The economics of healthy and active ageing series

Working at older ages

Why it's important, how it affects health, and the policy options to support health capacity for work

Mauricio Avendano
Jonathan Cylus

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Working at older ages: Why it's important, how it affects health, and the policy options to support health capacity for work

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Authors

Mauricio Avendano – Professor of Public Policy and Global Health, and Director of the Institute of Gerontology, at King's College, London, and Associate Professor at Harvard University

Jonathan Cylus – London Hubs Coordinator and Economist at the European Observatory on Health Systems and Policies

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About the series

Population ageing is often perceived negatively from an economic standpoint. Yet, taking a more balanced view, it becomes evident that a growing older population is not necessarily very costly to care for, and that older people provide significant economic and societal benefits – particularly if they are healthy and active. This is the broad perspective of the Economics of Healthy and Active Ageing series: to inspire a "rethink" of the economic consequences of population ageing.

In this series we investigate key policy questions associated with population ageing, bringing together findings from research and country experiences. We review what is known about the health and long-term care costs of older people and consider many of the economic and societal benefits of healthy ageing. We also explore policy options within the health and long-term care sectors, as well as other areas beyond the care sector, which either minimize avoidable health and long-term care costs, support older people so that they can continue to contribute meaningfully to society, or otherwise contribute to the sustainability of care systems in the context of changing age demographics.

The outputs of this study series take a variety of brief formats that are accessible, policy-relevant and can be rapidly disseminated.

About this brief

Increasing the age of retirement is a key priority in many countries, both to reduce pension outlays and to maintain the share of the population in the formal labour market. This brief reviews evidence on whether older people are, in fact, healthy enough to continue working in later life, and considers the potential health effects of extending work at older ages. It also explores policy options to support the health and functional capacity of older people who continue to work, including workplace-based health and wellness interventions, employer accommodation practices, and the role of social protection systems.

Acronyms

ADL	activities of daily living
ELSA	English Longitudinal Study on Ageing
EU	European Union
GAZEL	French National Gas and Electricity Company
GDP	gross domestic product
HHS	Health and Human Services
HRS	Health and Retirement Study
OECD	Organisation for Economic Co-operation and Development
PPACA	Patient Protection and Affordable Care Act
RCT	randomized controlled trial
SHARE	Survey of Health, Ageing and Retirement in Europe

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Acknowledgements

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Key messages

- Increasing statutory retirement ages and limiting routes to early retirement are frequent policy responses to population ageing, but this is unlikely to have the desired impact if poor health is a barrier to people working at older ages.
- Increasing the pension age, without addressing the constraints older workers face when participating in the workforce, can have serious negative health consequences for this group of people.
- Pension ages have been increased in response to improvements in life expectancy, but these improvements have not always been accompanied by reduced disability rates, as people are living longer but not necessarily in better health.
- Poor mental health is a major source of disability, so improving the mental health of working populations remains a critical policy goal if we want future populations to reach older age in good health and to continue working.
- A strategy to improve the health capacity of older workers would need to combine three different types of policy and intervention:
  - workplace-based health and wellness interventions are promising and often underutilized strategies to promote health and increase the work capacity of older workers – not only to reduce health care expenses and injuries, but also to help workers maintain engagement and increase productivity in older age
  - employer accommodation practices have an important role to play in helping older workers with health problems to stay in work
  - The social protection system might be critical to ensuring that older workers who experience functional problems do not leave the labour force, for example, by ensuring that disability insurance/benefits policies support the integration of older people into the workforce.
- Prejudices and misconceptions about the productivity of older workers result in reduced investment in the older workforce, even though they have enormous potential to contribute to the economy. Interventions can support older workers to benefit from workplace programmes and policies to maintain productivity, while at the same time promoting their physical and mental health.

Executive summary

Concerns about the impact of population ageing on the sustainability of pension systems have led to major policy reforms to improve the sustainability of the welfare state, such as blocking pathways to early retirement and increasing the age at which workers can claim full retirement benefits. These policies are primarily driven by economic sustainability concerns. Increasing labour force participation at older ages (i.e. beyond the current retirement age) is critical for effectively addressing the challenges that population ageing poses to the welfare state, but many of the usual policies proposed to address these challenges rely on the assumption that longer working lives necessarily imply increased work capacity: we are living longer, the argument goes, and therefore we are able to work longer. However, most countries have not experienced consistent compression of morbidity: while we are indeed living longer, we are not necessarily doing so in better health. A potential rise in ill health is associated with increasing rates of some physical health problems, but also with a rise in the contribution of mental disorders to work disability.

Increasing the retirement age and reducing the generosity of pension systems is likely to have adverse effects on the health of older workers, particularly those in physically or psychologically demanding jobs. This potentially increases costs to the health care system. Raising the normal retirement age might lead to increased rates of both physical and mental health problems, although as an exception to this, cognitive function might be improved by staying in employment longer.

What workplace-based health and wellness interventions work?

An approach based solely on increases to the normal retirement age might increase the labour force participation rate of older people, but it may also have its own negative health consequences for the physical and mental health of older people. Therefore, the potential social, economic and health care costs associated with later retirement need consideration. The workplace is also an important, yet often underutilized, potential setting for interventions to encourage sustained healthy behaviours and improved health capacity, which should translate into increased workability.

- Workplace-based interventions that prevent work disability or improve return-to-work outcomes among those with a work disability show some effectiveness in supporting people to continue to work. This is important, as ill health remains the leading cause of labour force withdrawal among older people.
- Workplace interventions that combine multiple components appear to be more effective than interventions that focus on one dimension only. Likewise, multilevel interventions that focus on both employees and supervisors are more likely to increase workability than those that focus only on the employees.
- Changing features of the work environment, including work accommodation offers, early contact between health care providers and the workplace, and improvements in the quality of supervision and social support for older workers, can improve the workability of older people.
- Interventions that prevent mental disorders or support older workers with mental illness in returning to work are of crucial importance.

In addition, the effectiveness of population-level interventions to reduce depression at work, for example, by expanding access to cognitive behavioural therapy to older workers through effective identification and delivery of mental health services in the primary care setting should be considered.

How can the disability insurance system support older workers?

Reforms that reduce compensation level or raise the threshold for eligibility to disability benefits can have negative health consequences for a substantial part of the workforce. Instead, policies that encourage the integration of workers with health problems into the labour force can support older workers through:

- improvements in the work environment and workplace interventions
- adapting the rules and regulations of the disability insurance system to encourage integration, for example, by allowing individuals to receive disability benefits while also receiving earnings from work, thus supporting a transition back to employment
- mandatory employment quotas that require employers to have a certain proportion of disabled workers among their staff, as well as anti-discrimination legislation for people with disabilities (many of whom are older workers).

Unless hampered by a health condition that limits their workability, older workers do not appear to be any less productive than their younger counterparts. Yet, younger people are more likely to benefit from vocational rehabilitation programmes than older workers, even though the latter are much more likely to experience health limitations. Prejudices and misconceptions about the productivity of older workers result in reduced investment in the older workforce, even though older workers have an enormous potential to contribute to the economy. Interventions can support older workers to benefit from workplace programmes and policies to maintain productivity, while at the same time promoting their physical and mental health.

Introduction

An increasing proportion of older people in the general population is predicted to have significant implications for the public finances of European countries due to increasing public expenditures on health care, long-term care and pensions, coupled with declines in tax revenues. In response, many governments have introduced policy reforms to encourage older people to work longer by raising the state pension age and limiting routes to early retirement, such as disability pensions and unemployment benefits. The assumption behind these policies is that by increasing employment rates in older ages, income tax revenue will increase, expenditures on out-of-work benefits will decline, and reliance on the state to meet the costs of living and care in later life will decline. Extending working lives, therefore, appears to make economic sense: in 2015, Organisation for Economic Co-operation and Development (OECD) countries spent on average 7.9% of their gross domestic product (GDP) on old-age and survivors' cash benefits, 1.5% on disability and sickness cash benefits, and 0.7% on unemployment benefit programmes. Since these programmes disproportionately benefit older people, incentivizing older workers to remain in work could help address public deficits and contribute to the economic sustainably of social benefit programmes. In line with this reasoning, many OECD countries have responded to the challenges of ageing by increasing the statutory age of retirement.

Yet, policies such as changes to the statutory retirement age and the collective discourse on the economic benefits of working longer have been overshadowed by a lack of attention to two critical questions: First, are older workers in good enough health to work longer? And second, do changes to retirement policies have implications for the health of older workers?

To begin to address the first question, looking at data from the US Health and Retirement (HRS) study suggests that worsening health is the most important driver of early retirement, followed by layoffs and family factors [1]. Analysis of the English Longitudinal Study on Ageing (ELSA) and the Survey of Health, Ageing and Retirement in Europe (SHARE) suggests that an acute health shock, such as a stroke or cancer, doubles the risk that an older worker will leave the labour market and can lead to rapid deterioration of physical and mental health [2]. Despite this, few policy initiatives to increase employment at older ages focus on improving and maintaining good health among older workers.

With regards to the second question, evidence indicates that policies requiring older people to work longer (i.e. before they can collect pension benefits) may have unintended consequences for health and wellbeing, particularly for workers in poor quality jobs. Productivity losses and increased demand for health care as a result of health problems for these workers may outweigh any public savings generated by postponing retirement.

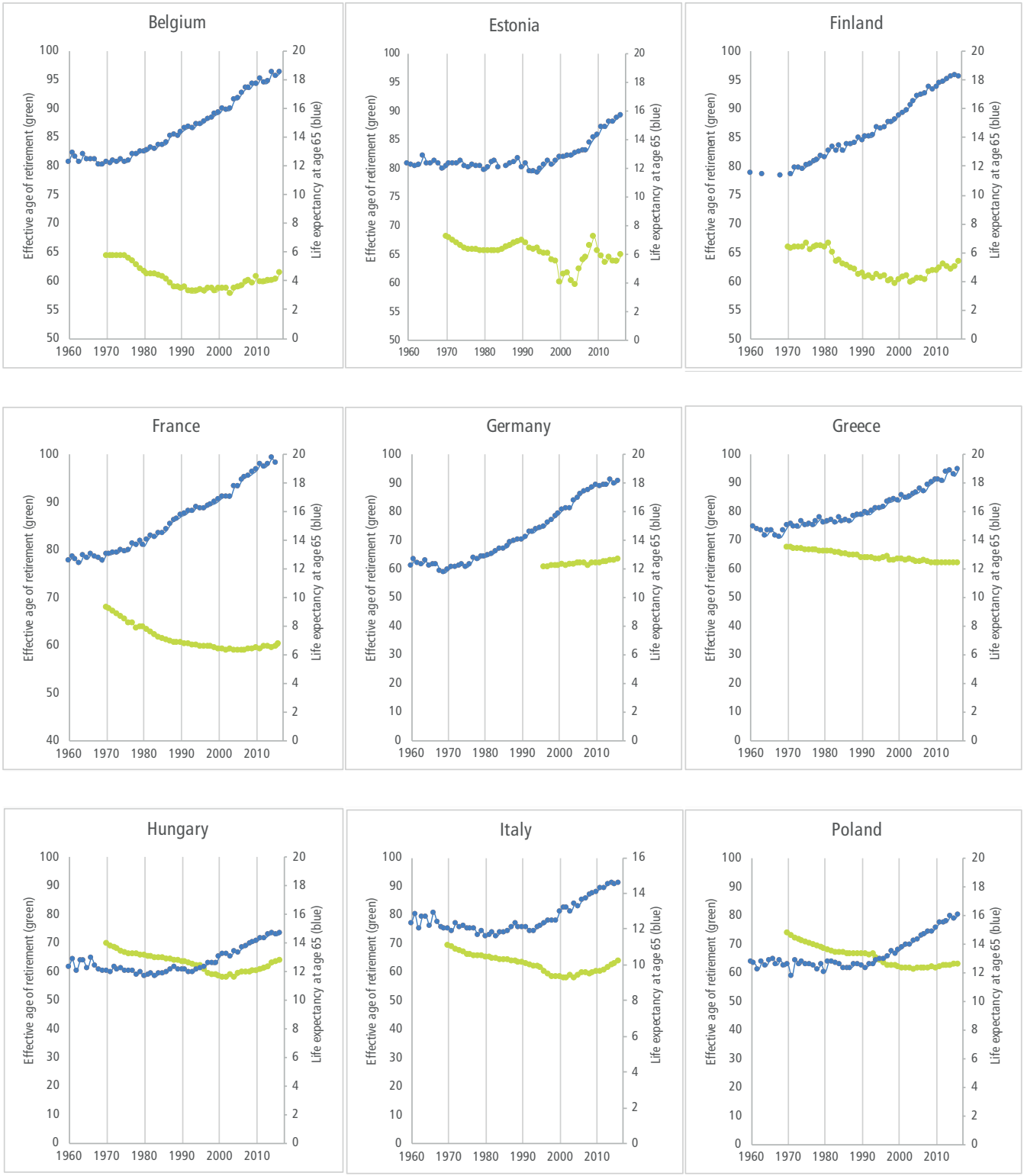
So far, policy discussions have not fully considered these two critical questions, but evidence increasingly suggests that they are important. This policy brief concentrates on two critical issues: First, we critically review the evidence on the role of health and functioning in determining the work capacity of older people. Second, we review evidence on how policies that promote extended working lives – such as raising the retirement age – have their own implications for the health of older workers. Central to addressing these issues is the great heterogeneity in the type of work older people do. For a significant proportion of older workers, working longer does not appear to contribute significantly to maintaining good health and, for some workers, it may in fact lead to poorer physical and mental health. As a result, policies that increase the statutory retirement age may carry a hefty price tag due to increased health care costs associated with new morbidities for workers in poor quality jobs. Following this, we review evidence on interventions and policies available to governments for maintaining health and functioning in older age, and their potential impact on work participation and productivity in older ages. Policies must strike a balance between the goals of extending working careers and improving the health and wellbeing of older people. Ensuring 'workability' will also need to go beyond the focus on individual capacity to look at how the working environment can be adapted to enable working at older ages. A narrow policy approach that focuses on raising retirement age and blocking pathways to early retirement is unlikely to be effective unless accompanied by significant investments in health for older workers.

This policy brief is structured as follows: First, we critically examine the classical economic argument for extending working lives focused on the sustainability of pension systems. Second, we examine evidence on the capacity of older workers to work based on their health, and the potential that it may offer for longer working. Third, we examine the question of how increases in the statutory retirement age influence the health of older workers, based on the evidence arising from recent policy reforms in OECD countries. Fourth, we consider strategies to improve the health of older workers and provide some evidence that worksite interventions to promote health and wellbeing are promising approaches to increasing work and productivity in older ages.

Why do we need people to work longer?

Historically, changes in economic circumstances have triggered changes in the discourse around the employment of older workers. During the 1950s and 1960s, the strong economy and labour market shortages in many European countries encouraged the view that it was important to attract and retain older workers to meet the labour market shortfall. During the 1970s and 1980s, however, promoting early retirement became a popular policy under the assumption that enabling older workers to retire early would 'free' jobs for the young, who were experiencing high unemployment rates in the context of declining economic conditions. During this period, several mechanisms or 'pathways to early retirement' were introduced to enable older workers to withdraw from the labour market, for example, through 'job release' schemes, unemployment benefits for 'hard to re-employ' older workers, special pre-retirement programmes, or extended disability benefits to bridge retirement [3].

Figure 1: Trends in the effective age of retirement (green) and life expectancy at age 65 (blue), 1960–2015



Source: OECD estimates based on the results of national labour force surveys, the European Union Labour Force Survey and, for earlier years in some countries, national censuses [8,9].

The dominant views during these earlier decades could not be more at odds with the current paradigm: Rising concerns about the impact of population ageing on pension system sustainability have led to the view that policies should do all they can to incentivize older people to work longer. In response, most industrialized countries have increased the age of retirement and constrained pathways to early retirement [4]. The current narrative emphasizes a sense of obligation for older workers to avoid becoming a 'burden' to society and to continue to contribute to the economy. The concept of retirement has therefore shifted from a reward bestowed to individuals at the end of their working careers, to an income replacement programme for older people. This reflects the new expectation that retirement should be a period of continued productivity, rather than a period of well-earned leisure [5]. As a result, policies that promote early retirement have been replaced by policies that aim to increase the labour market participation of older workers [5].

While there is significant debate about the correct policies to address the pension deficit, there is little doubt that population ageing poses major challenges to the sustainability of pension systems, and that labour force participation is central to effectively addressing this challenge [6]. Figure 1 shows trends in life expectancy at age 65 against trends in the average effective retirement age for men for selected European countries. What we see is a widening gap: as the number of years we can expect to live beyond the age of 65 has increased, the effective age of retirement has either declined, remained stable or increased less than life expectancy. This widening gap implies that the number of years spent in retirement has increased over recent decades. Further increases in this gap will lead to imbalances between the revenues and expenditures of the pension system, requiring reform to balance future benefits and expected revenues [7].

Does it follow from these trends that governments should introduce legislation to increase the age of retirement and effectively reduce pension benefits? This is, in fact, not the only alternative, as revenues and expenditures of the pension system depend on multiple variables: the contribution rate, the average labour market income and the number of workers [7]. Increasing the retirement age is, therefore, only one among several parameters that could increase revenues and reduce expenditures. Countries may also decide, for example, to increase contribution rates by employers, employees or both; reduce the replacement rate; or use alternative sources of revenue to cover the pension deficit [7].

Why have most countries chosen to extend retirement age as their main strategy? While not the only alternative, the assumption is that more time in the labour force would make an important difference to both older workers and pension systems: for workers, it has the potential to increase earned income and accrued pension benefits; and, some may argue, longer work may itself bring benefits to health and wellbeing. For pension systems, it increases contributions (which increases revenues) and shortens the period of retirement (which reduces expenditures), thus making the system more self-sustainable [10]. The alternative scenarios would seem less desirable: reducing the replacement rate, for example, would amount to reducing the standards of living of older people, reversing a trend of improved financial wellbeing of older people over recent decades in European countries. Increasing contribution rates would imply that workers must set more money aside during the pre-retirement years to finance their retirement.

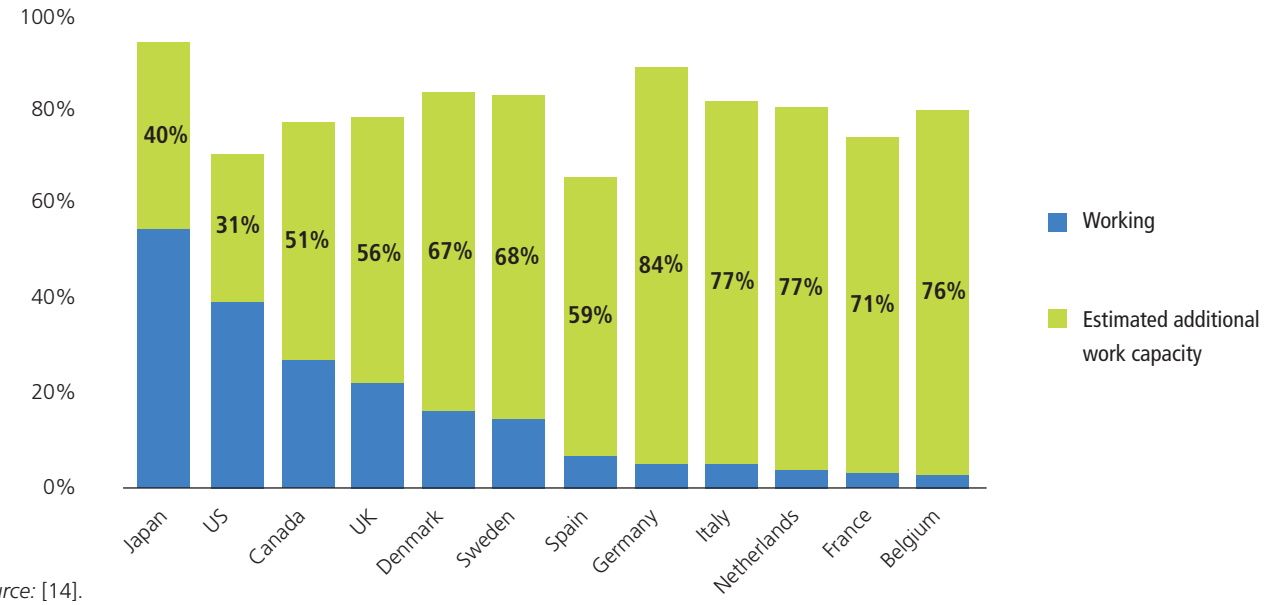
Prolonging working life thus seems to be the most achievable policy goal to increase the sustainability of pension systems. However, a key question that still spurs significant debate is how to achieve this. So far, policy reforms have narrowly focused on two strategies: increasing the statutory retirement age and restricting pathways to early retirement. These two strategies are rooted in at least three assumptions. The first assumption is that workers respond to these reforms by increasing the labour supply. So far, evidence suggests that these policies do encourage older people to stay in work longer, but that the increase in labour supply is not enough to compensate for the income loss, leading to reduced income and increased poverty rates at older age [11]. The second assumption is that employers will demand older workers, which is difficult to verify. The third assumption is that workers are in sufficiently good health to work longer. We critically examine this last assumption in the next section.

Are older people in good enough health to work longer?

Reforms to increase statutory retirement ages will not increase labour force supply at older ages if workers do not have sufficiently good health and functional capacity to work longer. By contrast, if older workers are healthy enough to work longer, and there are no other major barriers, we would expect older workers to respond to increases in statutory retirement ages by increasing their labour supply.

The question of whether older people are in good enough health to work longer poses a number of challenges as the answer may depend on critical assumptions about the definition of health, the impact of health on the ability to work, and the types of work older people do. There are two main methods for approaching this question. The first, known as the Milligan-Wise method [12], uses the relationship between mortality and employment at an earlier point in time along with recent (2010) data on mortality to estimate the ability to work at older ages for a given individual. This method effectively estimates how long people today would be able to work if they were to work as long as people with the same mortality rate did in the past [12,13]. Figure 2 summarizes the results of recent analysis for selected countries at ages 65–69 and suggests that there is enormous excess health capacity to work at older ages in each of them. For example, if 65–69-year-old Japanese men in 2010 were to experience the same employment rates of Japanese men in 1977 with the same mortality rate, their employment rates would be 40 percentage points higher than observed. The difference is over 70 percentage points in France, Italy, the Netherlands and Belgium, suggesting health capacity would enable 65–69-year-old men to work much longer than they currently do using 1977 as a comparison year.

Figure 2: Estimated additional work capacity by country among men aged 65–69 years



Source: [14].

The second method, which builds on the work of Cutler et al. [15], estimates how long older people at a given stage of health would be able to work if they were to experience the same work rates as comparatively younger people with the same levels of health. To do this, the method first estimates the relationship between health status and employment among a sample of younger individuals whose labour market participation is unlikely to be affected by social security benefits. In a second step, the method applies these estimated relationships to a sample of individuals around the retirement age to predict their health capacity for work [13,15]. Using this approach, studies from a number of high-income countries appear to overwhelmingly support the hypothesis that good health enables older people to work considerably longer than they currently do [16]. Box 1 illustrates findings from the US.

These two methods would seem to support the hypothesis that there is substantial work capacity in terms of health. However, these approaches have important limitations; for example, the results based on the Milligan-Wise method [12] are strongly sensitive to the choice of comparison year. Further, the methods are based on strong assumptions, particularly that mortality declines can be taken to represent improvements in health.

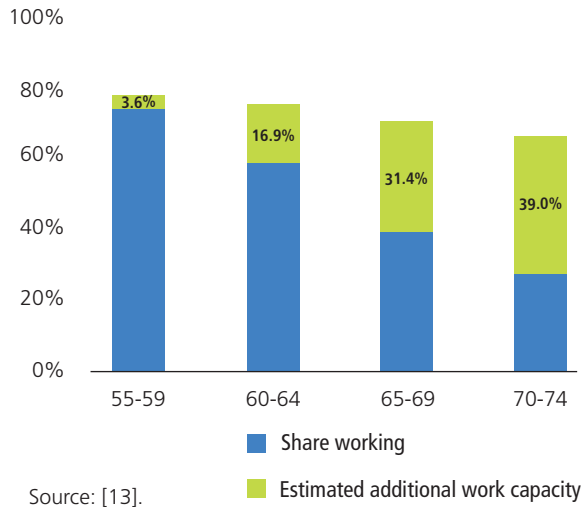
The idea that mortality trends can be used as indicators of health capacity is interesting but is also at odds with substantive research suggesting that increases in life expectancy do not necessarily imply increases in healthy life years, and this may differ widely from country to country. Overall, there is little consensus on whether countries are experiencing compression of morbidity (a reduction in the fraction of life expectancy experienced in poor health) or

Box 1: How does health affect capacity to work in the US?

Figure 3 is based on data from the Health and Retirement Study in the US. It shows the proportion of older Americans that would be employed if they experienced the same employment rates and health status of those aged 51–54 years – a group assumed to be too young to be influenced by statutory retirement age thresholds. Health is measured using a comprehensive set of indicators that include self-reported health conditions, functioning and disability, and medical care use.

American men aged 60–64 should be 17 percentage points more likely to work if they had the same labour force participation rates of slightly younger American men (51–54 years) who exhibit the same health status. The corresponding increase would be 31 percentage points for men aged 65–69, and 39 percentage points for men aged 70–74. Transforming these rates into years worked, the authors estimate that older American men would be able to work 2.6 additional years between the ages of 55 and 69 (in 2010, Americans worked an average of 7.9 years at these ages).
The results are in line with the Milligan-Wise method [12].

Figure 3: Share of men in the Health and Retirement Study (HRS) working and estimated work capacity by age



Source: [13].

expansion of morbidity (an increase in the proportion of life expectancy experienced in poor health). For example, analyses for the US suggest that although healthy life expectancy might have shown some improvements, more recent cohorts show higher levels of frailty and disability as they reach older age [17]. Likewise, although Cutler et al. [15] note improvements in functional measures of health in the US, they also show that disease rates have not changed. Overall, measures of mild disability appear to be declining, but measures of severe disability and disease have not changed markedly over the last few decades [17]. Box 2 illustrates trends in the last decade. Overall, most evidence suggests that while mortality has substantially declined, reductions in morbidity are less clear, and some forms of disability may have increased or remained constant, which is likely to have implications for whether it is appropriate to infer health capacity to work among older people based on mortality trends [17].

Studies that use mortality as a measure of functional health also ignore the rise in the importance of mental illness as a reason for early exit from the labour market. In Finland, for example, mental disorders are the most common reason for drawing a disability pension [18]. In the US, 21% of all work disability is attributable to depression/anxiety/emotional problems, making it the second most common cause of work disability [19]. Across OECD countries, between 25% and 60% of all new disability benefit claims are due to mental disorders [20]. A recent OECD report estimates the total costs of mental disorders at more than 4% of GDP – or over EUR 600 billion – across the 28 European Union (EU) members, including direct costs to the health care system (1.3% of GDP), spending on social security (1.3% of GDP), and large indirect costs in the labour market (1.6% of GDP), driven by reduced productivity and lower employment associated with mental illness [21]. Improving the mental health of working populations, therefore, remains a critical goal of policy, if we want future populations to reach older age in good health and continue working.

How do increases in the retirement age influence the health of older workers?

Over recent decades, most OECD countries have implemented reforms to increase the retirement age – that is, the minimum age at which workers are legally entitled to claim full social security benefits [25]. How this has materialized in practice is illustrated in Figure 6 for women in a selection of OECD countries. As the figure shows, in all countries for which data were available, the normal retirement age to receive pension benefits for women was higher in 2016 than it was in 2002. The magnitude of the increase varies across countries as well as across cohorts: for example, women in Greece faced an increase of two years, from the age of 60 to the age of 62; by contrast, women in the UK faced an average increase of four years, from age 60 to age 64. The most recent cohorts of UK women will in fact experience increases of up to 6 years relative to older cohorts in the next decade.

At first, the rationale for these pension reforms appears in line with the argument that older people should work longer. If an increase in the age at which workers can claim benefits creates a financial incentive to work longer and retire later, it will add more years of work and pension contributions, and this will improve the sustainability of pension systems [27]. In reality, however, these reforms will only achieve their goal if a number of critical conditions are met, such as the condition that employers demand older workers; that working environments are conducive to older people remaining in work; and, critically, that older workers have the health capacity to work longer. In the previous section, we saw that although people are less likely to die at every age, they are not necessarily healthier at each age [17,28].

If there have been limited improvements in disability and morbidity over recent decades, and the health capacity of workers has not increased at the expected pace, how will reforms to increase the retirement age affect the health of future older workers? One argument might be that, even if health capacity has not increased over recent decades, older people may still have enough health capacity, and therefore we need not be concerned: financial incentives for later retirement will increase the probability that older workers remain at work at older ages. On the other hand, if there is not sufficient health capacity, or if the conditions for older people to work longer are not met, increasing the retirement age will, at best, have little or no impact on the length of work; or, what is worse, it might increase work, but to the detriment of the health of older workers.

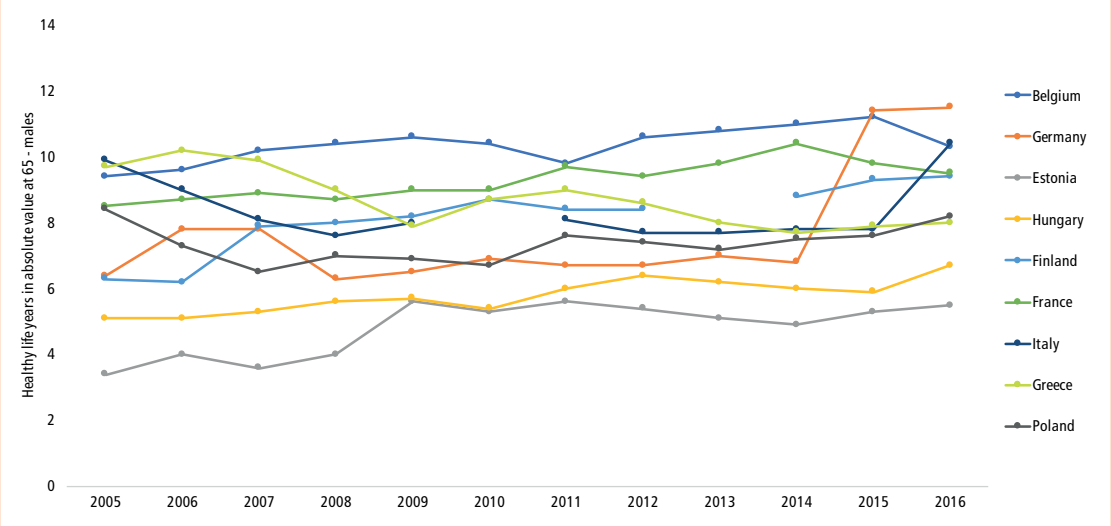
Why would increasing the age of retirement bring negative health consequences? After all, an extensive range of sociology literature suggests that retirement itself might have negative consequences for health as it can lead to a drop in income; reduced social interaction and physical activity; and loss of the non-financial benefits of work, such as a time structure for the day and self-esteem [29,30]. These effects would suggest that delaying retirement might in fact bring important health benefits. On the other hand, retirement might offer individuals more flexibility to make time allocation decisions, and therefore increase their ability to invest in their health, for example, by doing more exercise, cooking healthier foods, or adhering to medical treatments. Furthermore, workers in occupations that are potentially damaging to health might experience health improvements as a result of reduced exposure to physical hazards or psychological job stress [6,30–32].

Extensive research over the last few years has examined how the timing of retirement influences the health of older people. The answer to this question appears to be complex and somewhat dependent on country, health outcome, socioeconomic status and type of work, among other factors [26,30]. However, while still hotly debated, an increasing number of studies suggest that individuals experience a large boost in their wellbeing, physical and mental health as a result of retirement, so that raising the retirement age might result in worse health than would otherwise be the case under a lower legal retirement age.

Box 2: Are older people healthy enough to work?

Trends in healthy life expectancy and functional limitations To illustrate trends focusing on the last decade, Figure 4 shows trends in healthy life years, a measure that combines data on life expectancy (which is derived from mortality rates) with data on trends in functional limitations (derived from survey data on limitations), to obtain the number of years that a person of a certain age can be expected to live without disability. Data suggest that, while on average healthy life years have increased by 1.2 years from 2005 to 2016 across the EU 28, this is by no means a universal pattern: while countries such as Spain, France and Italy have experienced some gains, others such as Denmark, the Netherlands, Poland and the UK have experienced small increases or no change in healthy life years over this period. Overall, this and other evidence suggests that there is limited compression of morbidity because we have achieved more reductions in mortality than we have achieved reductions in morbidity [17].

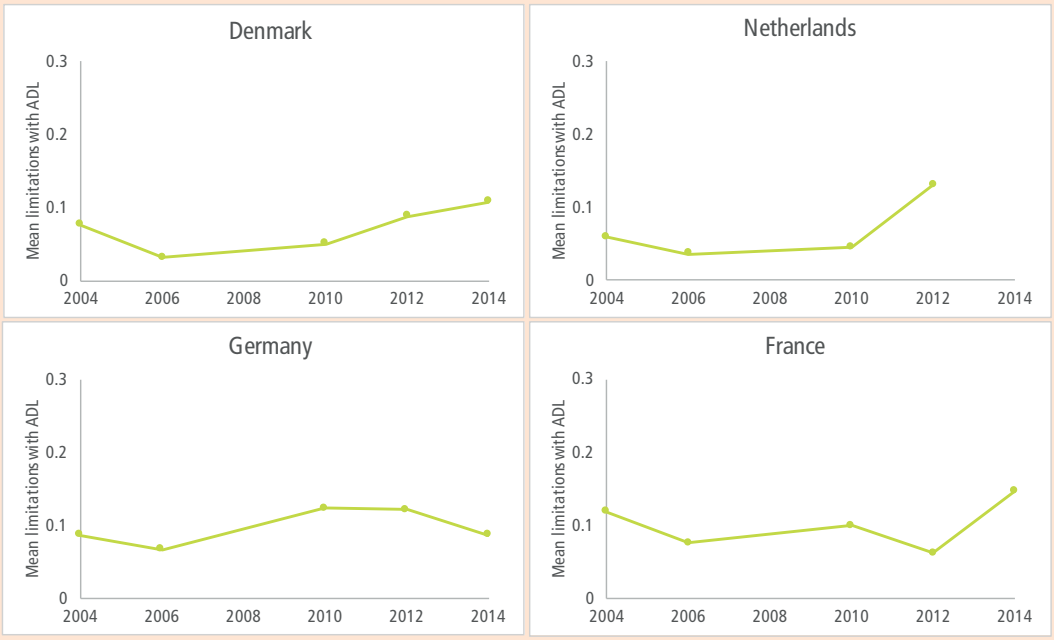
Figure 4: Trends in healthy life years at age 65 among males in selected European countries



Source: [22].

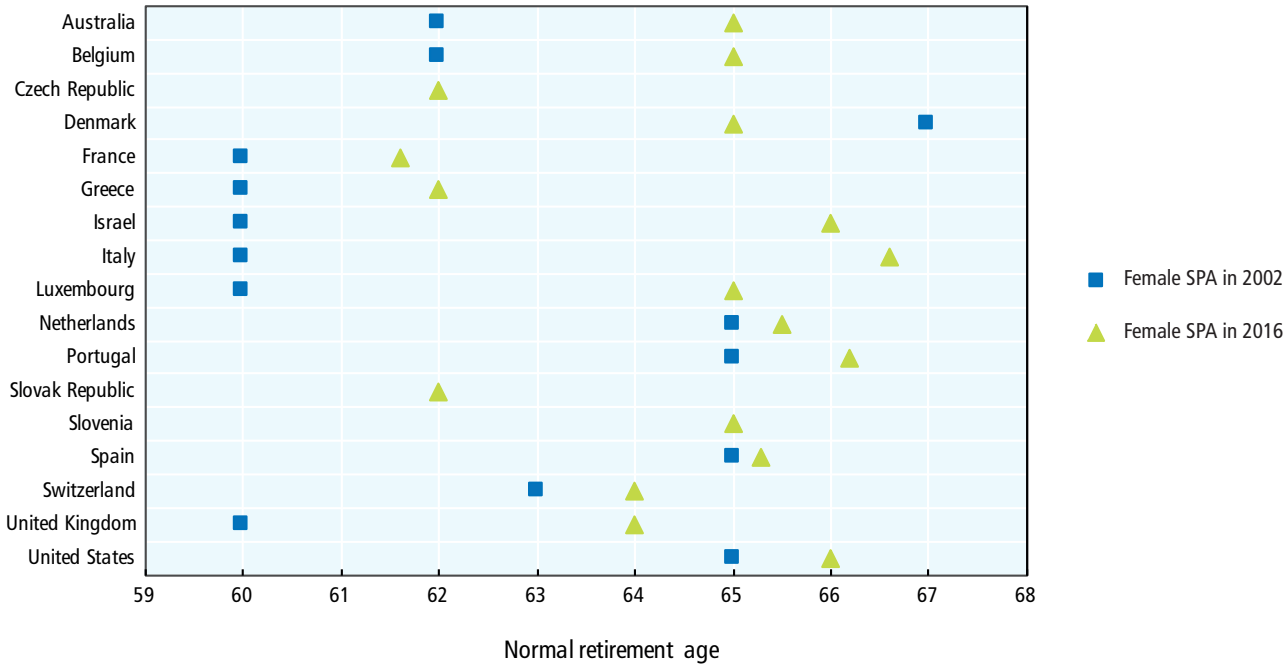
To illustrate further, Figure 5 shows trends in the average number of limitations in activities of daily living (ADL) at ages 50 to 54 years from 2004 to 2014 among men, based on the Survey of Health, Ageing and Retirement in Europe for selected countries. While some fluctuations are apparent, there is no clear pattern of decline in ADLs, which measure severe disability. Overall, these results suggest that, while there may indeed be work capacity, there is no clear compression of morbidity trend suggesting that work capacity is consistently larger today than it was in the past.

Figure 5: Mean number of limitations in activities of daily living for men aged 50–54 years, 2004–2014



Source: Survey of Health, Ageing and Retirement in Europe (SHARE), own calculations [23,24].

Figure 6: Normal retirement age in selected OECD countries, 2002 and 2016



Source: [26], adapted from [25].

We can distinguish two main types of study supporting this hypothesis. First, a series of studies over time compare health changes among workers who retire, with the health of workers who continue to work. These studies suffer from potential biases because retirement decisions are not random and are potentially health related. In particular, workers who retire early may do so because of underlying health problems, and therefore, a comparison of health between those who retire and those who continue to work might inadvertently show that retirement is associated with worsening health, but this could be the result of selection into retirement or longer working.

Despite this potential for bias, a surprising outcome of these studies is that they often find that both physical and mental health improve after retirement; and that those who retire experience better health than those who continue to work. For example, a well-known study by Westerlund and colleagues [33] used data from workers in the French National Gas and Electricity Company (GAZEL) followed for seven years before and seven years after retirement. This study found that the prevalence of poor self-rated health fell from 19% to 14% after retirement, which corresponds to a health gain of about 8–10 years relative to those who continued working. This effect was concentrated among workers who reported a poor work environment prior to retirement. Similar improvements were reported for the UK among participants in the Whitehall Study [34,35].

A second group of studies exploits variations between countries or over time in incentives to retirement – such as statutory retirement age laws – as a 'natural experiment' to examine the impact of retirement on health, potentially accounting for health-related selection into early retirement. These studies largely support the conclusions of the studies above and suggest that retirement is associated with an improvement in several physical and health outcomes. For example, using data from the US Health and Retirement Study, Charles [36] exploits discontinuities in the age of mandatory retirement and social security benefits in the US and finds that retirement leads to better mental health and wellbeing. Exploiting variations across European countries in the age of eligibility for early or full retirement benefits, studies have reported that retirement reduces the probability of a variety of physical and mental health outcomes [37,38], including large reductions in mortality [39].

However, some studies report that retirement leads to poorer health outcomes, such as increased rates of chronic conditions [40]; while a few studies find no health effects of retirement [41]. This suggests that, in some contexts, retirement might not lead to health improvements; yet, the finding of beneficial effects of retirement on health by far dominates the empirical literature. Nonetheless, a substantive number of studies report that retirement leads to faster cognitive decline [42–44]. While some studies contradict this hypothesis [45], cognitive ability appears to be the only health outcome that seems to deteriorate as a result of earlier retirement. Clearly, while this is important given the increasing contribution of cognitive-related conditions such as dementia to the burden of disease [46],

the bulk of the evidence thus far suggests that retirement might bring more health benefits than harms for older workers [30].

What do these results imply for recent reforms that have increased the retirement age? Based on this evidence, we would expect that an increase in the retirement age can delay the health benefits of retirement, potentially leading to a worsening of physical and mental health, at least for some groups of workers whose health otherwise benefits from retirement. This is, in fact, what recent studies evaluating the health effects of pension reform in the UK and the Netherlands have found. In a recent paper, Carrino and colleagues examined the impact of raising state pension ages for cohorts of women in the UK since 2010 and found that increased women's state pension age leads to a 9% increase in the probability of depressive symptoms. These effects are driven by negative physical and mental health effects for women in lower status occupations and physically or psychologically demanding jobs [26]. A study in the Netherlands reported that a reform that postponed retirement age for five years led to worse mental health [47], while a decrease in the Dutch state pension age led to reduced mortality [41]. Likewise, an increase from 65 to 67 years in the state pension age led to worsening health of older people in Israel [48]. Overall, these studies suggest that recent increases in the retirement age might have serious negative consequences for the health of some older workers. Although increasing the retirement age might bring some savings to the pension system, this might come at the expense of worsening health outcomes, reduced social activity associated with poorer health, and increased costs to the health care system. In isolation, therefore, increasing the normal retirement age appears at odds with the explicit goal of countries to help people maintain good health and functioning in older age [49], and might ultimately undermine the goal of increasing the sustainability of health and pension systems.

How can policy-makers support the health of older workers?

This brings us to the last question we address in this policy brief: how can health systems support workers in maintaining good health and thus labour participation, workability and work productivity at older ages? To address this question, we distinguish two levels of action: First, we consider policies and interventions that health systems themselves may be able to coordinate in order to maintain the health capacity of older workers. Second, we consider policies and interventions that often fall outside of the realm of health systems, such as the design of disability insurance systems, but for which health systems might be able to advocate in the name of improved health and productivity of older workers.

On the whole, we argue that in order to increase labour force participation and productivity in older age, governments need to create an institutional environment that both fosters direct interventions to promote the health of older workers and requires employers to create supportive work environments for older people ('workability'). We note that the evidence on how specific policies or interventions achieve these policy goals is still in its early development. Yet, we present here a snapshot of the evidence based on a set of systematic reviews and meta-analyses of rigorous studies that have formally examined the health impact of policies and interventions, most of them using a randomized controlled trial (RCT) design. We preclude a discussion of broader sectoral policies that might drive increased labour force participation of older people in the long run, such as increasing levels of education of future older cohorts [50]; and narrow down our focus to interventions that might increase the work capacity of current middle-aged and older workers.

A strategy to improve the health capacity of older workers needs to combine three different types of policy and intervention. First, we emphasize the critical role of workplace-based health and wellness interventions as promising and often underutilized strategies to promote health and increase the work capacity of older workers [51]. While employers typically rely on these programmes to reduce health care expenses and injuries, we argue that these programmes can also help workers maintain engagement and increase productivity in older age. Second, employer accommodation practices have an important role to play in helping older workers with health problems to stay in work. And third, we propose that features of the social protection system, notably the disability insurance system, might be critical to ensuring that older workers who experience functional problems do not leave the labour force. In particular, we emphasize the importance of a strong 'integration' dimension of disability insurance, which reflects all employment and rehabilitation measures, in ensuring that older workers remain in the labour force.

Workplace-based health, wellness interventions and employer accommodation practices

The workplace has long been considered an important, yet often underutilized setting for intervention to provide older adults with the resources they need to continue working [51]. These programmes can engage older workers in health promotion and encourage sustained healthy behaviours that improve the health of older workers. Essential to this approach is the concept of 'workability', which emphasizes the extent to which a specific disability or condition interferes with work performance [52]. The workability framework shifts the focus away from individual capacity to the environment in which older people work. Consistently, an increasing number of policies and regulations focus on improving the work environment, for example, through ergonomic policies, changes in work structures, work assignments and work flexibility. Importantly, this framework suggests that workability can be enhanced through specific policies and interventions that aim to improve the wellness of workers, such as stretching programmes for workers in physically demanding jobs, or reengineering of plants to help workers stay healthy and productive [51].

Advocates of this approach also emphasize the business case for health and wellness programmes to support an ageing workforce [51]. While many employers assume that older workers are less productive than younger workers, an increasing body of evidence suggests that this may stem

from a misconception about the measurement of productivity across different ages, which gives less weight to the potential strengths of older workers. For example, Ng and Feldman [53] suggest that older workers engage in greater safety-related and fewer counterproductive work behaviours than their younger counterparts, including workplace aggression and substance use at work. Unless hampered by specific health conditions that limit their ability to meet work requirements, there is limited evidence that older workers are less productive than their younger counterparts [51].

Primary prevention through the workplace appears to be an effective strategy for improving workers' health capacity and reducing modifiable risk factors such as physical inactivity and poor nutrition [51]. Evidence suggests that improvements in health status and decreased risk factor exposure quickly reduce health care costs for employers [54,55]. Workplace-based Health and Wellness programmes can achieve this primarily through three types of intervention: 1) screening to identify potential health risks through ergonomic or health risk assessments; 2) lifestyle interventions targeted to chronic disease risk factors, such as exercise and healthy food programmes; and 3) on-the-job education programmes that encourage healthier lifestyles [56].

Are these programmes effective in improving health and increasing work capacity? In recent decades, several studies have examined the impact of specific workplace interventions on health and productivity. Many of these are small studies that focus on a particular intervention and set of outcomes, and many more studies are still needed to build the evidence base. For example, Cloostermans et al. [57] carried out a systematic review of the evidence on the effectiveness of workplace interventions targeted to older workers. Only four studies met the inclusion criteria and these offered limited evidence for a positive effect of interventions on early retirement, workability and productivity. Nevertheless, several systematic reviews point towards the notion that workplace interventions may have small to medium effects on the health and wellbeing of older workers, which translate into work productivity gains. In this section, we try to draw general lessons from some of these studies for the health and work capacity of older workers.

First, a series of studies show that workplace-based interventions to prevent work disability, or improve return-to-work outcomes among those with a work disability or on sick leave, have some effectiveness in supporting people to continue to work. For example, van Vilsteren et al. [58] systematically examined the evidence on the impact of workplace interventions to prevent work disability in workers on sick leave. They identified 14 RCTs, focused on musculoskeletal disorders, mental health problems and cancer. Their findings suggest that workplace interventions significantly improve time until first return-to-work and reduce the duration of sickness absence. Workplace interventions improved return to work and pain more effectively among workers with musculoskeletal disorders, whereas no evidence emerged of an effect for workers with mental health problems or cancer [58].

Second, evidence suggests that workplace interventions that combine multiple components are more likely to be effective than interventions that focus on a single dimension. For example, de Boer et al. [59] carried out a systematic review focused on interventions to enhance return-to-work among cancer patients. While psycho-educational or medical interventions alone were not effective, multidisciplinary interventions which involved vocational counselling, patient education and behavioural training led to higher return-to-work rates than care as usual. Similarly, Oakman et al. [60] found that multilevel interventions, which include changes to work arrangements and liaisons with supervisors, combined with individual interventions such as behaviour change or exercise programmes, lead to a small but positive increase in workability. Cullen et al. [61] reviewed 36 studies focusing on interventions to increase return-to-work from musculoskeletal, pain-related and mental health conditions, and identified three broad categories: health-focused, service coordination and work modification interventions. Only multidomain interventions encompassing at least two of these elements were effective in reducing duration away from work from musculoskeletal disorders, pain-related conditions or mental health problems. By contrast, interventions that focused only on cognitive behavioural therapy, without workplace modifications or service coordination components, were not effective for workers with mental health conditions.

Third, a substantive body of evidence suggests that changes to the work environment, including work structure, are critical to improving the workability of older workers. Franche et al. [62] systematically examined evidence on the effectiveness of work-based return-to-work interventions and found that work accommodation offers and contact between health care providers in the workplace significantly reduced the duration of work disability and related costs. Effects were particularly strong for interventions that involved early contact with the worker from the workplace, ergonomic worksite visits, and the availability of a return-to-work coordinator. Vooijs et al. [63] systematically examined evidence on the effectiveness of interventions that enhanced work participation of people with chronic diseases. They found that interventions that focused on changes in work organization, working conditions or the work environment increased work participation of people with chronic diseases. Wagner et al. [64] systematically examined evidence on the impact of workplace interventions to improve social support and supervisory quality on absenteeism, productivity and financial outcomes. They found that social support and supervisory quality interventions had a positive impact on workplace outcomes.

Fourth, workplace interventions appear to be more effective for workers with musculoskeletal disorders than for workers with mental disorders, which has become the second leading cause of disability and early exit from the labour market. For example, van Oostrom et al. [65] found evidence that workplace interventions reduce sickness absence among workers with musculoskeletal disorders, while they are less effective for workers with mental disorders or other medical conditions. Stock et al. [66] found that simple interventions such as supplementary breaks were more

effective than psychosocial interventions in preventing or reducing musculoskeletal disorders and reducing symptom intensity.

Nonetheless, studies focused on mental health suggest that both population as well as multifactorial interventions, which combine clinical and workplace intervention, show some promise. For example, Tan et al. [67] carried out a systematic review of the evidence on the effectiveness of universal interventions – those targeted at the total population – in preventing depression at work. Their results suggest that cognitive behavioural therapy interventions produced small but significant positive effects in preventing depressive symptoms in the workplace. Nieuwenhuijsen et al. [68] found that work-directed interventions, which either target work modifications, reduce working hours or support workers in dealing with the consequences of depression in the workplace, are more effective in reducing the number of days of sick leave if they are combined with clinical interventions. They also found that enhancing primary or occupational care with cognitive behavioural therapy reduced sick leave. On the other hand, a recent paper by Dewa et al. [69], which systematically reviewed studies on the impact of return-to-work interventions that incorporated work-related problem-solving skills for workers with sickness absence due to mental disorders, found limited evidence that these interventions effectively improved return-to-work outcomes.

Overall, these studies suggest that there is an evidence base for the development of interventions that focus on improving the health outcomes of older workers. However, the review above also highlights the need for evaluating programmes and interventions, as the evidence is mixed – particularly for mental health – with some programmes being more effective than others. It is clear, however, that a policy fostering the development, implementation and evaluation of workplace-based interventions can play a significant role in maintaining the work capacity of older workers and increasing their labour force participation.

One way through which governments can encourage or compel employers in the design of effective health and wellness workplace-based interventions is through effective legislation. Some evidence for this comes from the US 2010 Patient Protection and Affordable Care Act (PPACA), which requires the Centers for Disease Control and Prevention to offer employers technical assistance and resources to develop workplace health policies and programmes, and to conduct surveys to evaluate the impact of these [56]. PPACA also authorizes the Department of Health and Human Services (HHS) to award grants to small employers to support them in developing comprehensive workplace wellness programmes [56]. Governments can also offer incentives; for example, Massachusetts legislation offers tax credits to employers who offer health and wellbeing programmes, thus creating financial incentives for employers [56].

Finally, Magnavita [70] highlights two critical barriers to the implementation of health promotion policies to increase work capacity: the lack of awareness of effective programmes, and the common practice of employers focusing on traditional health risks in the workplace (e.g. work-related injuries), rather than on the promotion of a holistic state of health and wellbeing. To overcome these barriers, Magnavita highlights the needs to: develop and disseminate knowledge of evidence-based interventions; encourage the participation of employers and other social actors; and adopt an integrated approach that combines prevention of occupational risks with promotion of health behaviours and wellbeing in general [70].

How can the disability insurance system support older workers?

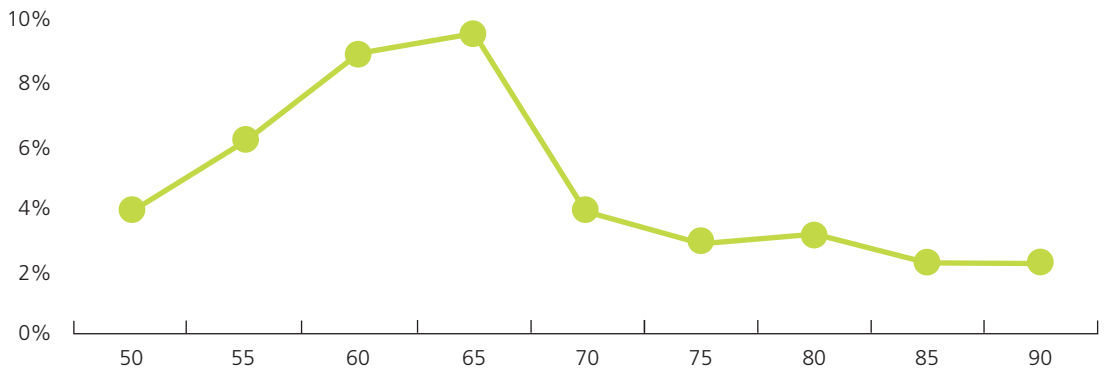
Disability insurance systems have two potentially contradictory goals. On the one hand, they aim to ensure that workers with a disability do not face economic hardship and thus provide compensation for income losses due to reduced work capacity. On the other hand, disability insurance programmes also aim to avoid exclusion and encourage participation in employment [71]. There is large variation across OECD countries in their policies to achieve these goals, which results in vastly different outcomes in terms of both income protection and labour force participation of workers with disability. Because disability insurance uptake increases markedly with age up to the normal age of retirement (Figure 7), the design of disability insurance systems might have profound implications for the employment rates of older people in European countries.

After the onset of health problems that limit workability, individuals may take several routes, including early retirement, disability insurance, unemployment, or social assistance programmes. Garcia-Gomez [73] reviews the disability insurance system across European countries and finds vast differences in disability insurance systems across two dimensions that affect these pathways: the extent of compensation and the 'integration' dimension. For example, while some countries, such as Denmark, Ireland, Italy and Spain, define eligibility based on reduced work capacity, Belgium, France, the Netherlands and Portugal define eligibility based on reduced earnings capacity. In addition, the minimum level of disability to be entitled to benefits varies from 15% in the Netherlands to permanent disability in Ireland [71].

Importantly for maintaining employment in older age, countries differ in the extent to which their programmes support integration of disabled individuals into the labour market. For example, Denmark's disability insurance system has a strong integration component, as it allows individuals to receive disability benefits while receiving earnings from work, while Ireland and Portugal have the lowest levels of integration, as they do not allow extensive disability benefit accumulation with earnings from work [71,73].

Governments might consider reforms to both the compensation and integration components of disability insurance systems to create incentives for employment in older age. For example, in recent years, many OECD countries, such as the Netherlands, have reduced the compensation dimension by considerably tightening

Figure 7: Disability insurance enrolment by age in 11 European countries, SHARE, 2004



Source: [72].

eligibility rules, which has substantially lowered the number of new disability insurance claims. However, reducing compensation, e.g. by tightening eligibility rules, risks compromising the goal of preventing social exclusion and economic hardship of workers who experience reduced work capacity. Of even more concern, reduced compensation may itself have negative consequences for health. In a recent paper, Garcia-Gomez and Gielen [74] examined the impact of a major Dutch reform that introduced stricter eligibility criteria and reduced generosity in the disability insurance system. Their results showed large adverse effects of this reform on mortality and life expectancy: a 1000-euro reduction in annual benefits increased the probability of death among women by 2.4 percentage points more than 10 years after the reform.

This leads us to focus on the integration component and ask the question whether a stronger integration component of disability insurance is effective in helping older workers to continue in employment. Unfortunately, there is not a strong evidence base from which to make claims about specific features of the disability insurance that might be more effective in achieving this goal. However, Garcia-Gomez [73] finds that the impact of a health shock on labour market participation varies considerably across countries with different integration policies. For example, the impact of a health shock on labour market participation in nine countries examined was strongest in Ireland, where individuals with disability cannot combine receipt of disability benefits with earnings from part-time work. By contrast, no effect on labour force participation from a health shock was found in Italy and France, both countries with high mandatory quotas for disabled workers.

These results are only indicative and do not enable strong causal claims. However, they suggest that policies that enable older workers with disability insurance to combine benefits with part-time work, and require mandatory employment quotas for disabled workers, may be more successful in maintaining labour force participation in older age. More research is required to establish whether this is a causal association, and to comprehensively study how the design of disability insurance systems may support workers in maintaining both good health and employment in older age.

Conclusions

Concerns about the impact of population ageing on the sustainability of pension systems have led to major policy reforms to improve the sustainability of the welfare state, such as blocking pathways to early retirement and increasing the age at which workers can claim full retirement benefits. These policies are primarily driven by concerns of economic sustainability. In this brief, we have shown that a narrow focus on increasing retirement age or reducing the generosity of pension systems is likely to have adverse effects on the health of older workers, particularly those in physically or psychologically demanding jobs, potentially leading to increased costs to the health care system, which may in turn lead to lower productivity and increased costs. With the exception of cognitive function, we have shown evidence that increasing the normal retirement age might lead to increased rates of physical and mental health problems.

Yet, we have shown that increasing labour force participation in older age is critical to the puzzle of how to effectively address the challenges that population ageing poses to the welfare state [6]. Many of the usual policies proposed to address these challenges rely on the assumption that longer working lives imply increased work capacity: we are living longer, the argument goes, and therefore we are able to work longer. As we have shown, this argument falls short of considering the evidence suggesting that most countries have not experienced consistent compression of morbidity: while we indeed live longer today than three or four decades ago, we are not necessarily in better health at every year of age. A potential rise in morbidity is associated with increasing rates of some physical health problems, but also with a rise in the contribution of mental disorders to work disability, which represent 25–60% of all new disability benefit claims in OECD countries [20].

Several important policy implications can be derived from the analysis carried out in this policy brief. First, our review of the literature suggests that an approach that is based solely on increases to the normal retirement age might contribute to an increase in the labour force participation rate of older people, but it may also have its own negative health consequences for the physical and mental health of older people. A careful review of these policies, therefore, should consider the potential social, economic and health care costs associated with later retirement. Second, we have identified the workplace as an important, yet often underutilized, setting for intervention to support the health of older workers. Such interventions, we argue, can encourage sustained healthy behaviours and improved health capacity, which should translate into increased workability.

Third, our review emphasizes the importance of identifying evidence-based work interventions that can support older workers. So far, we have identified several principles to guide the identification of work-based programmes that either prevent work disability or help workers with a disability to return to work sooner. First, we emphasize evidence that workplace-based interventions that prevent work disability or improve return-to-work outcomes show some effectiveness in supporting people in continuing to work. These programmes, therefore, should be prioritized in any policy efforts to increase labour force participation or support older workers, as health remains the leading cause of labour force withdrawal among older people. Second, workplace interventions that combine multiple components appear to be more effective than interventions that focus on just one dimension. Interventions that combine counselling, patient education, behavioural training and psychotherapy appear to be more effective than those that focus on one of these dimensions only [59]. Likewise, multilevel interventions that focus on both the employee and supervisors are more likely to increase workability than those that focus only on employees. Third, our analysis emphasizes the importance of changes to features of the work environment to improve the workability of older people, including work accommodation offers, early contact between health care providers and the workplace, and improvements in the quality of supervision and social support for older workers.

The fourth implication is that policies to increase the workability of older people need to take mental health seriously by encouraging interventions that prevent mental disorders or through supporting older workers with mental illness to return to work. An important lesson is that most studies have focused on musculoskeletal disorders, but there is less evidence of workplace interventions that improve mental health, or those that have been examined seem less effective for the latter [65]. The available evidence, however, emphasizes the need for workplace programmes that are multifactorial, combining clinical as well as worksite interventions. In addition, governments should consider the effectiveness of population-level interventions to reduce depression at work, for example, by expanding access to cognitive behavioural therapy to older workers through effective identification and delivery of mental health services in the primary care setting [67]. Overall, however, more research is needed to identify effective mental health interventions in the workplace, as evidence so far is limited.

Our next recommendation is to consider reforms to the disability system. We cautiously argue against reforms that reduce the compensation level or raise the threshold for eligibility to disability benefits, as these programmes can have negative health consequences for a substantial part of the workforce [74]. Instead, we emphasize the importance of disability policy reforms that improve the ‘integration’ dimension of the disability system, that is, policies that encourage the integration of workers with health problems into the labour force. While part of this is achieved through improvements in the work environment and workplace interventions, rules and regulations of the disability insurance system may help in encouraging integration, for example, by allowing individuals to receive disability benefits while receiving earnings from work, thus supporting a transition back to employment [71,73]. Mandatory employment quotas that require employers to have a certain proportion of disabled workers among their staff, as well as anti-discrimination legislation for people with disabilities, are likely to disproportionally benefit older workers [71].

We end with a final recommendation to question the common assumption by employers and governments that older workers are less productive than younger workers, as this often stems from a misconception about measuring productivity across ages. Unless hampered by a health condition that limits their workability, older workers do not appear any less productive than their younger counterparts [51]. Yet, there appears to be significant age bias in the offer of workplace programmes, whereby younger people are more likely to benefit from them than older workers, despite the fact that the latter are much more likely to experience health limitations.

Analysis from the OECD reflects a dramatic mismatch between disability benefit inflow and participation in vocational rehabilitation offers in most countries. For example, from all workers in rehabilitation and employment programmes, the proportion that is aged 45 years or older is just 14% in Austria, 20% in Denmark, 3% in Portugal and 13% in Switzerland [71]. The rest of the workers in these programmes are below the age of 45. This reflects a strong age bias in vocational rehabilitation. The OECD estimates that in Portugal, for example, the number of persons in rehabilitation programmes is more than six times larger than the disability benefit inflow, suggesting that young workers disproportionately benefit from programme offers. By contrast, in most countries (except the Netherlands) people aged 45 years and older are practically excluded from these programmes [71]. This likely reflects prejudices and misconceptions of employers about the productivity of older workers, which result in reduced investment in the older workforce. This contradicts evidence that older workers have an enormous potential to contribute to our economy and should be replaced by clear directives to enable older workers to benefit from workplace programmes and policies that support them in maintaining productivity, while at the same time promoting their physical and mental health.

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World Health Organization
Regional Office for Europe
UN City, Marmorvej 51,
DK-2100 Copenhagen Ø,
Denmark
Tel.: +45 39 17 17 17
Fax: +45 39 17 18 18
E-mail: postmaster@euro.who.int
web site: www.euro.who.int

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