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MANAGEMENT REVIEW

Management without theatre.



PEOPLE

LIFTING AND THE BACK: TECHNIQUE IS NOT ENOUGH

Postal workers who learned to lift, nine trials with 20,101 workers, what the law puts before training, where the hands are, and a card for one handling task.

20,101 workers in nine randomised trials: none showed that training in lifting technique prevents back pain.

VERBEEK ET AL., 2011

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In this issue

When backs hurt in a warehouse, a kitchen or on a ward, the usual answer is a course: bend the knees, keep the back straight. It is cheap, it can be signed off, and it puts the answer in the worker's body. This issue asks what the trials found, and what comes before the course.

In a trial with 3,597 postal workers, training raised knowledge but not the lifting, and back injuries were no fewer than after a video. A Cochrane review of nine trials with 20,101 workers found none in which training prevented back pain. In Europe 43% of workers report backache. EU law and HSE put avoiding and reducing the load first; HSE's filter shows the weight that is low risk falling with the hands' distance from the waist. A card for one task closes the issue.

Stiven Janaqi EDITOR · STIVEN CATALYST

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HOW TO READ THIS ISSUE

Figure
Every figure has its source and year at the foot of its page.

Our reading
Where the editor interprets rather than the research, it says so.

Practice
The steps and the card are proposals to try, not research results.

COVER STORY

The postal workers who learned to lift

In a US postal trial, 3,597 workers were randomised in clusters. One group got two sessions of 1.5 hours on proper lifting and carrying, with supervisors involved and follow-up at work; the other got the usual video. The researchers then counted back injuries for five and a half years.

1.08
odds of back injury, trained against video: no difference (95% interval 0.56 to 2.08)

5.5 yrs
of follow-up, rated high quality by the reviewers

The researchers reported separately what had changed: the workers knew more, but their lifting and handling did not improve significantly. Martimo and colleagues, who pooled this trial with ten other studies in the BMJ in 2008, concluded that the findings challenge the widespread practice of advising workers on correct lifting technique.

OUR READING

Knowing how to lift and lifting that way are two things. Neither one changes how heavy the box is or where it sits.

Sources: Kari-Pekka Martimo, Jos Verbeek, Jaro Karppinen et al., BMJ 336(7641), 2008; Jos H. Verbeek, Kari-Pekka Martimo, Jaro Karppinen, P. Paul F. M. Kuijer, Eira Viikari-Juntura & Esa-Pekka Takala, Cochrane Database of Systematic Reviews, 2011

Daltroy et al. (1997) as Martimo et al. (2008) report it; the odds ratio is the reviewers', adjusted for clustering. The change in knowledge but not in behaviour is from the trial's separate report (1993), as both reviews cite it.

THE NUMBERS

How common the sore back is

EU-OSHA put the European surveys together in 2019. Roughly three in five workers reported a musculoskeletal complaint in the past year, and of all workers with a work-related health problem, 60% named these disorders as the most serious one.

WORKERS REPORTING EACH COMPLAINT IN THE PAST 12 MONTHS, EU-28, 2015



32%
carry or move heavy loads at least a quarter of the time (2015)

22%
of injuries in Great Britain with over seven days off came from handling, lifting or carrying (2024/25)

OUR READING

Handling injuries seldom make the list of specified injuries, which are mostly fractures: 5% of them, against 22% of the long absences. The cost shows up as days off.

Sources: European Agency for Safety and Health at Work (EU-OSHA); authors Jan de Kok et al., 2019; Health and Safety Executive, 2025

Bars: self-reports in the European Working Conditions Survey, 31,612 workers, any cause, not only lifting. Figures: EWCS 2015; HSE, employer reports under RIDDOR, provisional. The ranking of injury kinds is in No. 15.

WHAT THE RESEARCH SAYS

Nine trials, one answer

Jos Verbeek and colleagues updated the Cochrane review in 2011: nine randomised trials with 20,101 workers and nine cohort studies with 1,280, among carers lifting patients, mail and baggage handlers, and construction workers. Training was compared with nothing, a video, back belts, exercise or other education.

01	**Training against nothing**	back pain similar; odds ratio 1.17, interval 0.68 to 2.02 (moderate quality)
02	**Intensive training against a video**	similar; in one trial a measuring device gave constant feedback on back load
03	**Training against back belts or exercise**	similar (belts: low quality; exercise: cohort studies only)
04	**Training with lifting aids**	one trial, 346 nurses: similar after a year (low quality)

Where compliance was checked, four of six studies saw lifting change, and still back pain did not. The reviewers note that the textbook leg lift has itself been questioned on biomechanical grounds.

OUR READING

The review tested the worker's technique, not the job. Workplace redesign was outside its scope, so it says little about what redesign would do.

Source: Jos H. Verbeek, Kari-Pekka Martimo, Jaro Karppinen, P. Paul F. M. Kuijer, Eira Viikari-Juntura & Esa-Pekka Takala, Cochrane Database of Systematic Reviews, 2011

Odds ratio from the review's abstract, seven trials, 19,317 workers. Confidence intervals are wide because the reviewers corrected for clustered designs. A reader's comment of 2007, printed with the review, warns that no evidence of effect is not evidence of no effect.

THE MODEL

Avoid, assess, reduce, then train

Germany's Lastenhandhabungsverordnung, which carries out EU Directive 90/269/EEC, sets an order: first avoid hazardous handling by organisation or mechanical equipment; where it cannot be avoided, assess it and keep the risk as low as possible. Instruction is a duty of its own. HSE's guide puts training after avoiding and reducing.

The load

- weight, shape and size
- where it is gripped
- centre of gravity, sudden movement

The task

- posture, twisting, distance from the body
- how far, how often, how long
- a pace the worker cannot change; rest

The workplace

- headroom, changes of level
- heat, humidity, light
- an even, non-slip floor; footwear

HSE puts it plainly: information and training alone will not ensure safe handling, and on its own training cannot make up for missing aids, badly designed tasks, unsuitable loads or an unsuitable workplace.

OUR READING

Most of these features belong to the job, not to the worker's spine. The manager owns them.

Sources: Lastenhandhabungsverordnung, Federal Government of Germany (BGBl. I 1996, p. 1841), implementing Council Directive 90/269/EEC, 2020; Health and Safety Executive, 2020

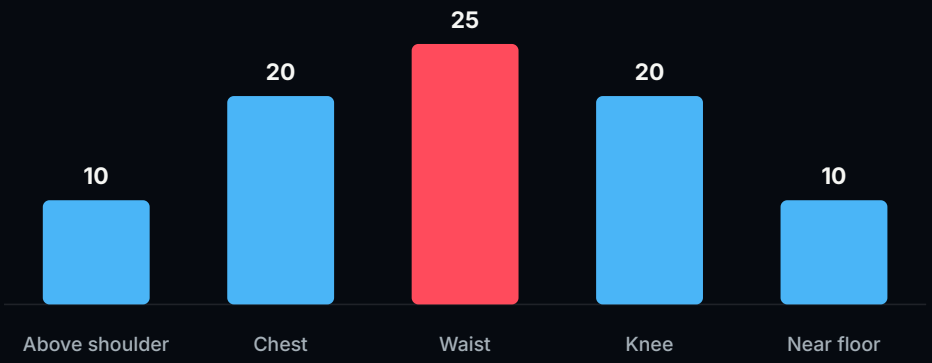
Features from the annex of the Lastenhandhabungsverordnung (§ 2, annex), shortened by the editors; the order of measures from § 2 and from HSE's INDG143. Heat and handling together are in No. 84; floors and footwear in No. 100.

HOW IT IS MEASURED

Where the hands are

HSE's risk filter does not set a safe limit; it marks tasks that are low risk. The weight in each box assumes a load easily gripped with both hands, a stable stance and reasonable conditions. It falls as the hands move away from the waist.

HSE FILTER, MEN, LOAD CLOSE TO THE BODY, KG BY ZONE OF THE HANDS



01	**Arms extended**	lower values: 15 kg instead of 25 between elbow and knuckle; women's values are about two thirds
02	**Look closer if**	the torso twists, lifts come more than once every two minutes, a team lifts, or a load is carried beyond about 10 m

Source: Health and Safety Executive, 2020

Values from figure 1 of HSE's INDG143 (2020), men, hands close to the body; women 7, 13, 16, 13, 7 kg. Zones as HSE draws them, between shoulder, elbow, knuckle and mid-shin height; short names by the editors. Guidelines for groups, not limits for a person. Injury rates are in No. 87, fatigue in No. 89.

TOOL OF THE ISSUE

The handling task card

One card per handling task, filled in where the task is done and with the people who do it. The questions follow the legal order: can it go, can it be lighter or closer, and only then what people need to know. The full assessment belongs in Risk Assessment.

01	**Task and load**	what, from where to where, heaviest weight, how it is gripped
02	**Where the hands go**	lowest and highest point, arms close or extended, twisting
03	**How often, how far**	lifts per hour, carrying distance, pace set by whom
04	**Can it be avoided?**	deliver to the point of use, conveyor, truck, hoist, store at waist height
05	**Can it be reduced?**	smaller packs, handles, shorter route, rotation, ask the supplier
06	**Owner, date, then the briefing**	who changes what by when; what people are told about the task that remains

Sources: Lastenhandhabungsverordnung, Federal Government of Germany (BGBl. I 1996, p. 1841), implementing Council Directive 90/269/EEC, 2020; Health and Safety Executive, 2020

The card is the editors' proposal, built on the order of measures in the Lastenhandhabungsverordnung and HSE's INDG143, not a tested instrument. The author has no essay on lifting; none is linked.

Open the tool: Risk Assessment stivencatalyst.com/tools/risk-assessment/

SOURCES AND METHOD

Every figure has a source.

The figures in this issue come from the sources below. The year shows how recent each one is.

Effect of training and lifting equipment for preventing back pain in lifting and handling: systematic review
Kari-Pekka Martimo, Jos Verbeek, Jaro Karppinen et al., BMJ 336(7641), 2008
https://doi.org/10.1136/bmj.39463.418380.BE

Manual material handling advice and assistive devices for preventing and treating back pain in workers (Cochrane review, CD005958.pub3)
Jos H. Verbeek, Kari-Pekka Martimo, Jaro Karppinen, P. Paul F. M. Kuijer, Eira Viikari-Juntura & Esa-Pekka Takala, Cochrane Database of Systematic Reviews, 2011
https://doi.org/10.1002/14651858.CD005958.pub3

Work-related musculoskeletal disorders: prevalence, costs and demographics in the EU (European Risk Observatory report)
European Agency for Safety and Health at Work (EU-OSHA); authors Jan de Kok et al., 2019
https://doi.org/10.2802/66947

Kind of accident statistics in Great Britain, 2025
Health and Safety Executive, 2025
https://www.hse.gov.uk/statistics/assets/docs/kinds-of-accident.pdf

Manual handling at work: a brief guide (INDG143, rev4)
Health and Safety Executive, 2020
https://www.hse.gov.uk/pubns/indg143.pdf

Lastenhandhabungsverordnung (LasthandhabV) of 4 December 1996, as last amended on 19 June 2020
Lastenhandhabungsverordnung, Federal Government of Germany (BGBl. I 1996, p. 1841), implementing Council Directive 90/269/EEC, 2020
https://www.gesetze-im-internet.de/lasthandhabv/BJNR184200996.html

EDITORIAL METHOD

Each figure was checked for its year, its publisher and what it measures, in the full text where it could be opened. A source read only in a summary, an abstract or excerpts is marked “via”. A figure not confirmed in what was read is marked so on its page, or left out. The editor's interpretation is marked “Our reading”.



MANAGEMENT REVIEW

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Every issue, one management question, checked against the best research.

ALL ISSUES

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Edited by Stiven Janaqi, who answers for it; “the editors” in this publication means him. Its texts, translations, layout and the checking of figures against their sources are done in working sessions with Claude, an AI model by Anthropic.
stivencatalyst.com/how-this-is-made.html