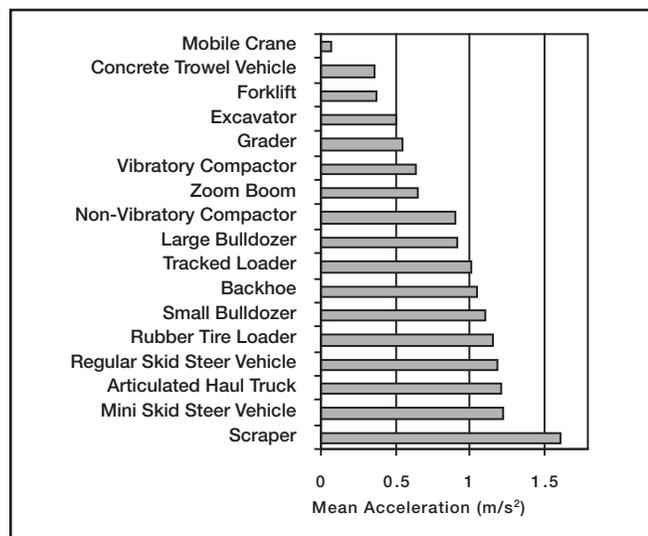


List whole-body vibration hazards on site

Heavy equipment operators are exposed to vibration from bulldozers, backhoes, loaders, skid steer vehicles, excavators, and other construction machines (see graph below). The three main sources of whole-body vibration (WBV) from heavy equipment are

- low-frequency vibration caused by the tires and terrain
- high-frequency vibration from the engine and transmission
- shock from running into potholes or obstacles.



Vibration magnitude for various types of construction equipment. For eight hours of continuous work, the magnitude of vibration should not exceed 0.5 m/s².

Sources: ISO 2631; The European Vibration Directive.

The health effects of WBV have been compared for operators of heavy equipment and for workers in a similar environment but who were not exposed to WBV. With short-term exposure to vibration magnitude at 1 m/s², workers reported symptoms such as abdominal and chest pain, headaches, nausea, and loss of balance. Long-term exposure to WBV can cause serious health problems, particularly related to the spine and the gastrointestinal system.

Recommendations

Until improved equipment comes on the market, heavy-equipment operators should do the following to reduce WBV:

- Report any poorly maintained equipment. A good suspension system and correct tire pressure will help to reduce vibration.
- If your seat has hydraulic dampers and shock absorbers, adjust the seat to your weight and height.
- Slow down when driving over potholes and rough terrain such as shale or rock.
- Report any rough terrain to your supervisor. Other workers may be able to level or smooth-out the road.
- Get out of your vehicle (in a safe location) every hour for a few minutes to stand, stretch, and give your body a break from vibration.

Demonstrate

- Ask the crew to describe any problems they have had with WBV.
- Show them the level of vibration of their equipment using the graph.