

Practical help with workers with Hand-arm vibration syndrome

Industrial diseases cause major problems for millions of people around the world. Workers who use hand-held power tools such as drills, hammers and chain saws for more than a few hours a day can experience disabling pain in their hands, wrists and arms; permanent damage can occur to blood vessels, nerves, muscles and joints. This serious condition can cause a loss of strength and feeling in the hands and affect people's ability to carry out fine work. Their fingers may also turn white in cold weather.

Hand-arm vibration syndrome (HAVS) is now recognised as a specific condition. Researchers at the University of Southampton have been working on these issues for more than 40 years; their understanding and guidance has been instrumental in shaping national and international regulations in this area.

Michael Griffin became Professor of Human Factors in the Faculty of Engineering and the Environment Institute of Sound and Vibration Research (ISVR) in 1991. His multidisciplinary Human Factors Research Unit has investigated HAVS in great depth over the past 20 years. Extensive research, detailed in more than 600 publications, has examined various aspects of human responses to vibration including the hand-arm vibration syndrome and come up with new ways to diagnose the condition, identify the cause of the condition, control the severity of exposures to vibration on vibratory tools, and provide practical help and advice to users.

Key collaborations with centres of excellence within the University of Southampton have brought further insight into the syndrome. Professors David Coggon and Keith Palmer from the Medical Research Council (MRC) Lifecourse Epidemiology Unit worked with Professor Griffin's team, commencing in 1997-8 to carry out the largest survey of the causes and effects of exposure to hand-transmitted vibration involving almost 13,000 people. It found 4.2 million men and 667,000 women in Great Britain are exposed to hand-transmitted vibration at work and highlighted the extent of the problem with policymakers. The European Union took note of the findings and introduced legislation; the ISVR led the development of a guide to the implementation of the EU Directive that was translated into all official languages of the EU. In the UK, The Control of Vibration at Work Regulations became law in 2005 to control the potential for injury from hand-transmitted vibration.

Lessons learned from research at Southampton have resulted in practical help for employers and workers. The UK's Health and Safety Executive offers comprehensive advice and assistance online. The ISVR developed *HVLab* instruments to diagnose the syndrome. They are used by the UK Government's Department of Work and Pensions at sites run by Atos Healthcare to assess workers for compensation. The instruments are also used to decide on whether workers can continue to use vibratory tools or be compensated for injury in the UK courts, in some European countries, and in Japan. The ISVR continues to run short courses to educate companies and individuals about the dangers of vibration.

Looking to the future, the research unit plays a major role in the International Conference on Hand-arm vibration held every four years with industry, regulators and academic partners. The next conference in 2015 will be held in China.

(extra link: <http://www.hse.gov.uk/vibration/hav/index.htm>)