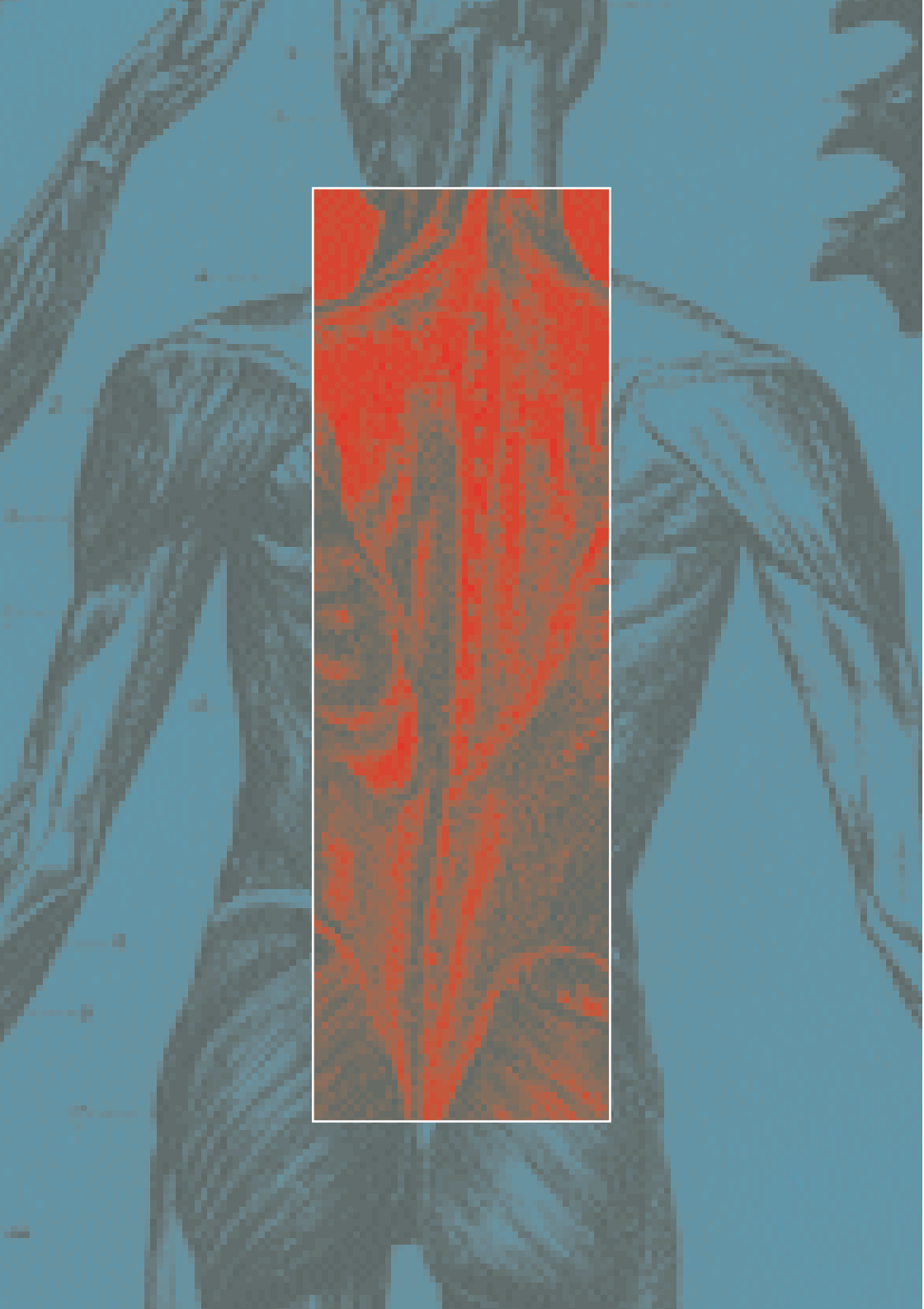




In the

DRIVING

SEAT



IN THE DRIVING SEAT

Advice to employers on reducing back pain in drivers and machinery operators

1 The aim of this leaflet is to make employers aware of vibration as a cause of back pain in drivers and machinery operators. It suggests what you can do to protect your workers from back damage caused by vibration.

2 Hundreds of thousands of workers suffer from back pain at one time or another and the back problems of drivers can be some of the most serious. There is evidence that drivers of some types of industrial vehicles suffer back pain earlier than other workers and that some of them will leave their work at a comparatively young age because of it.

3 The spine is a complex structure of vertebrae and discs supported by ligaments and muscles. Studies have shown damage to the vertebrae and discs in vibration-exposed workers. Once the spine is damaged, severe pain can arise and there is a risk that pain will continue to occur.

4 Costs for employers can be substantial, for example, in lost production, in recruiting and training replacement staff and in increased costs of insuring against claims by employees. Vehicle jolting and vibration may also damage goods being transported, or the vehicle itself, adding further costs.

What sort of vibration causes back injuries?

5 Back damage can be caused by vibration from a vehicle or machine passing through the seat into the driver's body through the buttocks - known as whole-body vibration. Whole-body vibration can also pass from the platform of a vehicle or machine into the operator through the feet.

How much exposure to whole-body vibration is likely to lead to back injury?

6 Regular exposure to whole-body vibration over many months or years can lead to damage and back pain. The longer you are exposed and the higher the level of whole-body vibration, the greater the chances of you suffering a back injury. Once you begin to suffer back pain, continued exposure to vibration is likely to make the pain

worse. Prompt action to protect workers from vibration should stop the damage from getting worse.

7 Hazardous exposure to whole-body vibration can be found in various forms including:

- driving off-road too fast or over a rough route;

- driving on badly-paved surfaces in vehicles with poor suspension.

Are there any other factors involved?

8 Exposure to whole-body vibration is not the only cause of back pain. Other factors which can cause or increase back pain include:

- poor driving posture;

- poor design of controls making them difficult to operate;

- poor driver visibility making twisting and stretching necessary when driving;

- other work activities that might put a strain on the back, for example handling and lifting heavy objects;

- personal factors such as level of general fitness, being overweight, and choice of leisure pursuits.

9 You should look at all these factors when assessing the risk of back injury for your employees.

Who is at risk?

10 Among those most at risk are regular drivers of:

- construction and quarrying vehicles and machinery;

- tractors and other agricultural and forestry machinery;

- industrial trucks, such as lift trucks and straddle carriers;

- road haulage vehicles, rail vehicles, buses etc.

11 Those operating large static compaction, hammering, or punching machinery, for example hammer mills and mobile crushers, can be exposed to high levels of whole-body vibration.

12 Young workers may be at greater risk of damage to the spine as the strength of the muscles is still developing and the bones have not fully matured.

What do I have to do?

13 As an employer, you have duties under health and safety law to protect the health and safety of your employees.

- You should assess the health risks to your workers from whole-body vibration and identify what you need to do to control those risks.

- You should ensure that the equipment you provide for your employees has been designed or adapted to minimise whole-body vibration.

How do I assess risk?

14 Probably the simplest thing to do is to assume that people are at risk if they regularly drive or operate vehicles and machinery, such as those described in paragraphs 10 and 11, for most of the day. Remember that young workers are at greater risk. Manufacturers should warn you if whole-body vibration is a hazard when they supply new machinery (see paragraph 16).

15 Alternatively, you may prefer to arrange for vibration levels to be measured. To do this you may need the help of a vibration expert to measure the whole-body vibration exposure of your workers, assess risk, and recommend what you need to do.

What can I do to reduce exposure to whole-body vibration?

16 Whichever method you use to decide who is at risk, there are things you can do to reduce exposure to whole-body vibration.

- Ensure that vehicles and machinery are adequately maintained, particularly suspension components.

- Check the driver's seat to ensure it is in good repair, and gives good support.
- Check whether a suspension seat is fitted suitable to the vibration characteristics of the machine and if not, whether a suitable seat can be fitted. You may need to talk to the machine's manufacturer about this.
- If a suspension seat is fitted, ensure it is correctly adjusted to the operator's weight according to the manufacturer's instructions (some seats adjust automatically for driver weight).
- Ensure that where equipment in vehicle cabs can be adjusted, it is set to suit the size and reach of drivers expected to use it.
- Choose the right vehicle or machine for the ground surface and task.
- Check that vehicles have the right tyres and that they are inflated to the correct pressure for the ground surface.

- Identify the vehicles or machines and work situations with the highest levels of vibration and arrange a rota for operators or drivers to reduce the time spent on them by individuals.
- Plan work site routes with the smoothest terrain.
- If possible, improve the ground surface over which vehicles have to be driven regularly, for example by repairing pot-holes, clearing debris, or levelling it out.

What can I do in the longer term?

17 Having taken action to reduce the risks from existing equipment, you can take longer term measures to reduce vibration at source by, for example:

- introducing a policy for buying low-vibration vehicles and machinery. In many cases manufacturers of machinery and equipment are now required by law to reduce vibration to as low a level as technically possible and they should be able to provide you with information on vibration for their machines;

- asking manufacturers or suppliers whether they tested the machinery in the way your employees will use it;
- asking manufacturers or suppliers to advise you how to use and maintain the machinery to minimise the effects of whole-body vibration on the operators.

What training should I give employees?

18 Tell employees about whole-body vibration, the risk of back pain and what they can do to prevent injury. Employees need information and training on how to minimise risk, for example on:

- sitting and posture;
- how to adjust the seat for good seating position and posture and, where a suspension seat is fitted, for the driver's weight, especially when different people drive the vehicle;
- ensuring tyre pressures are correct;

- keeping speed low when crossing uneven terrain;
- steering the vehicle to avoid hitting objects and potholes;
- varying their pattern of work to reduce exposure, where possible.

Is there anything else I can do?

19 You can encourage workers to:

- report regular bouts of back pain as early as possible;
- seek medical advice if they think exposure to whole-body vibration is harming them.

Further reading

Management of health and safety at work. Management of Health and Safety at Work Regulations 1999 Approved Code of Practice L21 HSE Books 2000 ISBN 0 7176 2488 9

Safe use of work equipment. Provision and Use of Work Equipment Regulations 1998. Approved Code of Practice and guidance L22 HSE Books 1998 ISBN 0 7176 1626 6

Five steps to risk assessment Leaflet INDG163(rev1) HSE Books 1998 (single copy free or priced packs of 10 ISBN 0 7176 1565 0)

British Standard 6841:1987 *Guide to measurement and evaluation of human exposure to whole-body mechanical vibration and repeated shock*

Further information

HSE priced and free publications are available by mail order from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA
Tel: 01787 881165 Fax: 01787 313995 Website: www.hsebooks.co.uk (HSE priced publications are also available from bookshops and free leaflets can be downloaded from HSE's website: www.hse.gov.uk.)

British Standards are available from BSI Customer Services,
389 Chiswick High Road, London W4 4AL Tel: 020 8996 9001
Fax: 020 8996 7001 Website: www.bsi-global.com

For information about health and safety ring HSE's Infoline
Tel: 08701 545500 Fax: 02920 859260 e-mail:
hseinformationservices@natbrit.com or write to HSE
Information Services, Caerphilly Business Park, Caerphilly
CF83 3GG.

This leaflet contains notes on good practice which are not compulsory but which you may find helpful in considering what you need to do.

This leaflet is available in priced packs of 10 from HSE Books,
ISBN 0 7176 1314 3. Single free copies are also available from
HSE Books.

© *Crown copyright* This publication may be freely reproduced,
except for advertising, endorsement or commercial purposes.
First published 01/97. Please acknowledge the source as HSE.



Printed and published by the Health and Safety Executive on
recycled paper containing 75% post-consumer waste

INDG242 Reprinted 11/03 C150

