The health, safety and health promotion needs of older workers

Building an evidence base for a diverse workforce

www.iosh.co.uk/olderworkers

Research summary

Our research and development programme

IOSH, the Chartered body for safety and health professionals, is committed to evidence-based practice in workplace safety and health. We maintain a Research and Development Fund to support research, lead debate and inspire innovation as part of our work as a thought leader in safety and health.

In this document, you'll find a summary of the independent study we commissioned from the Institute of Occupational Medicine: 'The health, safety and health promotion needs of older workers: an evidence-based review and guidance'.

www.iosh.co.uk/getfunding

The health, safety and health promotion needs of older workers

What's the problem?

We're all designed to get older – that's part of life. However, statistics show that we're living longer now than we did before. In 1999, there were some 593 million[1] people in the world, aged 60 years or above. The number of people in this age group rose to 737 million in 2009 and is set to increase to around 2 billion by 2050.[2]

There are many benefits that come with an ageing population. For instance, the opportunity to stay on longer in the workforce is beneficial to older people – we know that 'good' work has a positive effect on individuals.[3] However, there are other reasons for older people to stay on in work, such as to relieve financial restraints and help businesses retain valuable skills and experience. In the UK and other comparable countries, plans are under way to extend working lives to reduce the burden on the state and the social security system.

Keeping people over the age of 50 at work is becoming increasingly important, but we need to understand the impact of age on the health and wellbeing of the working population to do this. So we commissioned Dr Joanne Crawford and her team at the Institute of Occupational Medicine (IOM) to look at what evidence is available on occupational health, safety and health promotion interventions to help manage the health and wellbeing of older workers, specifically those aged 50 and over. The research had three key goals:

- to establish whether the health, safety and health promotion needs of older workers are different from those of other age groups
- to review research on interventions, such as policies, initiatives or programmes designed to bring about improvements in health, safety and health promotion of older workers
- from the above, to identify information and develop guidance to help with managing health, safety and health promotion for older workers.

[1] United Nations. *The world at six billion*. www.un.org/esa/population/publications/sixbillion/sixbilpart1.pdf.

[2] United Nations. *Population ageing and development 2009*. www.un.org/esa/population/publications/ageing/ageing2009chart.pdf.

[3] Zhan Y, Wang M, Liu S, Shultz K. Bridge employment and retirees' health: a longitudinal investigation. *Journal of Occupational Health Psychology* 2009; 14 (4): 374–389; Waddell G, Burton A K. *Is work good for your health and well being?* The Stationery Office, 2006.

What did our researchers do?

The team at IOM carried out a systematic review of research. Firstly, they needed to understand the ageing process among older workers. To do this they looked at age-related physical and psychological changes and their potential impact on health, safety and health promotion.

The team searched various electronic databases and websites using defined terms. To help them decide which publications were relevant, they initially screened each abstract before ordering the full publication.

The researchers next reviewed the publications of each research study. The team looked at how the research was carried out and they also assessed the quality of the research papers using the following star rating system:

*** Strong evidence, provided by consistent findings in multiple, high quality scientific studies
** Moderate evidence, provided by generally consistent findings in fewer, smaller or lower quality scientific studies
* Limited or contradictory evidence, produced by one scientific study or inconsistent findings in multiple scientific studies
– No scientific evidence

Finally, our researchers summarised the information collected, including a description of the research, evidence statements and the quality of evidence. The review looked at research that covered:

- ageing and physical changes
- ageing and psychological or mental wellbeing factors
- ageing and work organisation factors
- ageing and accidents and ill health
- intervention studies.

What did our researchers find out?

In each area of research, the team came to a number of conclusions as a result of the literature review.

Ageing and physical changes

- Changes to physical factors, such as reduced aerobic capacity and height and increased body weight, do occur, but in some cases, changes can be prevented or reduced by physical activity.
- Muscle strength generally reduces with age but this reduction can be slowed or even reversed by training. There was limited evidence that a training effect exists for specific muscle groups in individuals involved in heavy physical work, including waste handling and power line technicians. Grip strength was found to be reduced in the over-50s.
- There was moderate evidence that the need for recovery is greater in older workers and is associated with high psychosocial demands – involving aspects of both social and psychological behaviour – and high physical demands.
- The nature and extent of self-reported musculoskeletal disorders increases with age – although the studies did not all use the same measuring techniques and older people have probably been exposed to risk for a longer time.
- There's limited evidence that chronic neck and shoulder pain increases with age, although work conditions – eg repetitive work, time constraints and poor posture – can cause these problems regardless of the age of the worker.
- Balance (postural and functional) reduces with age. Functional balance is also linked to both age and occupation: where individuals require balance to carry out their work, eg construction workers or firefighters, there appears to be a training effect as balance improves compared to other occupations.
- Heat intolerance is not directly related to age, but is linked to changes in the cardiovascular system. Those with chronic illness such as diabetes may have reduced temperature control.
- Sensory abilities including vision and hearing change with age, but through personal aids and a workplace assessment of the environment many of these changes can be accommodated.

Ageing and psychological or mental wellbeing factors

- People's reactions get slower with age but this is offset by increased accuracy, accumulated knowledge and experience. Even though certain cognitive processes – ie perception, memory, reasoning and judgement – can slow down, the impact on individuals varies and workers can make up for this in other ways.
- Regular intellectual stimulation and cognitive exercise, among other things, are linked to the maintenance and improvement of intellectual ability.
- In one large study, the vast majority of participants over the age of 65 showed no sign of cognitive impairment.
- There is limited research on mental wellbeing in older workers, but social support and risk reduction strategies for stress and improving coping strategies are important issues.
- Older workers want to maintain and update their skills and have access to training, just as workers in general do.

Physical factors	Psychological and psychosocial factors	Workplace organisational factors	Sensory abilities
▪ Aerobic capacity – the amount of oxygen used by the body during exercise ▪ Muscle strength ▪ Grip strength – the force used by the hand to pull or hold on to objects ▪ Functional balance, eg when engaged in activity ▪ Postural balance, eg normal standing posture ▪ Heat intolerance ▪ Height ▪ Body weight	▪ Reaction time ▪ Accuracy ▪ Knowledge ▪ Experience ▪ Social support ▪ Learning	▪ Shift work ▪ Overtime	▪ Vision ▪ Hearing

Table 1
Factors explored in relation to age – physical, psychological, sensory and organisational

Ageing and work organisation factors

- There was limited evidence to show that working excessive overtime in physically demanding jobs has an adverse effect on older workers.
- Limited evidence also showed that work ability reduced sooner in female healthcare workers carrying out shiftwork than in male healthcare workers – this could be due to the dual role women in the survey had at home and at work.

Ageing and accidents and ill health

- Older male workers were less of an accident risk but females over 55 were found to have the highest estimated incident rate. This could be because the occupations this group of female workers were involved in were more physical.
- The risk of non-fatal serious injury was lowest in the older worker group but the injuries sustained – eg sprains, strains, fractures and dislocations – were more severe and recovery took longer. Employer engagement was vital in the recovery process.

- There is an increased risk of developing chronic diseases with age, but this doesn't necessarily mean that work shouldn't be allowed. Diseases such as diabetes or heart disease can be controlled and workplace adjustments can be made.
- Short-term non-certified absence is the largest recorded category of sickness absence. Workers over 55 take more days off through self-reported ill health relating to work. The health issues they report include musculoskeletal problems and stress, anxiety or depression.

Intervention studies

The second stage of the review evaluated studies on interventions in safety, occupational health and health promotion. However, these types of study were limited in both number and quality. The team established that:

- there were no interventions found relating specifically to safety and older workers
- occupational health interventions, eg health checks, rehabilitation and mental health support, are viewed positively by older workers
- consultations and action plans involving various professionals (eg occupational physicians and other health professionals, HR staff and line managers) working together can reduce the likelihood of sickness absence and early retirement for health reasons
- improvements can be made relating to health promotion activities, including encouraging workers of all ages to take part, allowing time to attend them during the working day and considering the views of older workers on age-specific interventions.

What does the research mean?

- Age-related physical and psychological changes can reduce the ability to work but there are large differences in how individuals may be affected and improvements can be made by physical and mental activity.
- Individuals compensate for reduced speed with improved accuracy and increased knowledge and experience – this may matter more in certain work environments.
- Although the risk of chronic illness increases with age, this can be accommodated so that the people affected can still work.
- It's important to ensure that job demands do not outstrip ability and any recovery time required – this should be built into job design.
- Policies for promoting health should consider physical interventions, dietary advice and intellectual stimulation.

Don't forget

Like most studies, this one had some limitations, including the lack of good research on which to base guidance. In particular, areas for further research could include:

- further analysis of the causes of accidents and of how they're reported
- exploration of the reasons for slower recovery from injury
- consideration of the need for targeted treatments to speed up recovery and return to work (including the possible impact of psychosocial factors)
- data collection on changes in physical and mental capacity in this age group
- evidence on how best to encourage the maintenance of physical and mental capabilities
- understanding how best to offset the impact of age-related musculoskeletal disorders on work ability so that older workers can stay in work
- exploring the gender-related reduction in shift-work tolerance and the possible need for flexible working arrangements to accommodate this.

What's next?

This project is the first in a research series commissioned by IOSH to look at a diverse working population, focusing on 'age' as a particular subgroup.

A second report in the series, from Brunel University, investigates retirement age workers' experiences of, and views on, safety risks and practices – see **www.iosh.co.uk/postretirement**.

Our summary gives you all the major findings of the independent project report by the Institute of Occupational Medicine. If you want to read about the study in more depth, you can download the full report from **www.iosh.co.uk/olderworkers**.

Good practice in action: managing older workers' health, safety and health promotion in the workplace

The following information and advice is based on both research evidence and existing best practice.

Here are some factors you need to consider as people age.

Physical capacity

People's physical characteristics and capacity change with age, but regular exercise can affect when and how quickly these changes occur. So it's essential that workers maintain their fitness levels. For all jobs, the ability and capacity of the individual worker should meet the physical demands of the task. Carrying out an objective assessment of job requirements will help to assess whether physical job demands are too great.

Jobs should suit a range of individuals and not just the strongest or fittest in the workplace. When looking at age-related changes and their impact on work, consider:

- the work–rest schedule: make sure that workers have enough recovery time between tasks
- risk assessments and risk reduction measures: these should take into account the musculoskeletal, cardiovascular and respiratory systems, vision and hearing
- your reporting procedures for people who need to report problems at work, eg through their line manager, HR department or occupational health provider.

Shift work

Working long hours doing physically demanding tasks can damage people's health and wellbeing. There's also some evidence that suggests that women who work at night may be affected at an earlier age than men. To address these problems, base shift schedules for night workers on good ergonomic practice.

You should consider the following changes:

- limiting night work, or stopping it entirely, for workers aged over 45–50
- giving older workers priority to transfer to day work
- giving older workers their choice of preferred shift where possible
- reducing workload
- shortening working hours and increasing rest periods
- arranging more frequent health checks
- giving effective counselling on coping strategies such as sleep, diet, stress management and exercise.

Heat tolerance

An individual's tolerance to heat is not directly related to age, but to their health and fitness. However, people with health problems such as diabetes may be less tolerant of heat. Therefore more regular assessment of older workers who do hot work may be beneficial, to monitor their physical fitness and check that their health hasn't changed.

It's important for you to control and minimise workers' activities in extreme heat. For more guidance see our research summary report on managing the risk of heat stress in the workplace.[4]

[4] *Measuring heat stress in industry*. Research summary report. IOSH, 2010.

Vision and hearing

With hearing, the ability to hear and distinguish sounds decreases with age. Noise reduction measures should be in place for workers of all ages and hearing protection must be provided if the exposure levels can't be reduced enough. Where a worker does have a hearing problem, simple actions such as speaking a little more slowly and distinctly to them or encouraging the worker to wear a prescribed hearing aid can help. Other methods include implementing an alternative warning system, such as flashing lights linked to the alarm system.

Visual changes also occur with ageing. The impact of some of these changes can be reduced by carrying out any eyesight screening required by law and making sure that the working environment is designed for optimum visibility. For example, could electronic displays and written material be made more readable? And do the contrast and colour combinations used help easy reading or cause difficulties?

Psychological and psychosocial health

Although reaction times slow down as people get older, this is frequently offset by accuracy and experience. The 'use it or lose it' hypothesis suggests that long term health maintenance involves a combination of good diet, physical activity and mental activity.

Maintaining and updating the workplace skills of all workers is important and helps to stimulate their mental processes. People learn in different ways: think carefully about the learning methods adopted in your workplace. Older workers have been found to prefer on-the-job training, one-to-one training and practical training with older peers as mentors, so consulting with workers can help.

A lack of social support for older workers can increase the likelihood of emotional exhaustion, so improving the coping strategies for stress in high risk environments is important. Any workplace strategy to improve mental wellbeing should be aimed at workers of all ages.

Initiatives

If you're planning a safety, occupational health or health promotion initiative, consider the following general advice.

Safety

Accident prevention is the key to reducing injuries and deaths in the workplace. Data reveal that older workers are more at risk of fatal accidents,[5] and if involved in a serious accident, they take longer to recover.[6] Any workplace initiative relating to safety should obviously include and be of benefit to workers of all ages. If a worker is off sick, regularly keeping in touch with the individual by telephone or email can improve the return-to-work process.

Occupational health interventions

Although the general risk of developing a disease increases with age, this isn't an inevitable outcome. Where there is a health issue, for example in the case of some chronic diseases including heart problems or diabetes, workplace adjustments can be put in place and the disease can be controlled.

For certain types of work, it can help to give the worker more frequent health checks. It's possible to reduce the likelihood of workers retiring early for health reasons by using a planned occupational health intervention involving consultations with occupational physicians, the HR department, the employee's line manager and the worker. This would give the worker a route for reporting any health problems and make sure that any problems that are reported can be managed to maintain the worker's ability to do their job.

Health promotion interventions

Older workers find health checks, health condition tests, rehabilitation and mental health support important. Although taking part in health promotion activities doesn't directly help to improve work ability, these activities do improve decision making, self-help and working relationships. It's also accepted that increasing physical activity helps to reduce health risks, increase fitness and improve mental wellbeing. It's important, therefore, to make sure that older workers are able to take part in health promotion activities and that any barriers to their participation are removed by:

- making sure that people of all age groups can and do take part in health promotion activities
- finding out whether age-specific interventions for older workers would be more effective, eg surveys
- making sure that participants take part in all components of multi-component interventions
- allowing time in the working day for participation, as with other health promotion activities.

[5] Health and Safety Executive. *Self-reported work-related illness and workplace injuries in 2006/07: results from the Labour Force Survey*. Sudbury: HSE Books, 2008.

[6] Kiss P, De Meester M and Braeckman L. Differences between younger and older workers in the need for recovery after work. *International Archives of Occupational and Environmental Health* 2008; 81 (3): 311–320.

IOSH
The Grange
Highfield Drive
Wigston
Leicestershire
LE18 1NN
UK

t +44 (0)116 257 3100
www.iosh.co.uk
twitter.com/IOSH_tweets
facebook.com/IOSHUK
tinyurl.com/IOSH-linkedin

IOSH is the Chartered body for health and safety professionals. With more than 44,000 members in over 120 countries, we're the world's largest professional health and safety organisation.

We set standards, and support, develop and connect our members with resources, guidance, events and training. We're the voice of the profession, and campaign on issues that affect millions of working people.

IOSH was founded in 1945 and is a registered charity with international NGO status.

Institution of Occupational Safety and Health
Founded 1945
Incorporated by Royal Charter 2003
Registered charity 1096790

bsi. ISO 9001 Quality Management
FS 60566

INVESTORS IN PEOPLE | Silver

POL3679/090816/PDF