i.e. the individual will need to be medically cleared (regarding factors intrinsic to the post) before they commence employment in any post involving the use of vibrating equipment. Similarly, any employee leaving a post involving the use of vibrating equipment will be screened (unless they have received screening within the previous 6 months) to provide an adequate pre-exit health status record.

13. ADVICE

- 13.1 Advice on the implementation of this policy can be obtained from the Health and Safety Team, Human Resources, Ty Elai, Williamstown, CF40 1NY, telephone 01443 425531.

MANAGERS GUIDE TO VIBRATION RISK ASSESSMENT

The aim of the risk assessment is to help you decide what you need to do to ensure the health and safety of your employees who are exposed to vibration.

Your risk assessment should:

- identify where there might be a risk from vibration and who is likely to be affected;
- contain a reasonable estimate of your employees' exposures;
- identify what you need to do to comply with the law e.g. whether vibration control measures are needed and, if so, where and what type;
- identify any employees who need to be provided with health surveillance and whether any are at particular risk.

You must record the findings of your risk assessment. You need to record in an action plan anything you identify as being necessary to comply with the law, setting out what you have done and what you are going to do, with a timetable and saying who will be responsible for the work.

You will need to review your risk assessment if circumstances change and affect exposures. Also review it regularly to make sure that you continue to do all that is reasonably practicable to control the vibration risks.

To carry out your risk assessment you will need to identify whether there is likely to be a significant risk from hand-arm vibration.

You should:

- decide which, if any, processes involve regular exposure to vibration;
- see whether there are any warnings of vibration risks in equipment handbooks;
- ask employees if they have any of the HAVS symptoms and whether the equipment being used produces high levels of vibration or uncomfortable strains on hands and arms.

It is important during this whole process to discuss hand-arm vibration with your supervisors, employees and the trade union safety representative or employee representative. You will need to provide reassurance to your employees about their job security and to explain why co-operating with your risk control measures and health surveillance programme will be in their best interests.

If there is likely to be a risk you need to assess who is at risk and to what degree. The risk assessment needs to enable you to decide whether your employees' exposures are likely to be above the EAV or ELV and to identify which work activities you need to control.

You could do the risk assessment yourself or appoint a competent person to do it for you. For example, this could be an external consultant. The person who does the risk assessment as a minimum should have read and understood this policy, have a good knowledge of the work processes and be able to collect and understand relevant information. They should also be able to develop a plan of action based on their findings and ensure it is introduced and is effective.

They will need to:

- make a list of equipment that may cause vibration, and what sort of work it is used for;
- collect information about the equipment from equipment handbooks (make, model, power, vibration risks, vibration information, etc);
- make a list of employees who use the vibrating equipment and which jobs they do;
- note as accurately as possible how long employees' hands are actually in contact with the equipment while it is vibrating – in some cases this 'trigger time' may only be a few minutes in several hours of work with the equipment;
- ask employees which equipment seems to have high vibration and about any other problems they may have in using it, e.g. its weight, awkward postures needed to use the tool, difficulty in holding and operating it;
- record the relevant information they have collected and their assessment of who is likely to be at risk.

How should I use this information?

Group your work activities according to whether they are high, medium or low risk. Plan your action to control risks for the employees at greatest risk first. Your rough groupings could be based on the following:

High risk (above the ELV)

Employees who regularly operate:

- hammer action tools for more than about one hour per day;
or
- some rotary and other action tools for more than about four hours per day.

Employees in this group are likely to be above the exposure limit value set out in the Regulations. The limit value could be exceeded in a much shorter time in some cases, especially where the tools are not the most suitable for the job.

Medium risk (above the EAV)

Employees who regularly operate:

- hammer action tools for more than about 15 minutes per day;
or
- some rotary and other action tools for more than about one hour per day.

Employees in this group are likely to be exposed above the exposure action value set out in the Regulations.

Do I need to measure my employees' exposure to vibration?

The rough groupings described above should be enough for you to do a basic risk assessment, which will enable you to decide whether exposures are likely to exceed the exposure action value and exposure limit value and to allow you to plan and prioritise your control actions effectively. For further information see 'What Action Can Managers Take?' (Section 8 of this policy).

Alternatively, you may choose either to use available vibration data or to have measurements made to estimate exposures if you want to be more certain of whether the risk is high, medium or low. A more detailed exposure assessment may help you:

- decide which control actions might be most effective and practicable in reducing vibration exposure;
- be more certain whether exposures are likely to exceed the action or limit values;
- check whether your controls are effective.

If you decide to do this, read 'Estimating Exposure', below.

Estimating Exposure

You may be able to get suitable vibration data from the equipment handbook, or from the equipment supplier. See Table 1 for examples of vibration levels HSE has measured on equipment in use. There are also some databases on the internet which may have suitable vibration data.

If you plan to use the manufacturer's vibration data, you should check that it represents the way you use the equipment since some data may underestimate workplace vibration levels substantially. Ask the manufacturer for an indication of the likely vibration emission of the tool when your employees are using it. If you are able to get vibration data from the manufacturer, which is for common tools and is reasonably representative of the way you use the equipment, it should be suitable for you to use in estimating your employees' exposure.

Table 1 - Some typical vibration levels for common tools

Road breakers	Typical	12 m/s ²
	Modern tool designs, good operating conditions and trained operators	5 m/s ²
	Worst tools & operating conditions	20 m/s ²
Demolition hammers	Modern tools	8 m/s ²
	Typical	15 m/s ²
	Worst tools	25 m/s ²
Hammer drills/ Combi hammers	Typical	9 m/s ²
	Best tools & operating conditions	6 m/s ²
	Worst tools & operating conditions	25 m/s ²
Needle scalars	Modern tool designs	5 – 7 m/s ²
	Older tool designs	10 – 25 m/s ²
Scabblers (hammer type)		20 – 40 m/s ²
Angle grinders (large)	Modern vibration-reduced designs	4 m/s ²
	Other types	8 m/s ²
Angle grinders (small)		2 – 6 m/s ²
Clay spades/jigger picks	Typical	16 m/s ²
Chipping hammers (metal-working, foundries)	Typical fettling	18 m/s ²
	Modern tool designs	10 m/s ²
Pneumatic stone-working hammers	Vibration-reduced hammers and sleeved chisels	8 – 12 m/s ²
	Older tools, conventional chisels	30 m/s ²
Chainsaws	Typical	6 m/s ²
Brushcutters	Typical	4 m/s ²
	Best	2 m/s ²
Sanders (random orbital)	Typical	7 – 10 m/s ²

You also need to check, by observing them, how long employees are actually exposed to the vibration (i.e. the total daily 'trigger time' with the equipment operating and in contact with the employee's hand(s)). Employees are unlikely to be able to provide this information very accurately themselves. You could observe and measure the trigger time over, for example, half an hour and then use the result to estimate the trigger time for the full shift.

If the employee is exposed to vibration from more than one tool or work process during a typical day, you will need to collect information on likely vibration level and 'trigger time' for each one.

Once you have collected relevant vibration data and exposure times you will need to use an exposure calculator to assess each employee's daily exposure:

<http://www.hse.gov.uk/vibration/hav/vibrationcalc.htm>

Alternatively, you can use the simple 'exposure points' system in Table 2 to estimate the daily exposure:

Table 2 - Simple 'exposure points' system

Tool vibration (m/s²)	3	4	5	6	7	10	12	15
Points per hour (approximate)	20	30	50	70	100	200	300	450

Multiply the points assigned to the tool vibration by the number of hours of daily 'trigger time' for the tool(s) and then compare the total with the exposure action value (EAV) and exposure limit value (ELV) points.

100 points per day = exposure action value (EAV)

400 points per day = exposure limit value (ELV)

Workplace vibration measurements

If you want to obtain vibration measurements for your own tools you will need to arrange for a competent person to carry out measurements for you using specialised equipment. Measurement results can be highly variable, depending on many factors, including the operator's technique, the condition of the work equipment, the material being processed and the measurement method. The competence and experience of the person who makes the measurements is important so that they can recognise and take account of these uncertainties in producing representative vibration data.

MANAGERS CHECKLIST

	✓ As Appropriate		
	N/A	Yes	No
• Has a suitable and sufficient risk assessment been carried out to assess the risks caused by working with vibrating equipment?			
• Has action been taken to reduce the risk as a result of the assessment?			
• Are you aware of the action to take to reduce vibration?			
• Are employees (and agency workers) aware of the action to take to reduce the risk of developing hand-arm vibration syndrome?			
• Are employees (and agency workers) given appropriate information and training when using vibrating equipment?			
• Are health surveillance procedures in place?			
• Where appropriate, are pre-placement and pre-exit medical examinations carried out?			
• Are there monitoring procedures in place to ensure the requirements of the policy are being met?			
• Where appropriate, are daily exposure logs being maintained?			

Completed by: _____
(Signature)

Confirmed by: _____
(Signature)

Name: _____
(Print)

Name: _____
(Print)

Designation: _____

Designation: _____

Date: _____

Date: _____