HELPING YOU UNDERSTAND THE RISKS FORM HAND-ARM VIBRATION

Exposure to hand-arm vibration can result in a number of ill-health conditions. As a result, exposure to excessive levels needs to be adequately controlled to avoid this and any potential employers’ liability claim.

Over the last few years, there has been an increase in the number of claims resulting from exposure to vibration – particularly hand-arm vibration. One reason for this may be the continuing uncertain economic climate and the fact that those people who have lost their jobs are more likely to consider making a claim.

Whatever the cause of this upward trend, these disease claims often require detailed and lengthy investigation. This undoubtedly impacts on an employer’s time and can carry hidden cost implications for their business.

Adopting a sensible and proportionate approach to managing this risk will help in complying with the law, and, from an insurer’s point of view, make organisations a more attractive proposition. However, we do find that some employers in the construction sector fail to identify and/or manage the risks of exposure to vibration effectively. This, in turn, makes it difficult to defend ill-health claims and control associated costs.

Common issues we encounter include failings to comprehensively identify significant exposures across the complete range of an organisations activities or any likely ‘hot-spots’ as well as other vulnerabilities in the overall approach to managing the risk. This includes the inadequate assessment of exposures; the review and challenge of the adequacy of implemented precautions and the arrangements for health surveillance.

THE NATURE OF THE PROBLEM

Hand-arm vibration (HAV) can cause damage to the arteries, nerves, bones and muscles of the hands and arms resulting in conditions collectively known as hand-arm vibration syndrome (HAVS) or more specific diseases such as vibration white finger (VWF) and carpal tunnel syndrome.

Groups of employees especially at risk are those that regularly use hand tools or machines which produce high levels of vibration (e.g. concrete pokers, chainsaws, hand-fed circular saws, concrete breakers), grinders and other rotary tools (such as sanders, grinders, scabblers, disc cutters and hammer drills).

Whilst the vibration characteristics of these tools can cause risk, other factors can also exacerbate the problem. These include:

- the manual forces required to operate the tool or carry out the task (such as push and/or grip)
- the degree of exposure depending on the frequency and length of the task taking account of any rest periods between exposures
- the area (or part) of the hand or arm exposed to the vibration
- adverse conditions which affect blood circulation, such as cold temperatures or smoking
- individual susceptibility.
A ROBUST MANAGEMENT APPROACH

Specific Regulations require employers to assess their employees’ exposure to HAV and, where necessary, introduce control measures to reduce vibration exposure and to provide information, training and health surveillance.

WHAT NEEDS TO BE DONE?

General requirements, such as those detailed in the Management of Health and Safety at Work Regulations or the Personal Protective Equipment at Work Regulations will be relevant depending upon particular circumstances. However, specific duties are detailed in the Control of Vibration at Work Regulations.

Employers (including those in the construction sector) must complete a suitable and sufficient risk assessment where employees are exposed to a risk from vibration. Broadly, the risk from exposure to vibration must either be eliminated at source or reduced to as low a level as is reasonably practicable. In addition to this, the Regulations also identify a number of ‘trigger’ values specifying what further action is required where exposure is at or above them.

These values are:

- the daily exposure limit values (ELV) – of 5 m/s² A(8) for hand-arm vibration. This level should not be exceeded. If it is, exposure must be reduced below the value, the reason why identified and precautions improved to ensure it does not happen again. This requirement does not apply where exposure to vibration is usually below the exposure action value but varies markedly over time and may occasionally exceed the ELV, and other conditions are also met (e.g. the averaged exposure over one week is less than the EAV).

- the daily exposure action value (EAV) – of 2.5 m/s² A(8) for hand-arm vibration. At or above these levels, most employers must (where vibration cannot be controlled at source) reduce exposure by implementing appropriate controls.

The regulations also detail how these exposures are to be measured.

Where the risk assessment indicates that there is a risk to the health from vibration or that the EAV will be reached or exceeded, suitable health surveillance must be provided for those employees affected along with adequate information, instruction and training.

A person’s exposure to vibration is calculated on an eight-hour daily exposure equivalent (A(8)) which is measured in m/s². It is based on vibration readings for equipment (which varies for different types of tool and will be affected by how well maintained the tool is) and the amount of time spent with the tool operational (commonly known as ‘trigger time’).

However, just focussing on the measurement of exposure for individuals in this way should be seen as the start of process to manage the risk – not the end. In some instances, we see organisations that complete comprehensive measurements of exposure, but then fail to:

- determine whether the ELV or EAV is or likely to be breached and what action would be necessary in these circumstances
- consider available options to eliminate at source or reduce exposure as low a level as is reasonably practicable, recording any decisions made
- identify ‘hot spots’ or individuals who may be especially at risk
- consider the need for health surveillance and how this is to be implemented effectively
- identify the training and information required for employees, supervisors and others
- monitor the implementation and effectiveness of the precautions that have been identified as being necessary.
IDENTIFYING THOSE WHO MAY BE AT RISK
Because of the nature of construction activities, it is likely that some employees will be at risk from exposure to vibration. It is important therefore to ensure that significant exposures are comprehensively identified across the range of an organisation’s activity.

In particular, there will be a risk where:

- employees and others use hand-held, hand-guided or hand-fed powered equipment; impact or percussive tools; rotary action machines
- manufacturers or suppliers of tools or equipment warn of a risk from vibration
- employees report that they have been affected by vibration.

The information and checks provided by the Health and Safety Executive (HSE) (available at www.hse.gov.uk/vibration/index.htm) can assist in identifying ‘at risk’ circumstances, as well as providing information on the specific regulations and guidance that will apply.

Where general risk assessments are completed by employers to meet the requirements of the Management of Health and Safety at Work Regulations, these should identify circumstances where vibration may be a problem and also determine what (if anything) needs to be done to comply with more specific requirements (i.e. those detailed in the Control of Vibration at Work Regulations).

SPECIFIC VIBRATION RISK ASSESSMENT
Where there is a risk, a specific risk assessment must be completed by someone who is competent to determine the required precautions. Where employing the services of a health and safety consultant, it should be ensured that they are registered on the Occupational Safety and Health Consultants Register (OHSCR). Further information is available at www.oshcr.org.

The significant findings of the assessments will need to be recorded and there should be evidence that they are appropriately reviewed as necessary. Frequently, the adequacy of completed risk assessments can be called into question when defending claims.

Assessments are generally considered to be ‘suitable and sufficient’ where they:

- identify circumstances where there is a risk from vibration
- provide a sound estimate of potential exposure and a comparison with the EAV and ELV – based on observation, reference to relevant information and/or measurement
- identify the existing risk controls and determine their adequacy
- identify those individuals who may be more at risk
- identify any additional precautions that may be required to control and monitor those risks when judged against current statutory requirements and official guidance.

Specifically, the assessment may need to consider:

- the magnitude, type and duration of exposure (including any intermittent or repeated shocks)
- the effects of exposure on those who may be particularly at risk (examples include employees already diagnosed as having HAVS, other musculoskeletal disorders or existing nerve damage affecting the upper limbs; and/or blood circulatory disorders e.g. diabetes)
- any effects on the workplace and work equipment
- information provided by manufacturers or suppliers of equipment
- the availability of replacement equipment
- workplace exposure to whole-body vibration beyond normal working hours, including that in rest facilities supervised by the employer
- other working conditions (e.g. low temperatures)
- appropriate information obtained from health surveillance including, where possible, published information
IMPLEMENTING PRECAUTIONS
Steps should be taken to ensure that where existing controls are assessed to be adequate, that these remain in place and are maintained to the same standard. Where assessments identify that additional precautions are required, these should be implemented.

Control of vibration should be based on eliminating exposure at source or reducing it to the lowest reasonably practicable level. The first approach should always be to remove or avoid exposure to vibration by tackling work in a different way, or by using more efficient or better designed equipment. Obviously this is not possible in all cases, but should be the starting point and should be considered in longer term strategic planning to reduce vibration risk.

Once these fundamental issues have been considered, and exposure has been controlled in this way other precautions that may be required include:
- adequate maintenance programmes
- improving workplace, workstations and rest facilities
- limiting exposure times
- designing work schedules with adequate rest periods
- providing information, instruction and training
- providing clothing to protect employees from cold and damp
- other controls, such as using a colour coding system of equipment to increase employee awareness etc.

EMPLOYEE CONSULTATION
Clearly, implementing adequate precautions that protect the health and safety of employees is key to preventing accidents and ill-health. Frequently though, taking these precautions will rely on the individual employees themselves. This will require them to take health and safety seriously. Actively consulting them - both formally and informally – will help to achieve this.

As such, consultation with employees on the required precautions to prevent the adverse effects of vibration is an important consideration.

HEALTH SURVEILLANCE
As previously mentioned, adequate health surveillance to diagnose or prevent health effects linked to vibration exposure is required where the risk assessment identifies that there is a risk to employees’ health from vibration or that exposure is likely to exceed the EAV. It should also be provided for employees who are diagnosed with HAVS (even when exposed below the EAV).

Construction is a high-risk industry so health surveillance in this sector is recommended. Even if exposure is assessed as unlikely to exceed the EAV, it will still be necessary to carry out basic health screening to identify employees with existing health problems that may make them more at risk from vibration exposure than others.

Gathering health information, carrying out initial health screening and future health surveillance need not be a particularly complex process. However, its implementation has to be properly managed and communicated to employees to ensure that they understand what is being done, why it is being done, the way the information will be used and the potential benefit to them.

Further guidance and a range of resources are provided at:
www.hse.gov.uk/vibration/hav/adviceemployers/healthsurveillance.htm

These should be reviewed and used to check that any implemented arrangements are adequate depending on the particular circumstances.

- Regulations 2005, SI 2005/No. 1093, HMSO
RECORD KEEPING
Record keeping is so important in defending this type of claim. Without adequate and comprehensive records, insurers are at a significant disadvantage in handling them.

In this context, a wide range of records should be retained such as those relating to policy arrangements, risk assessments, details of training and information provided, records of health surveillance, maintenance, inspections and other checks etc.

IS THERE MORE GUIDANCE AVAILABLE
Key references include:

- The Control of Vibration at Work Regulations 2005, SI 2005/No. 1093, HMSO