



Control of Vibration at Work Hand-Arm Vibration Syndrome (HAVS) Procedure

Title:	Control of Vibration at Work HAVS		Author:	Occ Health, Safety and Wellbeing		Owner:	OH&S Centre	
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Introduction

Carmarthenshire County Council is committed to taking all reasonably practicable steps to ensure the health, safety and wellbeing of anyone potentially adversely affected by their role. This procedure is related and/or supplementary to our Corporate Health and Safety Policy and our commitment to promote good health amongst our employees.

The aim of the Council is to ensure that no employee is subject to an unacceptable or unreasonable level of vibration at work by ensuring that there are safeguards in place within working practices to minimise the risk of ill health through the exposure to excessive levels of vibration.

The purpose of this procedure is to define the management standards and arrangements associated with the requirements of The Control of Vibration at Work Regulations 2005 ⁽¹⁾ and to minimise and manage unreasonable levels of vibration in the workplace through:

- Training of staff to recognise the hazards associated with vibration
- Managing and minimising the risk of vibration, injury, pain, and suffering to staff and others who may be affected by our undertaking
- Implementation of a health surveillance program where regular monitoring will recognise any ill health
- Minimisation of litigation and/or claims
- Compliance with the Health and Safety Executive's wider strategic aims of reducing illness and accidents at work

Responsibilities

It is important that the roles and responsibilities for delivering health, safety and risk management within our organisation are clearly defined, communicated and understood. This section of the procedure therefore outlines the roles and responsibilities of relevant persons and forums that together will ensure the effective delivery of this procedure.

Managers should:

- As is reasonably practicable, ensure the health, safety and welfare of all of its employees by assessing the vibration risks and eliminating the vibration risk at source or reducing to the lowest practicable level.

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- Ensure risk assessments are carried out and reviewed regularly and Safe Working Systems are put in place.
- Ensure induction, training and supervision are in place and carried out.
- Assist employees to understand the need for and the benefits of health surveillance by explaining the purpose and the process.
- Encourage employees to take part positively and co-operate fully in the health surveillance programme, explaining its importance and relevance to them.

Employees should:

- Co-operate by attending health surveillance programs in order that the employer can meet their health and safety duties under law.
- Report any symptoms of ill health as soon as they notice them so that prompt action can be taken to prevent further harm.
- Take reasonable care for the health and safety of themselves and of other persons who may be affected by their acts or omissions at work.
- Notify any shortcomings in the health and safety arrangements, even when no immediate danger exists, so that employers can take remedial action if needed.
- Wear Personal Protective equipment provided and to adhere to safe systems of work and local procedures (5).

Occupational Health Practitioners should:

- Carry out health surveillance for the staff identified by manager’s risk assessment as per protocols and the Health and Safety Executive legislation and guidance.
- Give any additional health advice to employees on following Safe Systems of Work, using appropriate Personal Protective Equipment and on reporting any concerns regarding their health.
- Inform the employee of any possible health concerns and refer to the appropriate medical practitioner for further testing/advice.

Health and Safety Advisors should:

- Give advice to managers and employees regarding risk assessments, Safe Systems of Work and health surveillance requirements.
- Assist Occupational Health in setting up new or revising health surveillance programs with the managers.

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- Assist managers to monitor and review risk assessments, Safe Systems of Work and health surveillance requirements.

Definitions

Hand-Arm Vibration Syndrome or HAVS is a condition that has the potential to affect any worker who uses powered hand-held or hand-guided or fed tools as a major part of their job. Workers whose hands are regularly exposed to high vibration may suffer from several kinds of effects to the hands and arm, including impaired blood circulation and damage to nerves and muscles. It is felt as a tingling or numbness in the fingers or where finger blanching (whitening) occurs (**Appendix C**).

The affects are cumulative and as time passes the attacks may involve considerable pain and loss of manual dexterity, resulting in clumsiness and reduced grip strength. In severe cases, blood circulation may be permanently impaired and fingers may take on a blue-black appearance.

As indicated above, the primary cause of HAVS is work involving holding vibrating tools or work pieces. The risk depends on the magnitude of the vibration and how long an individual is exposed to it. Other aspects that can have an effect are the grip, push and other forces used to guide and apply vibrating tools and work pieces, the pattern of exposure, how much of the hand is exposed to the vibration, temperature, smoking and individual susceptibility.

Potential sources of high vibration in the workplace

The following is an indicative list of the types of equipment found in the workplace within the Authority:

- Chainsaws
- Strimmers and mowers
- Blowers and hedge trimmers
- Grinding and other rotary tools
- Powered hammers
- Concrete breakers
- Sanders
- Drills (short duration only)
- Timber and wood machining tools (short duration only)
- Percussive metal working tools
- Percussive tools used in stoneworking

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Exposure limits

The Control of Vibration at Work Regulations 2005 defines two types of exposure limit:

The **Exposure Action Value (EAV)** is the level of daily exposure to vibration, which if exceeded requires certain actions to reduce exposure.

The **Exposure Limit Value (ELV)** is the maximum amount of vibration an employee may be exposed to on any single day.

The vibration level produced by equipment is usually assessed by measuring the acceleration level in meters per second squared (m/s²). The Control of Vibration at Work Regulations 2005 set an Exposure Action Value (EAV) of 2.5m/s² over 8 hours A(8) and an Exposure Limit Value (ELV) of 5m/s² over 8 hours A(8). However, the overriding requirement of the Regulations is to reduce vibration exposure to **as low a level as is reasonably practicable** i.e. to consider whether further reduction is possible even if exposure falls below the EAV. The diversity of work that an individual may be involved in can cause difficulty in accurately assessing exposure because a number of different tools are being used in any one day for variable lengths of time. It should be possible to estimate a cumulative exposure by summing up the typical exposure pattern from the range of equipment used.

It is the aim of the Authority to minimise the risk of HAVS to employees by keeping exposure to vibration as low as is reasonably practicable and where the 2.5m/s² is exceeded, control measures will be put in place to reduce it. The vibration dose received by the worker over a typical working day depends on the duration of exposure as well as the vibration magnitude. To allow different exposure patterns to be compared they are adjusted or normalised to a standard reference period of 8 hours, similar to the approach taken for noise levels. The Control of Vibration at Work Regulations 2005 describes how an exposure normalised to 8 hours A(8) can be calculated. The table below gives the average vibration levels over a working day and the times to reach the exposure levels.

Vibration Magnitude (m/s ²)	2.5	3.5	5	7	10	14	20
Time to reach Exposure Action Value 2.5m/s ² (in hrs)	8	4	2	1	½	¼	8 mins
Time to reach Exposure Limit Value 5m/s ² (in hrs)	>24	16	8	4	2	1	½

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Risk Assessment and Risk Reduction

In accordance with the management of Health and Safety At Work Act 1974 ⁽²⁾ managers must ensure a risk assessment is carried out in order to assess risks caused by working with high vibration equipment and to take measures to control these risks, so far as is reasonably practicable. It is the responsibility of employers to identify activities where the hazard of HAVS is a problem and include it in risk assessments. Where the risk assessment indicates that an employee's daily vibration exposure regularly exceeds $2.5\text{m/s}^2 \text{ A(8)}$ ⁽³⁾ and the risks from HAVS are not adequately controlled then a programme of preventative measures and health surveillance must be introduced.

Ways to establish whether there is a problem and how to reduce it are as follows:

Risk Assessment requires:

- **Assessment of the vibration magnitude** from each piece of equipment used. This information can come from three sources:
 - Accurate data is available from organisations which have measured vibration levels of equipment in real use.
 - In the Authority direct measurement of vibration levels is carried out by using the Castle Pro DX EXCEIO (GA2005). A tri axial accelerometer (sensor) attached to handles of tools and operators are asked to operate machines in a real life operation (e.g. cutting concrete/wood/branches, strimming grass, etc). After 30 seconds, vibration measurement is recorded along with asset ID and make/model of tool. Tools are also re-measured on servicing intervals (normally every 6 months) and tool tags are re-programmed as required.
 - Data 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. If this is the only information available, the numbers should be doubled to allow for 'real world' factors.
- **Identification of who might be affected.**
- **Identification of exposure time for those individuals** ensuring this is the 'trigger time' or 'contact time' i.e. the time for which the operators' hands are exposed to vibration, not the overall time spent on the job.
- **Calculation of daily exposure for individuals**, based on this information, remembering that if more than one tool is used in a day the effects will be cumulative. The Health and Safety Executive have produced a 'calculator' which will enable conversion of working times and vibration magnitudes into an overall exposure factor; and the summation of exposures if more than one piece of equipment is used (<http://www.hse.gov.uk/vibration/hav/vibrationcalc.htm>). In addition to the partial and

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total exposure values, the calculator also uses the vibration magnitudes to produce the following values:

- **Exposure points per hour.** The number of exposure points for every hour of exposure time for the individual tool or process.
- **Time to reach EAV** (Exposure Action Value). This is the total exposure time required for the individual tool or process, before the exposure action value (2.5 m/s² A(8) or 100 points) is reached.
- **Time to reach ELV** (Exposure Limit Value). This is the total exposure time required for the individual tool or process, before the exposure limit value (5 m/s² A(8) or 400 points) is reached.
- **Identification of other risk factors**, for example work in cold or wet environments increases the health risks from vibration exposure.
- **Consideration of individual factors.** For example, the presence of some health conditions may increase risk from vibration exposure and smoking can affect circulation; the way some employees use equipment (posture, technique, force of grip) may increase vibration exposure from a particular activity by up to 50% compared to colleagues.

The risk assessment should include an action plan which documents the measures already in place to reduce the risk from vibration exposure and any further measures planned. It should be carried out in conjunction with the Health and Safety Advisor to ensure that the assessor has the necessary skills and experience. The vibration risk assessment can be a standalone document, or can be incorporated into the overall risk assessment document for a department or process where this is more appropriate (e.g. where the risk from vibration is very low). The risk assessment should be reviewed if there is any change in vibration exposure, post accident or incident (if necessary) and at least every 3 years.

The Environment Department

The system used for the Authority accurately measures vibration exposure based on the point classification mentioned above. Information can be measured and stored with regards levels of vibration of equipment and each individual’s daily exposure limit. The system is able to monitor each individual’s level of daily exposure and provide accurate data for the employer (**Appendix B**). See **Appendix A** for more detailed information on how this system works.

Reducing Risk from Vibration Exposure:

Measures should be put in place to reduce vibration exposure to as low a level as is reasonably practicable – even if vibration levels are below the EAV, consideration should be given as to whether further reduction is practical. Wherever vibration exposures exceed

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nominal levels and definitely wherever they may exceed the EAV, assistance should be sought from the Health and Safety Advisor to assist with risk assessment and reduction of vibration exposure. NB: personal vibration exposure **MUST NOT** exceed the ELV of 5m/s².

Measures to reduce risks from vibration exposure may include:

- Replacing tools and equipment with alternatives which produce lower magnitudes of vibration;
- Ensuring work activities are designed to take into account ergonomic principles, and to encourage good posture;
- Ensuring all equipment is properly maintained e.g. in accordance with a local maintenance policy/procedure;
- Reducing time exposed to vibration e.g. regular breaks, job rotation etc.
- Providing suitable clothing to protect employees from cold and damp; wearing ‘anti-vibration’ gloves is **not** an effective way to reduce risk. In most cases they do little, if anything to reduce vibration reaching the hands and can even increase it. They may also impair the ability of employees to control the equipment. Gloves should therefore be chosen for their ability to keep hands warm and to protect them from accidental injury.
- Providing suitable training and information for all those exposed to vibration.

Health Surveillance

Health surveillance is about having procedures to detect work-related ill health at an early stage and acting on the results. The main aims are to safeguard the health of employees (including identifying and protecting people at increased risk), and also to check the long-term effectiveness of control measures. In the case of hand-arm vibration, one of the specific aims is to prevent employees developing an advanced stage of HAVS associated with disabling loss of hand function. It is possible that employees who are exposed to vibration may have mild symptoms of HAVS. If they are not aware that they have the disease, health surveillance can help them to recognise that the first symptoms of HAVS have started to develop.

Exposure to vibration carries a risk of health effects, this is most likely with exposure above the EAV of 2.5m/s², but may occur at lower levels. HAVS covers a number of different conditions; one or more may be present in an affected individual.

- Vascular disorders (affecting circulation) – commonly ‘blanching’ of the fingers (especially on exposure to cold or to vibration), often followed by blueness/redness as rewarming occurs (**Appendix C**).

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- Neurological disorders – including numbness, tingling of the fingers, reduced strength (grip), reduced sensitivity and loss of dexterity.
- Musculoskeletal symptoms such as joint pain and stiffness, reduced strength and dexterity and Carpel Tunnel Syndrome (CTS) – a condition caused by compression of the median nerve within the carpel tunnel (sheath) at the wrist (**Appendix C**).

Symptom severity worsens with continued exposure; symptoms may be disabling and are generally irreversible. HAVS is reportable under Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) (4) and CTS is reportable under RIDDOR where it is associated with vibration exposure.

Health surveillance must be carried out for employees who are regularly exposed to vibration above the EAV (2.5m/s²), but is also required for those exposed below the EAV if they are at increased risk e.g. if they report a pre-existing diagnosis of HAVS or any other condition which affects circulation or nerve conduction such as diabetes, primary Raynaud’s (a common condition that affects the blood supply to certain parts of the body, usually the fingers and toes), CTS etc.

A simple approach to health surveillance involves working through a number of stages called Tiers. Briefly, this 'Tiered' system works as follows:

Tier 1

This is classed as the initial assessment and will be carried out for all employees who are identified as being at risk of exposure even if exposure is below the EAV of 2.5m/s². It is a short questionnaire used as a first check for people moving into jobs involving exposure to vibration. The replies to the questionnaire will indicate whether they need to be referred to Tier 4 for a HAVS health assessment with the Occupational Health Physician.

Tier 2

This is the annual assessment carried out by the Occupational Health Nurse for those employees exposed at or above the EAV and for those exposed below the EAV who have been identified as being at increased risk of HAVS. It is a short questionnaire to check whether the employee needs to be referred to Tier 4 for a HAVS health assessment with the Occupational Health Physician.

Tier 3

This involves a HAVS health assessment by a qualified person (i.e. an Occupational Health Nurse) every 3rd year or as required. It is a more detailed questionnaire with some basic

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grip and dexterity tests. If the assessment shows that the employee may have HAVS, Tier 4 will apply and the employee will be referred to the Occupational Health Physician.

Tier 4

This involves a detailed questionnaire and a range of specific tests to give a formal diagnosis and is carried out by the Occupational Health Physician, who will advise you on the employee's fitness for work.

Tier 5

This is optional and involves referral of the employee for more comprehensive tests for HAVS to a specialist facility (e.g. Health and Safety Laboratory in Buxton). The results may help the Occupational Health Physician assess fitness for work.

NB:

If an individual reports any symptoms or signs of HAVS at any stage between Tiers 1-3 they will be referred for a Tier 4 health assessment with the Occupational Health Physician.

All individual records will be held in confidence and an anonymous annual report will be available on all employees who have attended for health surveillance and any Tier 4 reviews with the Occupational Health Physician. Where appropriate, summary results for groups of employees will be reported to indicate the effectiveness of vibration control.

Training and Information

Training is provided on assessment and issue of the equipment.

New employees should be made aware of the risks of vibration prior to first exposure, or at least within the first week of employment. In addition, all employees should be given appropriate training in the use of equipment. This should include periodic supervised practice to identify work practices which may increase risk such as poor postures, gripping equipment too tightly etc.

All employees who are exposed to vibration should be given training to include:

- The health effects of hand-arm vibration;
- Sources of hand-arm vibration;
- Whether they are at risk, and if so whether the risk is high (above the ELV), medium (above the EAV) or low;

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- The risk factors (e.g. the levels of vibration, daily exposure duration, regularity of exposure over weeks, months and years);
- How to recognise and report symptoms;
- The need for health surveillance, how it can help them remain fit for work, how it will be provided, and what will happen to the results;
- Ways to minimise risk including:
 - Changes to working practices to reduce vibration exposure;
 - Correct selection, use and maintenance of equipment;
 - Correct techniques for equipment use, how to reduce grip force etc.;
 - Maintenance of good blood circulation at work by keeping warm and massaging fingers and if possible, cutting down or quitting smoking.

NB:

Employees must be encouraged not to ignore symptoms. If they feel vibration could be affecting their fingers or hands they must stop work and report the matter to the manager immediately. He / she will arrange for the employee to be referred to the Occupational Health Advisor.

Make sure you give information in a way the employee can be expected to understand (for example you might need to make special arrangements if the employee does not understand English or cannot read).

Whole Body Vibration

There is also a risk of whole body vibration that can affect those who work with vibrating equipment they need to stand or sit on, e.g. mowers and tractors. The assessment is similar to that for HAVS in that identification of a significant risk should lead to control measures such as equipment modification/maintenance, minimising length of exposure and providing information to staff. More information can be found on the following link:

<http://www.hse.gov.uk/vibration/wbv/>

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Review, Monitoring and Evaluation

The Employee Wellbeing Manager, with the assistance of the Occupational Health Centre, will monitor the delivery of this procedure to ensure that it is clearly understood, and effectively applied. They will pay particular attention to the clarity of the procedures and guidelines, and the ability of managers and employees to discharge their responsibilities under the procedure.

They will collate statistical information on an annual basis in order to monitor the success of the procedure. This will include, for example, the number of employees who have voluntarily sought help and the number of employees referred through management or medical sources.

Monitoring information will be dealt with in strict confidence and will not reveal the identity of individual employees.

References and Further Reading

1. The Control of Vibration at Work Regulations 2005
<http://www.legislation.gov.uk/uksi/2005/1093/contents/made>
2. Health and Safety at Work Act 1974
<http://www.legislation.gov.uk/ukpga/1974/37/contents>
3. The Control of Vibration at Work Regulations 2005. Guidance on Regulations
<http://books.hse.gov.uk/hse/public/saleproduct.jsf?catalogueCode=9780717661251>
4. The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013
<http://www.legislation.gov.uk/uksi/2013/1471/contents/made>
5. The Personal Protective Equipment at Work Regulations 2002
<http://www.legislation.gov.uk/uksi/2002/1144/contents/made>

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Further information:

- Hand- arm vibration, guide for employees. - INDG296(rev2)
<http://www.hse.gov.uk/pubns/indg296.pdf>
- Hand-arm vibration at work –a brief guide INDG175(rev2)
<http://www.hse.gov.uk/pubns/indg175.pdf>
- Health and Safety Laboratory, Buxton: <http://www.hsl.gov.uk/>
- Information on Raynaud’s:
<http://www.patient.co.uk/search.asp?searchterm=raynaud%27s&searchcoll=All&x=11&y=4>
- Information on Carpel Tunnel Syndrome: <http://www.patient.co.uk/health/carpal-tunnel-syndrome-leaflet>
- Health and Safety Executive information on health surveillance for HAVS:
<http://www.hse.gov.uk/vibration/hav/advicetoemployers/healthsurveillance.htm>

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Appendix A

Use of vibrating tools within the authority is risk assessed thoroughly and monitored very closely as per the following process:

Process Map (for implementing HAVS monitoring)

Vibration Measuring

Tools are measured with use of Castle Pro DX EXCEIO (GA2005). A tri axial accelerometer (sensor) attached to handles of tools and operators are asked to operate machine in a real life operation (e.g. cutting concrete/wood/branches, strimming grass, etc). After 30 seconds, vibration measurement is recorded along with asset ID and make/model of tool.

Note – all other equipment used following step 1 are produced and supplied by **Reactec Ltd.**

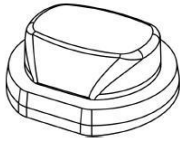
Reactec Analytics Platform



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Step 1 - Programming tool tags

3) Tool Tags*



Recordings from the calibrated Castle Pro DX EXCEIO (GA2005) measuring are uploaded to Reactec-produced excel spreadsheet. The data required being:

- Asset/Plant ID
- Dose value (measurement)
- Source of measurement (which is always in-house for internally produced)
- Tool name/type

Once complete, spreadsheet is exported as .csv file which is uploaded to and accepted by the IPAQ PDA (handheld PC). The IPAQ then transfers the data to the tool tag which is to be permanently attached to tool (by handle or body but in a place where the operator can see the HAV meter) as it contains data relevant to that tool only. **Note** – Reactec currently supplies green, amber and red coloured tool tags so the colour can indicate to the operator that the tool is low, medium or high in terms of vibration it produces.

Step 2/3 - Program Swipe Card

Collect Employee Information:

- Name
- Number
- Whether points system is to be set for healthy person or reduced for those needing to be limited to exposure (e.g. diagnosed with symptoms)

Upload data to the template that has been set for CCC staff and print off using card printer.

Step 4a - Install base station(s)

Base station acts as docking station for HAV meters – where they charge and also receive back information (of operator’s vibration exposure) to central memory. Base station can be installed in office or depot and powered by 3 pin plug adaptor or in the van cab and powered by cable attached to battery.

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Step 4b/5 - Issue HAV meter(s) and swipe card(s) along with training on system

2) HAVmeters



- A LEDs (Green, Amber & Red)
- B Points Display

Inform operatives on how to use system and what it is designed to do. Demonstrate how to use the swipe card to sign out a charged HAV meter (requires 15-20mins as a minimum charge) and if charged, flashes to indicate that operator can remove off base station. If the swipe card does not work, then the operative can sign out a HAV meter by using buttons on the base station's keypad. Then HAV meters are issued out (1 per operative) so that they transfer that HAV meter to their van cab's base station or to depot base station – sharing of HAVS meters must be prohibited, to prevent inaccurate data being transferred for the individual employee.

Step 6 – Transfer of data

After returning a HAVmeter to a Base station the data is now automatically transmitted to a new online HAV reporting system with real-time reports and 24/7 access. Online reports provide Carmarthenshire County Council with:

- Clear HAVS risk and actions to be taken;
- Reports to help manage as well as monitor HAVS risk;
- Central management of employee online access.

Step 7/8 - Review and reporting of data

The Reactec Analytics Platform augments the HAVmeter and Base station with a communications module to automatically transmit data using mobile phone technology to the Reactec cloud based reports server. This negates the need for Carmarthenshire County Council to manually transfer data using the SD card from a Base station to a computer and to load data into Toolminder. Toolminder is no longer required as the Reactec cloud based reports server provides unparalleled ease of access and secure and meaningful reports.

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Appendix B

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Operator	Date	Day Of Week	Maximum Daily Exposure		
			EAV	ELV	Exposure Points
[REDACTED]	18/08/2014	Monday	100	400	2.8
[REDACTED]	20/08/2014	Wednesday	100	400	6.1
[REDACTED]	07/07/2014	Monday	100	400	5.2
[REDACTED]	08/07/2014	Tuesday	100	400	0.1
[REDACTED]	09/07/2014	Wednesday	100	400	0.7
[REDACTED]	15/07/2014	Tuesday	100	400	1.3
[REDACTED]	05/08/2014	Tuesday	100	400	9.5
[REDACTED]	06/08/2014	Wednesday	100	400	4.5
[REDACTED]	15/08/2014	Friday	100	400	8.1
[REDACTED]	19/08/2014	Tuesday	100	400	5.4
[REDACTED]	20/08/2014	Wednesday	100	400	8.4
[REDACTED]	21/08/2014	Thursday	100	400	1.9
[REDACTED]	22/08/2014	Friday	100	400	0.1
[REDACTED]	02/07/2014	Wednesday	100	400	8.7
[REDACTED]	03/07/2014	Thursday	100	400	0.6
[REDACTED]	21/07/2014	Monday	100	400	0.8
[REDACTED]	29/07/2014	Tuesday	100	400	0.2
[REDACTED]	30/07/2014	Wednesday	100	400	2.6
[REDACTED]	31/07/2014	Thursday	100	400	0.3
[REDACTED]	14/08/2014	Thursday	100	400	0.2
[REDACTED]	01/07/2014	Tuesday	100	400	21.7
[REDACTED]	11/07/2014	Friday	100	400	9.1
[REDACTED]	28/07/2014	Monday	100	400	11.0
[REDACTED]	29/07/2014	Tuesday	100	400	17.2
[REDACTED]	30/07/2014	Wednesday	100	400	14.4
[REDACTED]	31/07/2014	Thursday	100	400	24.9
[REDACTED]	12/08/2014	Tuesday	100	400	1.3
[REDACTED]	09/07/2014	Wednesday	100	400	0.0
[REDACTED]	22/07/2014	Tuesday	100	400	104.3
[REDACTED]	23/07/2014	Wednesday	100	400	44.6
[REDACTED]	21/07/2014	Monday	100	400	0.0

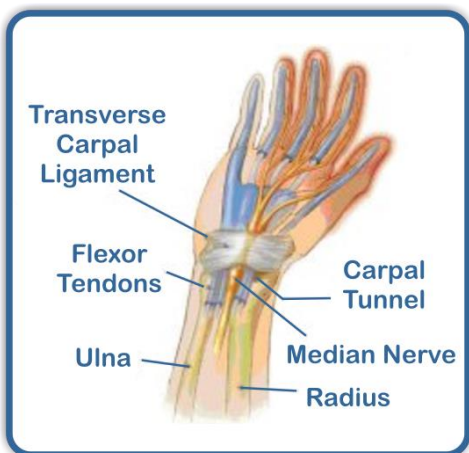
Appendix C

Title:	Control of Vibration at Work HAVS		Author:	Occ Health, Safety and Wellbeing		Owner:	OH&S Centre	
Status:	Guidance	Issue Date:	March 2015	Review Date:	March 2019	Version:	1	Page 18 of 19

Examples of blanching of fingers (white finger)



Carpel Tunnel - where nerves and blood vessels run from the wrist to the hand



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Status:	Guidance	Issue Date:	March 2015	Review Date:	March 2019	Version:	1	Page 19 of 19