

**Operational  
Policy**

---

Section  
Disablements

---

Subject  
**Determining Permanent Impairment due to Hand Arm  
Vibration Syndrome**

---

## Policy

A worker who has a permanent impairment due to work-related Hand Arm Vibration Syndrome (HAVS) is entitled to a non-economic loss (NEL) benefit, based on the degree of the worker's permanent impairment.

### NOTE

1. The WSIB is directed (section 18, O.Reg 175/98) to use the American Medical Association's *Guides to the Evaluation of Permanent Impairment*, 3rd edition, (revised) (AMA Guides) (1), as the rating schedule for NEL benefit entitlement.
2. HAVS is not specifically mentioned in the AMA Guides). However, vibration may affect three separate body systems. Therefore, the AMA Guides) can be used to determine permanent impairment for each separate body system affected when there is a diagnosis of HAVS. The WSIB's Board of Directors approved medical guidelines for using the AMA Guides) to
  - determine the degree of permanent impairment of each body system affected by HAVS separately
  - convert the permanent impairments of each body system to a permanent impairment of the whole person, and then
  - determine the overall, combined permanent impairment of HAVS.
3. These medical guidelines are used for the HAVS NEL determinations and are available upon request from the WSIB.

(1). American Medical Association, *Guides to the Evaluation of Permanent Impairment*, 3rd edition (revised). American Medical Association, Chicago, 1990.

## Guidelines

### Description of the condition

HAVS is a medical condition that affects workers who use hand-held vibratory tools. HAVS primarily affects workers' hands, but can also affect the feet. Some workers (e.g., raise miners) may sustain direct vibration injury to their feet, and in others, the toes may be affected by reflex vasospasm—a spasm of the blood vessels which results in a decrease in the diameter of the blood vessels.

**Operational  
Policy**

---

Section  
Disablements

---

Subject  
**Determining Permanent Impairment due to Hand Arm  
Vibration Syndrome**

---

**NOTE**

HAVS was formerly known as "vibration induced white finger disease," see (16-01-05, Vibration Induced White Finger Disease).

**Components of HAVS**

A permanent impairment of HAVS may be vascular, neurological and/or musculoskeletal. Vibration-induced permanent impairment to the arteries, nerves and musculoskeletal system are considered to develop independently of one another (2, 3). When determining the degree of permanent impairment from HAVS, the WSIB considers all three components (vascular, neurological, and musculoskeletal) of permanent impairment if they are present.

(2). Pykko, I. et al. A Longitudinal Study of the Vibration Syndrome in Finnish Forestry Workers. Brammer, A. and Taylor, W. (Eds.) Vibration Effects on the Hand and Arm. John Wiley and Sons, New York, 1982, pps. 157-169.

(3). Brammer, A.J., Piercy, J.E., and Auger, P.I., Assessment on Impaired Tactile Sensation: A pilot Study. Scand. J., Work.Environ.Health, 13:pps. 380-384, 1987.

**Symptoms**

For workers with HAVS,

1. **vascular** symptoms include fingers turning white—accompanied by pain and numbness—upon exposure to cold and/or damp environments
2. **neurologic** symptoms include diminished tactile sensitivity and manual dexterity
3. **musculoskeletal** symptoms include deteriorated grip strength and increased muscle fatigue.

**Rating permanent impairment**

A worker's NEL determination is conducted after the worker has achieved maximum medical recovery (MMR), see 11-01-05, Determining Maximum Medical Recovery.

To rate a worker's permanent impairment the WSIB reviews the **component impairments** of HAVS and their effect on the parts of the body involved. For more information see 18-05-03, Determining the Degree of Permanent Impairment, and 18-05-04, Calculating NEL Benefits.

In determining permanent impairment associated with HAVS using the AMA Guides (see "Table: Determining upper extremity permanent impairments associated with HAVS"), the WSIB considers the

- results of clinical and laboratory examination
- frequency and intensity of symptoms, and
- effect of this condition on the worker's activities of daily living.

**Operational  
Policy**

Section  
Disablements

Subject  
**Determining Permanent Impairment due to Hand Arm  
Vibration Syndrome**

**Combined ratings**

The percentage for each component impairment of HAVS is converted to whole person impairment using Table 3 in the AMA Guides. The Combined Values Chart in the AMA Guides is then used to determine the degree of worker's permanent impairment due to HAVS.

**Maximum impairment**

The maximum whole person impairment resulting from HAVS in both lower and upper extremities is 89%.

**Upper extremity**

The maximum **upper** extremity impairment for HAVS is 79%. This is consistent with the percentage provided by the AMA Guides for bilateral amputation of all digits (fingers).

If the WSIB feels that there is an exceptional case where the measured impairment rates the severity of the condition inappropriately, the AMA Guides, provide discretion to increase the rating.

**Lower extremity**

If the worker's **lower** extremities are affected, the additional degree of permanent impairment is determined using the AMA Guides.

**Table: Determining upper extremity permanent impairments associated with HAVS**

Process	Relevant test results	Information considered	AMA Guides Table No.
1. Determine peripheral vascular impairment of the upper extremity (hands and arms).  Do not assess each hand separately.	- finger re-warming - digital blood pressure - digital plethysmography	Frequency and intensity of symptoms, effect on Activities of Daily Living (ADL), results of laboratory tests, number and extent of fingers affected, controllability by type of medication.	Table 16
2. Convert to impairment of the whole person attributable to peripheral vascular disorder.			Table 3
3. Determine neurological impairment of each arm.	- aesthesiometer - vibration perception threshold - Phalen's test	Test results to characterize the symptoms and severity of neuropathy,	Table 10 and Table 14 and Combined Values Chart (used to

**Operational  
Policy**

Section  
Disablements

Subject  
**Determining Permanent Impairment due to Hand Arm  
Vibration Syndrome**

Use results from worse arm	- Tinel's test - appropriate electrodiagnostic studies, (i.e., electromyography, nerve conduction velocity).	frequency and intensity of symptoms, muscle weakness/wastage, proportion of limb affected, effect on ADL	combine findings within the more affected upper extremity)
4. Convert to impairment of the whole person attributable to upper body neurological impairment.			Table 3
5. Determine musculoskeletal impairment (loss of strength) in each arm. If one arm is affected, compare results with those of unaffected arm. If both arms are affected, compare results with data in the AMA Guides tables.	- Jamar dynamometer results - grip and pinch tests	Jamar dynamometer testing results and effect on ADL	Calculation of percentage strength index using Tables 20, 21, and 23, Combined Values Chart
6. Convert to impairment of the whole person attributable to loss of strength.			Table 3
7. Derive total impairment of the whole person due to HAVS using values derived from steps 2, 4 and 6.			Combined Values Chart

**Application date**

This policy applies to all claims with a date of accident on or after January 2, 1990.

**Document History**

This document replaces 16-01-09 dated March 15, 2005.

This document was previously published as:  
04-03-12.

**References**

**Legislative Authority**

*Workplace Safety and Insurance Act, 1997*, as amended  
Sections 2(1), 47  
O.Reg 175/98, section 18

**Minute History**

Board of Directors

**Operational  
Policy**

---

Section  
Disablements

---

Subject  
**Determining Permanent Impairment due to Hand Arm  
Vibration Syndrome**

---

#7, January 18, 1994, Page 5750  
#8(XVI), June 10, 2004, Page 6619

**Minute**

Administrative  
#15, May 26, 2008, Page 461