Back to Basics on HAVS – Part 2.5: Causation Update

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On 17 July 2023, the Industrial Injuries Advisory Council (IIAC) published two important papers in relation to hand-arm vibration syndrome (HAVS).

HAVS, then known as Vibration White Finger, was first prescribed as an industrial disease by the IIAC over 40 years ago following the publication of its Command Paper Cm 8350 in 1981. The background to the July 2023 publications is that HAVS is currently prescribed by the IIAC under code PD A11. A person who has suffered HAVS may therefore be entitled to payment of Industrial Injuries Disablement Benefit (IIDB). IIDB claims are non-fault, but proof of causation is required and is assessed on the balance of probabilities, meaning discussions of causation in the IIDB context are of potential interest to civil occupational disease practitioners. The process for assessing IIDB claims is that the benefit claimant must first satisfy the occupational criteria listed by the IIAC in respect of HAVS, which are currently the following five combination of occupations or processes (see here):

- the use of hand-held chain saws on wood; or
- the use of hand-held rotary tools in grinding or in the sanding or polishing of metal, or the holding of material being ground, or metal being sanded or polished, by rotary tools; or
- the use of hand-held percussive metalworking tools, or the holding of metal being worked upon by percussive tools, in riveting, caulking, chipping, hammering, fettling or swaging; or
- the use of hand-held powered percussive drills or hand-held powered percussive hammers in mining, quarrying, demolition, or on roads or footpaths, including road construction; or
- the holding of material being worked upon by pounding machines in shoe manufacture.

The benefit claimant is then referred for a medical assessment to confirm a diagnosis of HAVS which requires three criteria to be satisfied (here the IIAC cite *Montracon Ltd v Whalley* [2005] EWCA Civ 1383 as authority for the three-stage test – see Smith LJ at [10]):

1. a history of exposure to vibration sufficient to cause a risk of development of the condition (HAVS);

2. a clinical history and description of symptoms which is consistent with one or more components of HAVS; and

3. the absence of any constitutional explanation for the symptoms.

What constitutes ‘sufficient’ in this context includes both the intensity and duration of vibration exposure.

In a nutshell, the IIAC’s recent publications are of interest to occupational disease practitioners because of the Council’s consideration of the current state of evidence as to the link between HAVS and exposure to hand-transmitted vibration from particular tools and processes, and whether there is now evidence for a link between more tools and processes than those currently listed.

IIAC’s Command Paper, CP 868, 17 July 2023

The first of the two recent documents is Command Paper CP 868, which contains an independent review of the prescription of HAVS in relation to the scheduled list of specified occupations or tasks and tools for HAVS, which is set out above and currently contains five items.

The key thrust of the paper is to consider whether the current prescription is ‘fit for purpose’ and in reality whether it is appropriate to expand (as opposed to constrict) the list to include more tools and processes, and generally revise the categorisations to better reflect modern working-practices and exposures.

In this paper, the IIAC acknowledge that there is a divergence between their current list and the list used by the HSE, which has more items/tools including hedge trimmers and powered mowers. Indeed, there have been other IIAC command papers over the years that have suggested an expanded list that have not been adopted.

The current list also does not include an exposure duration. This is because there are uncertainties in the exposure response link from the epidemiological research.

The IIAC tried two approaches in its recent review.

Approach 1: Application of the ISO 5349-1 model as an approach to assessing exposure equivalence for HAVS.

The IIAC’s rationale here was that this international standard, which was compiled from epidemiological data (chain saws, grinders, and rock drill workers), might be used to assesses approximate equivalence levels of vibration dose for other tools eg. strimmers to those tools and processes already on the current list. In short, the IIAC ruled this approach out as problematic because “*in addition to a variation in individual sensitivity there are other challenges in making a*

diagnosis of HAVS that would preclude using a fixed cut-off of vibration magnitude or years of exposure to assess sufficiency of exposure". For comparison, see the exposure requirement for hand movements to have caused carpal tunnel syndrome at A12 and also, in a different context, the amount of lifetime exposure required by noise to establish causation. In other words, the model was not robust enough for the calculation of a meaningful estimation of dose at the occupation question stage of the IIDB process.

Approach 2: Extension of the list of tools using expert opinion.

The IIAC approached two external experts and asked them whether (i) the current list should be extended and (ii) whether the list of occupations should be added to where there is some epidemiological evidence of an increased risk but not sufficient to confirm 'a more likely than not' question. This led to further consultation with experts on the appropriateness of the current list.

The experts approached by the IIAC advised against limiting terms of prescription, as in the current list, to how tools or machines are used e.g. qualifying that a grinder must have been operated on metal. Interestingly, the following was also noted:

54. The experts felt that there should be no discrimination against an occupation that is shown to involve significant vibration exposures but which for lack of data has no epidemiological evidence of increased risk. Exposure evidence is used by HSE as a surrogate for evidence of disease.

The IIAC's final recommendations were as follows. It remains to be seen whether these are adopted. Please note that no changes are recommended to the 'Health Condition' column.

Recommendations

66. The recommendation of the Council is to replace the current scheduled list with a list of tools and processes. With support from external experts an expanded list has been developed with recommendations to amend the wording in Schedule 1 in PDA11 to as follows:

Recommendation	*Health condition*	*Tools and processes*
A11	*a) Intense blanching of the skin, with a sharp demarcation line between affected and non-affected skin, where the blanching is cold-induced, episodic, occurs throughout the year and affects the skin of the distal with the middle and proximal phalanges, or distal with the middle phalanx (or in the case of a thumb the distal with the proximal phalanx), of:* *(i) in the case of a person with 5 fingers (including thumb) on one hand, any 3 of those fingers, or* *(ii) in the case of a person with only 4 such fingers, any 2 of those fingers, or* *(iii) in the case of a person with less than 4 such fingers, any one of them or, as the case may be, the one remaining finger, where none of the person's fingers was subject to any degree of cold-induced, episodic blanching of the skin prior to the person's employment in an occupation described in the third column in relation to this paragraph, or* *(b) significant, demonstrable reduction in both sensory perception and manipulative dexterity with continuous numbness or continuous tingling all present at the same time in the distal phalanx of any finger (including thumb) where none of the person's fingers was subject to any degree of reduction in sensory perception, manipulative dexterity, numbness or tingling prior to the person's employment in an occupation described in the second column in relation to this paragraph, where the symptoms in paragraph (a) or paragraph (b) were caused by vibration.*	*Tools and processes which are associated with significant exposure to hand transmitted vibration including any hand-held, hand-guided or hand-fed, powered machine (e.g. pneumatic, hydraulic, electric (wired or battery) or internal combustion engine) that:* *a) is fitted with an abrasive or polishing attachment for the purpose of material removal (e.g. grinders, sanders) or finishing (e.g. polishers including floor polishers); or,* *b) is fitted with an attachment such as a cord (e.g. strimmer), blade (e.g. jig saw, cut-off saw, hedge trimmer, brush cutter, etc.) or cutting bit (e.g. woodworking machine or router) for the purpose of cutting, trimming or removing material; or,* *c) is fitted with an attachment such as a drill bit (e.g. rotary hammer) vibrating needles (e.g. needle scaler), scabbling head (e.g. scabbler), tines or spikes (e.g. aerator, scarifier), chisel, pick, spade (e.g. breaker, demolition hammer) for the purposes of making a hole in, or through, or otherwise breaking or removing material; or,* *d) is fitted with a rotating socket, driver bit or other attachment for the purpose of fastening or unfastening a component (e.g. wrench, ratchet, nut runner, impact driver, rivet gun, etc.); or,* *e) is fitted with a ram, plate or roller for smoothing or compaction of material (e.g. plate compactor, trench rammer, sand rammer, concrete screeding machine); or,* *f) which propels or expels a fluid (air or water) for the purposes of cleaning or moving dust, dirt and debris (e.g. leaf blower, water jetting lance); or,* *(g) which has a vibratory action for the removal of air from concrete (e.g. concrete poker).*

Note. An operator may also be at risk of developing HAVS if they grip a workpiece, tool or component as it is worked on or impacted by a machine (e.g. pedestal grinder, polishing machine, drop forge, spring hammer, bucking bar, shoe pounding machine).

IIAC's Position Paper 49

The second of the two recent documents is Position Paper 49 (limitations of epidemiology when investigating occupations with a potential for significant vibration exposure and PD A11, hand-arm vibration syndrome), which fed into the Command Paper.

In summary, this noted a paucity of good quality epidemiological studies for extending the prescribed occupations. It concluded that:

"there is extensive historical epidemiology supporting a doubling of relative risk for tools in Schedule 1 of PD A11, this Position Paper demonstrates that there are limited epidemiological data on other tools that may have equivalent vibration magnitudes. Claimants with symptoms suggestive of HAVS should have detailed occupational and clinical histories undertaken to determine whether workers in these and other occupations with a potential for equivalent vibration magnitudes have been exposed to sufficient intensity and duration of vibration to develop HAVS".

The paper provides a useful resource for those seeking epidemiological studies relevant to specific occupations. Of interest in terms of more recent research are the paper's summary of the limited epidemiology on the following listed occupations:

- gardeners;
- dentists and dental hygienists; and
- orthopaedic surgeons (pneumatic and electric powered saws for cutting bone particularly in large joint surgery, and for removing plaster casts).

Analysis of the Two Recent IIAC HAVS Publications

The main recommendation of the Command Paper is that the currently listed tools and processes, which do appear somewhat over-specific and old-fashioned, should be replaced by more generic tools and processes based on a non dose-related requirement of 'significant exposure to hand-transmitted vibration'. The requirement that certain tools should be used on certain materials has also gone.

In reality, neither publication seems likely to alter the current approach of disease practitioners to the consideration of causation in HAVS cases. Arguably, the IIAC's recommendations in the Command Paper may bring them more into line with the current approach in civil proceedings, which is to consider whether a claimant's exposure to hand transmitted vibration was of a significant level, by calculating vibration exposure on the basis of an A(8) total value (in accordance with BS 6842:1987). This calculation is invariably performed by an expert engineer using occupational vibration surveys or reported exposure values for the tools or processes in question.

If breach of duty is established on the engineering evidence, causation is normally more likely to turn on limbs (2) and (3) of the test for causation outlined above, than the exposure requirement in (1). As practitioners know, causation is more often contentious where there is an alternative constitutional explanation for the symptoms such as carpal tunnel syndrome and/or cubital tunnel syndrome – though note carpal tunnel syndrome is also prescribed by the IIAC in respect of vibration (A12).

The interest lies more in the review of the developing epidemiology in respect of occupational vibration exposure in jobs and professions that do not traditionally produce large numbers of claims.

Nevertheless, a sceptic might consider it over-generous to revise the current list in Schedule 1 of PD A11 in circumstances where the Position Paper found a paucity of good quality epidemiological studies for extending the prescribed occupations (i.e. evidence showing a more than doubling of the risk to allow for causation to be established with reasonable certainty). Instead, the Command Paper proceeded on qualitative evidence from an apparently small number of independent experts.

To read Jack McCracken's first blog on causation in HAVS cases, please click here.

To read Samuel Shelton's blog on breach of duty in HAVS cases, please click here.