Working together for better workplace health

VIBRATION : Hand and arm
Vibration

What is Hand Arm Vibration?
Hand Arm Vibration (HAV) is vibration transmitted from work processes into workers' hands and arms. It can be caused by operating hand-held power tools (such as road breakers), hand-guided equipment (such as compactors), or by holding materials being processed by machines (such as pedestal grinders).

Regular and frequent exposure to HAV can lead to a combination of neurological, (nerves) vascular (circulation) and musculoskeletal symptoms, (collectively referred to as hand arm vibration syndrome [HAVS]) and also to carpal tunnel syndrome. This is most likely when contact with a vibrating tool or work process is a regular part of a person’s job. Occasional exposure is unlikely to cause ill health.

Use of the following has been identified as causing HAVS:
- Road breakers
- Clay spaders / jigger picks
- Demolition Hammers
- Hammer drills/combi hammers
- Pneumatic stone working hammers
- Needle Scalers
- Angle grinders
- Chipping Hammers
- Chainsaws
- Sanders

What is HAVS?
HAVS affects the nerves and blood vessels of the hand. It can become severely disabling if ignored. It includes vibration white finger (VWF), which can cause severe pain in the affected fingers.

What is Carpal Tunnel Syndrome?
Carpal tunnel syndrome is a nerve disorder which may involve pain, tingling, numbness and weakness in parts of the hand, and can be caused by, among other things, exposure to vibration.
Identifying HAVS
Identifying the signs and symptoms at an early stage is crucial to preventing serious long-term health effects.

**Indications of hand arm vibration syndrome are:**

- *in the cold and wet, fingers go white, then blue, then red and are painful (VWF)* (Although cold is the usual trigger symptoms may occur when it is not a particularly cold day)
- *loss of sensation in the fingers*
- *pain, tingling or numbness in the hands, wrists and arms*
- *loss of strength in hands (inability to pick things up or hold heavy objects)*

**What is the health surveillance for Hand Arm Vibration?**
The Control of Vibration at Work Regulations (COVWR, 2005) has established the necessity for health surveillance at exposure action value (EAV) over an average eight hour working day, (A8) of 2.5 m/s² using triaxial measurements or where deemed necessary by risk assessment. The introduction of the lower EAV together with a reduction in the exposure limit value (ELV) of 5.0 m/s² means that many more workers will require health surveillance.

To support the Control of Vibration at Work Regulations 2005 the HSE have produced a calculator to assist in calculating exposures for hand-arm vibration. A guidance leaflet is also provided. http://www.hse.gov.uk.

Where risk assessment has demonstrated a need for health surveillance, individuals have presented with symptoms or already have HAVS, then the tiered approach to HAVS (L140, HSE) should be followed. The tiered approach to health surveillance for HAVS includes the following elements:

**Tier 1**  
Administration of a pre-placement Questionnaire

**Tier 2**  
Administration of a Routine Questionnaire (Annually)

**Tier 3**  
Nurse led clinical assessment

**Tier 4**  
Diagnosis by a Doctor

**Tier 5**  
Standardised tests (optional)

The current guidance has also suggested that health professionals (both doctors and nurses) conducting health surveillance for HAVS should have training from a Faculty of Occupational Medicine approved HAVS training course leading to a qualification approved by the Faculty or equivalent level of competency.

A suitable pre-placement questionnaire for hand arm vibration syndrome should be completed by the job applicant and returned directly to an occupational health provider for assessment (HSE Tier 1). A decision on “fitness for work with exposure to hand transmitted vibration” should be recorded with any advised restrictions.
Within the health surveillance programme, a suitable questionnaire for HAVS should be completed by the employee and returned to the designated responsible person to file in the employee’s health record (HSE Tier 2). Where any questionnaires indicate possible symptoms, a copy should be forwarded to the occupational health provider with a referral for assessment (HSE Tier 3).

All individuals who are reporting symptoms should be seen by a qualified person for assessment of their condition (HSE Tier 3 and 4).

It is recommended that every third year (whether symptoms have been reported or not) that the employee should be assessed by a qualified person (nurse or doctor) (HSE Tier 3). Any positive findings should lead to referral to an appropriately qualified doctor so that a diagnosis of HAVS can be confirmed or excluded (HSE Tier 4). Provision should be made for referral for standardised tests if considered appropriate on the advice of the doctor (HSE Tier 5).

When an initial diagnosis of HAVS has been made (at any stage) the employer should be advised of this fact with the employee’s consent and this must then be reported as a case of disease for the purposes of the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 1995.

**Purpose of health surveillance for Hand Arm Vibration**

- To identify and warn employees who might be suffering from an early stage of HAVS and report findings to management to enable steps to be taken to reduce the risk of HAVS.
- To identify whether there are adequate control measures in place to prevent HAVS by obtaining information on ill health, including anonymised grouped results.
- To ensure the employee receives appropriate medical assessment and support.
- Educate employees about the risk to health from vibrating tools and the need to comply with workplace policies and procedures regarding exposure to vibration at work, and the safe use of PPE.
- Frequency of Assessments
  - At pre-placement health assessment if the risk assessment identifies the employee is at risk of vibration from any part of their job.
  - Where employees are identified as being “at risk” of HAV via risk assessment undertaken by management.
  - If an employee consults occupational health/management complaining of symptoms which could be associated with HAVS.
  - Newly-exposed workers should be reviewed 6 months after commencing work with vibrating tools or earlier if there is any indication of HAVS developing.
  - The HAVS screening questionnaire should be carried out annually. This may be done by a responsible person who has received training on HAVS or by an occupational health professional. If any signs or symptoms arise at this stage, then the employee must be referred to occupational health and seen by a suitably qualified OHA. More frequent assessment may be necessary for an employee with a diagnosis of HAVS.
  - Regardless of whether signs/symptoms are identified at annual screening, all employees exposed to HAV should be seen by occupational health every 3 years.
Relevant Regulations

This list is not exhaustive:

The Health and Safety at Work etc Act 1974

The Management of Health and Safety at Work Regulations 1999 (as amended)

Equality Act 2010

The Data Protection Act 1998

Access to Medical Reports Act 1998

The Control of Vibration at Work Regulations (COVWR, 2005)

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR)

Conducting health surveillance for Hand Arm Vibration

The Occupational Health Service Provider (OHSP) should first have decided at which tier the HAVS assessment is. i.e:

**Tier 1.** Short questionnaire used at a pre-placement stage. The questionnaires will be treated as medically confidential, and sent to the OHSP. Replies to this will determine whether an OH Assessment (tier 3) is indicated.

**Tier 2.** Short questionnaire issued annually to employees exposed to vibration, to determine whether they need to be referred for tier 3 assessment. Tier 2 questionnaires may be processed by the ‘responsible person’, (provided employees have consented to the system). If a tier 1 or 2 assessment does not identify any symptoms; referral to an OH Advisor is not indicated. However, if individuals who are exposed to hand transmitted vibration (HAV) have 3 ‘negative’ tier 2 assessments, they should be referred for a tier 3 assessment, to ensure symptoms are not being overlooked. (If no symptoms are reported, a concurrent Tier 4 assessment does not need to be booked).

**Tier 3.** HAVS health assessment by a qualified person (e.g. OHA). If this suggests an individual has HAVS, they should have a Tier 4 assessment. In theory, if an individual has no evidence of HAVS, a Tier 4 assessment will not be indicated. Tier 3 will comprise of completion of a questionnaire, and a clinical examination. This is not a full medical examination, but a targeted assessment. It will involve assessment of vascular and neurological function, and also an assessment of musculoskeletal disorders, grip strength and manual dexterity.

**Tier 4.** This involves a formal diagnosis being made by a competent OH Physician, to allow advice on fitness to work, and reporting under RIDDOR. Accurate reporting under RIDDOR relies on an accurate diagnosis of HAVS by the OH Physician. The reported symptoms are the most important diagnostic information. The OH Physician may wish to confirm the history or findings of the Tier 3 assessment as part of the Tier 4 assessment.
The doctor will provide the employer with an assessment of the individual’s fitness to work. If as a result of Tier 4 assessment, the OH Physician confirms HAVS at a sufficiently severe stage, consideration about ongoing employment is required. This may involve job redesign or redeployment to an area where further exposure to HAV does not take place.

**Tier 5.** This is optional, but involves referral to a specialist centre for testing. The results may help the doctor assess fitness for task. In additional to the clinical assessment of levels 3–4; it is possible to conduct standardised tests at specialist centres. These aim to provide a quantitative assessment of the severity of HAVS.

**Flow chart for health surveillance for HAVS (HSE guidelines, 2005):**

**Level 1 & 2:** Initial assessment using a screening questionnaire, if symptoms reported then move onto level 3.

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**Level 3:** Assessment, Clinical History and Examination by a Qualified Person, (OHA/OHP), if HAVS is suspected move onto level 4.

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**Level 4:** Diagnosis by a Doctor

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**Level 5:** Optional - Standardised Tests

**Advice to Employee**

Provide relevant health education, employee awareness leaflet, inform employee to notify Manager of any changes between health surveillance checks

**Advice to Employer**

When an initial diagnosis of HAVS has been made (at any stage) the employer should be advised of this fact with the employee’s consent and this must then be reported as a case of disease for the purposes of the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013

**Record keeping**

Appropriate occupational health notes should be completed with a record of health surveillance.
Reports
A Health Record should be set up, including:

- Employee surname and forenames
- Gender
- Date of birth
- Permanent address and postcode
- National Insurance number
- Date of commencement of present employment

A historical record of jobs involving exposure to processes requiring health surveillance in this employment.

Date and results of the HAVS assessment, with any conclusions only relating to an individual’s fitness to work

Conclusions should be expressed in terms of the employee’s fitness for task and will include the conclusions of the occupational health professional or responsible person, but NOT “confidential clinical data.” Health records should not contain personal medical information. This must be kept separately and in confidence by the OHSP.

Each health record should be kept up to date and retained for as long as the employee is under health surveillance. It is good practice to offer individual workers a copy of their health records when they leave the job.

What should you do?
Develop a simple policy for vibration. An example vibration policy is given on the page??

Identify someone who is to be responsible for vibration on site

This could be a manager or supervisor. You should ensure that they have been given sufficient training and information to recognise vibration related hazards and risks.

The long term effects of exposure to vibration can be permanent and disabling

Put some control measures into place and make sure they are regularly checked to be working well

- assess the risk to the health of your workers and plan for its control
- check that you are providing the best tool for the job, talk to the hire company regarding the new Traffic Light System:
Red - High Risk - Avoid use

Amber - Med Risk - 2 hours max daily use

Green - Low Risk - 8 hours max daily use

- make sure that suitable gloves and warm clothing are available for anybody who would benefit from them
- keep tools sharp and well maintained, provide suitable storage for tools to prevent them getting too cold and put in place a maintenance program
- organise work and rotate staff to avoid lengthy and continuous use of vibrating tools or machines, review this on a regular basis
- ensure that there are facilities for rest periods in warm dry shelter with hot drinks
- ensure that your workers are trained and informed of the hazard and what they should do to reduce the risk for example:
  - potential sources of vibration and the related health effects
  - how to recognise and report signs of injury
  - safe selection and use of equipment and how to use tools to reduce grip force, strain etc
  - maintenance of good blood circulation at work eg. by keeping warm, exercising fingers and not smoking
  - look for alternative ways of working which eliminate the vibrating equipment altogether eg. design out the need to cut and scabble concrete or use remote control vibrating equipment
  - provide health surveillance for your workers where risks cannot be completely eliminated
  - if users report signs of vibration white finger or whole body vibration, move them away from work with vibrating tools or machinery and take steps to have them checked by their own doctor or an OHSP.

Additional control measures could include:

I. Review whether job can be done without use of high vibration tools

II. Make sure new tools have vibration control built in

III. Modify existing tools to reduce vibration levels or the grip force needed

IV. Regular breaks from vibration recommended, i.e. job rotation where possible

V. Training should be provided in the correct use of vibrating tools

VI. Provide heating or suitable clothing and gloves

VII. Ensure correct maintenance of tools.
Example vibration policy


We consider that preventing vibration injury or ill health in our business will improve morale and contribute significantly to our profitability by reducing potential losses.

In consideration of their special needs, we will take additional measures to secure the safety of young workers (under eighteen years old).

Operations involving vibrating plant or machinery will be assessed; training in correct operating procedures can significantly reduce the risk of injury and will be provided for staff involved in all operations identified as having a significant risk.

All operations identified as having a significant risk will have the results of the assessment recorded, whether or not the assessment can easily be repeated, in order to demonstrate that it can be carried out.

Signed

(Chairman / Managing Director / Senior Partner)

Date

Expert help is available from:

Constructing Better Health
Contact us for impartial and confidential advice:

tel: 0845 873 7726 or click on www.cbhscheme.com

CBH accredited occupational health service providers listed on the CBH website

Further information regarding preventative measures can be found on the HSE website in the Construction Occupational Health Management Essentials toolkit (COHME).

www.hse.gov.uk