



VIBRATION

FREQUENTLY ASKED QUESTIONS ABOUT VIBRATIONS

Q What is whole body vibration and when am I exposed to it?

A Whole body vibration occurs when the whole body is exposed to vibration. Tasks such as driving heavy equipment and light vehicles may lead to whole body vibration.

Q What are the effects of whole body vibration?

A Whole body vibration may increase the risk for injury, including low back pain, digestive system problems, female reproductive damage, visual impairment, faults in the vestibular system of the ear and internal organ disruption.

Q What is Hand Arm Vibration Syndrome?

A Hand Arm Vibration Syndrome (HAVS) is a disorder resulting from prolonged exposure to vibration, specifically to the hands and forearms while using vibrating hand tools. HAVS is a painful and potentially disabling condition of the fingers, hands, and arms. Factors such as cold weather, loud noise and tobacco increase the risk of developing Hand Arm Vibration Syndrome.

Q What are the symptoms of Hand Arm Vibration Syndrome?

A Symptoms include numbness, tingling, loss of grip strength and loss of sensation in the fingers.

Q How can you prevent Hand Arm Vibration Syndrome (Vibration White Finger)?

- Use a vibrating tool that has anti-vibration features built in whenever possible.
- Vibration is reduced when tools are well maintained. Tools that are worn, blunt, or misaligned vibrate more. Immediately report any tool that is functioning poorly.
- Keep hands warm to keep blood flowing, regular work gloves and warm clothing (in winter months) are important to avoid getting your hands cold or wet.
- Hearing protection is important in noisy environments, and many vibrating tools are very loud. Noise increases your risk of developing Hand Arm Vibration Syndrome.
- Let the tool do the work. Keep your grip as loose as possible while still keeping control of the tool. A tight grip restricts blood flow, and also allows more vibration to pass from the tool to the body.
- Don't use full throttle unless you need to.
- Work in short durations with frequent breaks. Take at least one 10 minute break every hour.
- Exercise your hands and body to improve circulation
- Avoid smoking or other drugs or substances that inhibit blood flow
- Stay healthy and fit. Maintain a healthy weight. Strong bodies are more resilient against the stressors that cause vibration white finger.
- Maintain good cardiovascular health. Good blood flow to the hands is crucial.



Q Is there a cure for Vibration White Finger?

Although vibration white finger has no known cure there are several treatments that can alleviate the symptoms.

- Stop using vibrating equipment. Vibration white finger is a cumulative disorder. The more you vibrate, the worse it will get.
- Stop smoking and use of tobacco products. Tobacco makes the disorder worse.
- Caffeine, cocaine and amphetamines can trigger bouts of vibration white finger. Remove these from your diet.
- Some prescription and over the counter drugs and supplements may trigger bouts as well. Discuss possible drug interactions with your health care provider.
- Medication - some medications do provide some effectiveness in treating vibration white finger.

Pilbara Iron Health Standards

There are many hazardous situations where Whole Body Vibration and Hand Arm Vibrations are generated on site, and for this reason there are strict controls that have been put in place when dealing with vibrations. [Standard 5.14, Manual Handling & Vibration](#), of the Iron Safe standards deals with the hazard of vibration and is accessible on the Pilbara Iron Intranet.



ERGONOMICS

Ergonomics is the science aimed to optimise the relationship between people, their workplace and working environment. Ergonomics encompasses the body of knowledge about physical abilities and limitations as well as other human characteristics that are relevant to job design. Ergonomic design is the application of this body of knowledge to the design of the workplace (i.e., work tasks, equipment, environment) for safe and efficient use by workers. It involves designing a work area or work station to fit the worker, not the worker to change to fit the work area or work station.

Q. What are the effects of bad ergonomic design?

A. Muscular-Skeletal Disorders (MSDs) such as Repetitive Strain Injuries (RSI), Occupational Overuse Syndrome (OOS), Carpal tunnel syndrome, Muscle strains, tendonitis, lower back pain result from workplace risk factors resulting from poorly designed workstations.

Q. What are the Symptoms of MSDs?

A. Symptoms can vary in their severity depending on the amount of exposure the employee has had but they generally include;

- Numbness
- Burning
- Tingling
- Aching
- Stiffness
- Pain

Q. What are the Signs of MSDs?

- Decreased range of motion
- Decreased grip strength
- Loss of function
- Deformity
- Swelling
- Cramping
- Redness/loss of colour

Q. What should I do if I notice any of these signs and symptoms?

A. Visit your local medical practitioner.

Q. What can I do to reduce my chances of developing MSDs?

A. Make sure that when you move positions, workstations or work locations you're your new work area is ergonomically assessed. You can organise an ergonomic assessment through your local Health and Safety Officer.



General Health Effects of different Working Positions

| <u>Work Position</u> | <u>Body Effect</u> |
|-------------------------------|--|
| Standing in one place | Varicose veins, back stress pooling of blood in legs |
| Sitting without back support | Low back stress, (legs dangling over end) bruises |
| Chair too high | Decreased circulation |
| Shoulders rounded | Upper/lower back stress, respiratory distress. |
| Leaning forward | Lower back stress |
| Arms extended / over reaching | Stress to arm muscles, upper back stress |
| Elbows "winged" | Joint stress at shoulder, poor use of bicep muscles |
| Stepping backwards | Loss of balance, displaced gravity, muscle stress |
| Locking Knees | Stress to back of knee, poor blood circulation |

Pilbara Iron Health Standards

IronSafe Standards [5.15 Ergonomics - Buildings, Fixed Plant and Workshops](#), [5.16 Ergonomics - Mobile Equipment](#) and [5.17 Ergonomics - Office Workstation](#)

of the Iron Safe standards set out the standard followed by Pilbara Iron in relation to workplace ergonomics. These standards are accessible on the Pilbara Iron Intranet.