

White finger and Hand-Arm Vibration Syndrome (HAVS)

Following publicity for success compensation claims in the local press, a number of patients have asked local GPs whether they have 'white finger'; the characteristic loss of vascular and neural function in the hands seen amongst vibration exposed workers. This Update lists the Sheffield Occupations with significant hand-arm vibration exposure and describes the chief characteristics of HAVS, the international scoring system for HAVS and the basis for differential diagnosis.

Hand-Arm Vibration Syndrome

Initially workers describe tingling or pins and needles following vibration in their hands. After continued exposure, attacks of blanching and numbness may affect the tips of the fingers. These attacks become progressively more frequent, affecting more of each finger and occurring in warm as well as cold conditions. Sensation is progressively more severely affected. The fingers or hand predominantly affected will often give away the primary source of vibration in a patient's work.

Other effects of vibration include carpal tunnel syndrome, damage to the joints of the hands, wrists, elbows and shoulders and possible Dupuytren's contracture.

Only the vascular and neural effects of vibration are recognised as the prescribed disease D9 for state Disablement Benefit. Few cases are assessed by medical boards as sufficiently disabling to attract benefits. The recent exposure has been on civil litigation for damages.

Introducing

Vascular surgeons specialising in secondary Raynaud's phenomenon include Mr. Beard at the Sheffield Vascular Institute at the Northern General Hospital

Differential diagnosis

Consideration must be given to the possibility of primary Raynaud's phenomenon and to other causes of secondary Raynaud's phenomenon.

- Connective tissue diseases: polyarteritis nodosa, scleroderma, systemic lupus erythematosus, dermatomyositis, rheumatoid arthritis.
- Arterial disease: arteriosclerosis, thromboembolism.
- Blood abnormalities: cryoglobulinaemia.
- Trauma: following injury or surgery, frostbite, thoracic outlet syndrome.

Similar peripheral neural effects may result from:

- Nerve entrapment syndromes (carpal tunnel, thoracic outlet, ulnar nerve)
- Peripheral neuropathy (including the effects of solvent exposure, diabetes, alcoholism and medicaments)
- CNS disorders including polio, hemiplegia and multiple sclerosis.

Various tests have been developed to improve diagnosis and quantify damage (see Hand-Arm Vibration, HSE, HS(G) 88, HSE books, 1994). Aesthesiometers for quantifying sensorineural loss are available from SOHP.

Continued overleaf ➤

This bulletin is produced by Sheffield Occupational Health Project. We aim to provide advice tailored to the needs of clinical workers primary care in the Sheffield area. In addition we will feature in each issue the work of a local specialist or group with a particular area of interest in occupational health.

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Occupational Health update

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Treatment, Management

There are a number of improvements to tool and task design and the organisation of work, which will reduce vibration exposure, but frequently workers are faced with a risk of progressive damage in the future. Wearing thermal gloves or working in a warm environment can prolong a worker's ability to continue work. In the current job market, workers are reluctant to give up what is sometimes relatively well-paid employment. In larger firms there may be opportunities to seek changes in work, or a job transfer under the Disability Discrimination Act (see *Update 9*).

A number of treatment options exist (see *Update 3*). After Stockholm stage 2, relatively little recovery of neural or vascular function occurs.

Sheffield jobs with significant hand-arm vibration exposure

Cutlery: polishers, finishers, glazers, grinders, die sinkers.

Steel: forging, furnace wreckers, grinders (swing-hand-held).

Foundry: fettlers, moulders, grinders (hand-held, pedestal).

Engineering: welders, grinders, platers.

Construction and civil engineering: roofers (tile-saws), joiners (woodworking machines, sanders, drills), concreters (pokers, Skilsaws, power floats), labourers (whakers, vibrators, jackhammers, jiggerpicks, angle grinders).

Mining, quarrying: drilling.

Garage mechanics (air spanners)

Horticulture/agriculture/ forestry: tree surgeons.

Cleaners (buffing machines).

Industrial cleaners: (needle guns)

The Stockholm scale

Score each hand separately

Stage	Grade	Description
Vascular component		
0		No attacks
1V	Mild	Occasional attacks affecting only the tips of one or more fingers.
2V	Moderate	Occasional attacks affecting distal and middle (rarely also proximal) phalanges of one or more fingers.
3V	Severe	Frequent attacks affecting all phalanges of most fingers.
4V	Very severe	As in stage 3 with trophy changes in the fingertips.
Sensorineural component		
0SN		Vibration-exposed but no symptoms
1SN		Intermittent numbness with or without tingling
2SN		Intermittent or persistent numbness, reduced sensory perception.
3SN		Intermittent or persistent numbness, reduced tactile discrimination and/or manipulative dexterity