



HEALTHY AGEING IN THE ERA OF AN **AGEING** **GLOBAL WORKFORCE**



In this report...

Executive summary	4
Chapter 1: The world's ageing workforce – an unstoppable trend	5
<ul style="list-style-type: none">● Life expectancy is increasing – the number of over-65s worldwide is growing rapidly.● Birth rates are falling, reducing the number of young people in the labour market.● Many formerly fatal diseases have become survivable well into old age.● Social safety nets are under pressure from demographics, meaning employers' interventions are more attractive and more necessary.	
Chapter 2: Managing and motivating an ageing workforce	10
<ul style="list-style-type: none">● Over-50s make a huge contribution in the workplace – their experience, skills and attitude are all valuable.● But they are much more susceptible to a range of health conditions.● This makes wellness interventions increasingly valuable to organisations.● We should ensure both workplaces and benefits cater to their unique needs.	
Chapter 3: The ageing process and what we can do about it	17
<ul style="list-style-type: none">● The science of ageing is evolving and further extending and enhancing life.● Many interventions to delay ageing can have wider benefits for all employees.● We need workplaces and policies to address age-related conditions and diseases.	
Chapter 4: How can employers and employees combat the effects of ageing?	22
<ul style="list-style-type: none">● What can employers do?● What can employees do?	
Conclusion: Ageing cannot be ignored. It should be embraced	25

Executive summary

Ageing begins the moment we are born – it's one of life's inescapable forces. We see its progress every day in the mirror. In time it brings wisdom and experience – but also slowing reflexes and physical decline.

And as individuals age, in every part of the world, whole societies are also getting older. An ageing workforce is now a reality for every organisation. And that's creating new challenges and opportunities for multinationals all over the world. They're learning to retain experienced talent, tap into a pool of older employees and manage a multi-generational workforce that creates new dimensions in diverse thinking.

But, older employees also have unique requirements – from HR policies and employee benefits (EB), to pensions and career development. Getting older is also the primary risk factor for many acute and chronic health conditions – which increases medical costs and on-demand interventions by health providers, employers and their benefits partners.

Older workforces require proactive strategies to address employee wellness as well as measures to reassure them that their families will be looked after if their health falters. With increasing numbers of older employees, multinationals need to consider taking steps to minimise sick leave, control their medical costs and limit the impact of disability.

Rising life expectancies mean this issue will only become more important for business leaders in the coming years. Companies that can design policies, benefits, workplace infrastructure and workforce strategies around this ageing global workforce can reap a 'longevity dividend'. Organisations that don't adapt face rising EB costs, worsening employee health, retention problems and a growing skills gap.

And, significantly, as the COVID-19 pandemic has now shown us, caring for this higher-risk group is vital for long-term HR strategies and managing employee benefits risks.

The multigenerational workforce in an ageing society is a reality. Are you ready?

With increasing numbers of older employees, multinationals need to consider steps to minimise sick leave, control their medical costs and limit the impact of disability.

Chapter 1: Global trends in ageing

In 1950, the global population was 2.5 billion. By 2019, it had risen to 7.7 billion. By the end of the century the United Nations (UN) expects it to reach 11.2 billion.¹ And a significant factor in that increase is due to the fact that people are living longer.

Thanks to improvements in medical science and technology along with a number of other factors, life expectancy has been rising for decades. Between 2000 and 2016 alone, global life expectancy rose by 5.5 years.² A child born in 2016 can expect to live to 72 years old – although where they're born and how wealthy they are will have a dramatic effect on that number. Life expectancy in low-income countries (62.7 years) is 18.1 years lower than in high-income countries (80.8 years).

Add in slowing birth rates, and the result is a massive redistribution of the population according to age.

In 2018, for the first time in history, the over-65s outnumbered children under five and by 2080 they're expected to be a bigger group than the under-15s. The number of people aged 80 years or over is projected to triple, from 143 million in 2019 to 426 million in 2050.¹

So, not only are we getting older as a society, we are also increasing the number of high-dependency elderly – those requiring around-the-clock care in a nursing home – in society who must be looked after by a shrinking group of working age adults.

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The major trends of ageing³

The US National Institute on Aging (NIA) identified a number of major emerging trends in global ageing which present a snapshot of challenges and opportunities for societies and employers.

Trend 1:

Economic maturity vs. older populations

Some countries will grow old before they grow rich – and less-developed nations may be forced to confront issues such as social support and the allocation of resources across generations without the economic growth enjoyed by ageing societies in the West.

Global employers should tailor benefits to local requirements for ageing employees.

Trend 2:

Increasing life expectancy

Every part of the world has experienced a steady increase in life expectancy since the middle of the 20th century. The most dramatic gains have occurred in East Asia, where life expectancy at birth has increased from less than 45 years in 1950 to more than 72 years today.

Our expectations about retirement age, pension benefits and how we assign health benefits must adapt.

Trend 3:

An army of the ‘oldest old’

The ‘oldest old’ are people over 85 – and in many countries, they are now the fastest growing age group. They have the highest levels of disability and care needs – and their growing numbers put a strain on pensions provision and intergenerational stress related to financial and emotional support.

Employers need to tailor working norms and benefits around employees caring for elderly dependents.

Trend 4:

Growing burden of chronic disease

Within 15 years, the loss of health in every region of the world will be greater from noncommunicable or chronic diseases – such as heart disease, cancer and diabetes – than from infectious and parasitic diseases. Although, it is worth noting, this does not include the impact of the COVID-19 pandemic – which has had an even greater impact on the elderly and those with chronic diseases.

An ageing workforce increases the payoff from wellness programmes and proactive screening for chronic illnesses.

Trend 5:

Population decline

More than 20 countries will see their populations decline within a decade, even as they get older. Russia's population is estimated to shrink by 18 million between 2006 and 2030. The populations of Japan, Ukraine, South Africa, Germany, Italy, Poland, Romania, Bulgaria and Spain are all likely to shrink by one million or more in that same period.

With fewer young people entering the workforce, recruitment and retention policies for older workers become key.

More than 20 countries will see their populations decline within a decade, even as they get older.

Trend 6:

Family structures

The number of older people living alone is rising – more than 40% of women over 65 live alone in parts of Europe. Older people prefer to be in their own homes and communities. Home nursing, community care, assisted living and long-stay hospitals are all becoming essential.

The financial and time burden on employed family members should be reflected in HR policies.

Trend 7:

Evolving social insurance

Salaries, social insurance, occupational pensions and private savings will all be affected by government policies adapting to older societies. About 60% of countries now have the same pensionable age for both men and women, and the age at which state pensions begin is trending upwards.

Financial wellness programmes, better company pension schemes and retraining can offset this.

Trend 8:

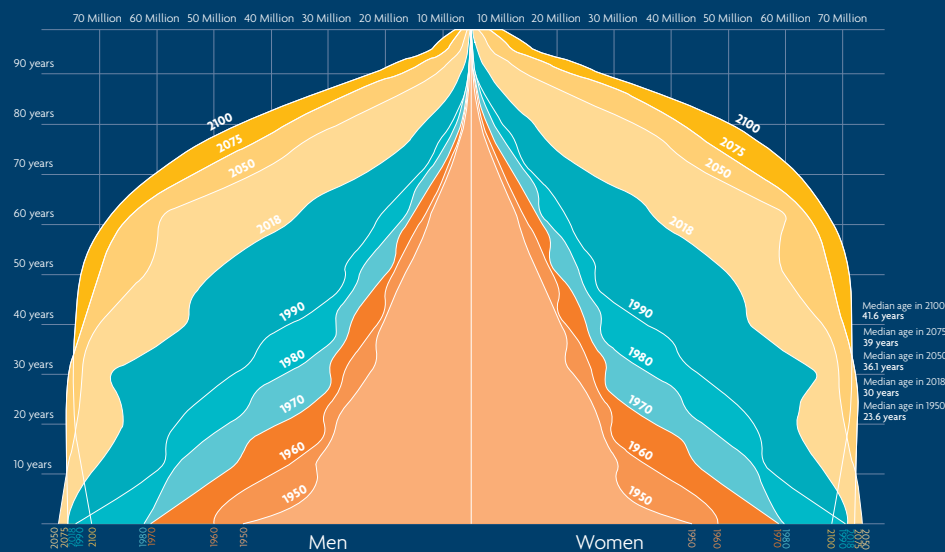
Emerging economic challenges

Ageing populations will strain national budgets, particularly as the number of tax-payers for each older, non-productive or dependent citizen shrinks. New tax burdens may discourage future workforce participation – and change what the state can feasibly provide in terms of care.

The need for broad-based benefits packages with some measures for dependents could become compelling.

The financial and time burden [of caring for elderly relatives] on employed family members should be reflected in HR policies.

Figure 1:⁴ Distribution of male and female populations by age-band, 1950-2100



Data source: United Nations Population Division – World Population Prospects 2017; Medium Variant.
The data visualisation is available at [OurWorldinData.org](https://ourworldindata.org), where you find more research on how the world is changing and why.

The big questions

For governments, these trends break down into two critical questions:

1. How healthily can we age?

Will population ageing be associated with a longer period of good health; a sustained sense of wellbeing, extended periods of social engagement and unaffected productivity? Or will it be accompanied by more illness, disability and dependency?

2. How do we pay for an ageing society?

How will ageing affect healthcare and social costs? Are these futures inevitable, or can we act to establish a physical and social infrastructure that might foster better health and wellbeing in older age?

For employers, the questions are slightly different:

1. How can we help employees manage their own ageing process?

What screening and other proactive measures can we offer to minimise the impact of age-related chronic and acute illnesses? How can we help them prepare for a potentially longer period of retirement when it comes?

2. How do we ensure our older workforce continues to contribute?

What should we be doing to encourage healthier lifestyles? How are we structuring broader performance and reward structures that adapt as employees age? What benefits and policies might help them meet their own demands as carers of the 'oldest old' in order for us to retain their talent and experience?

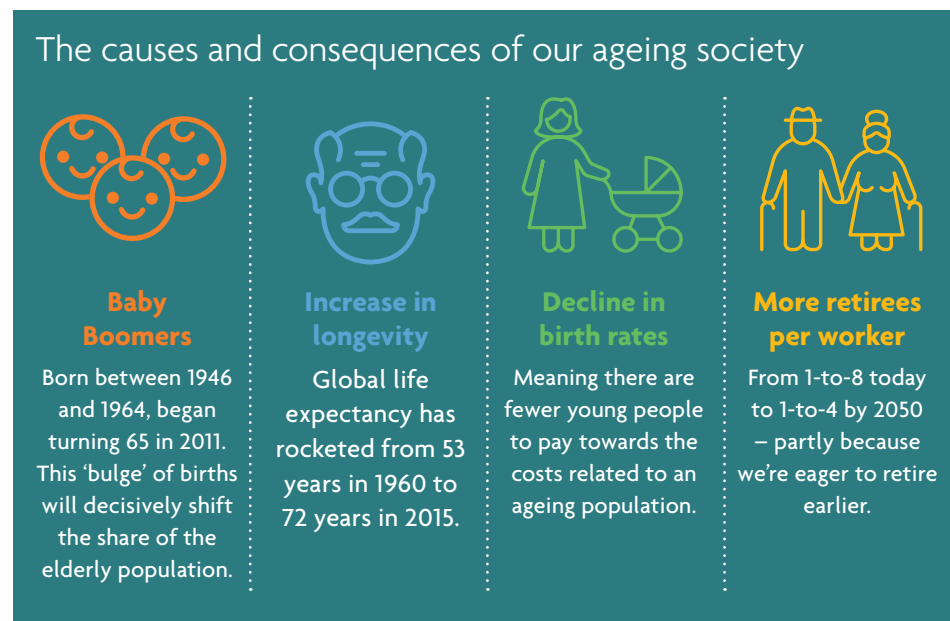
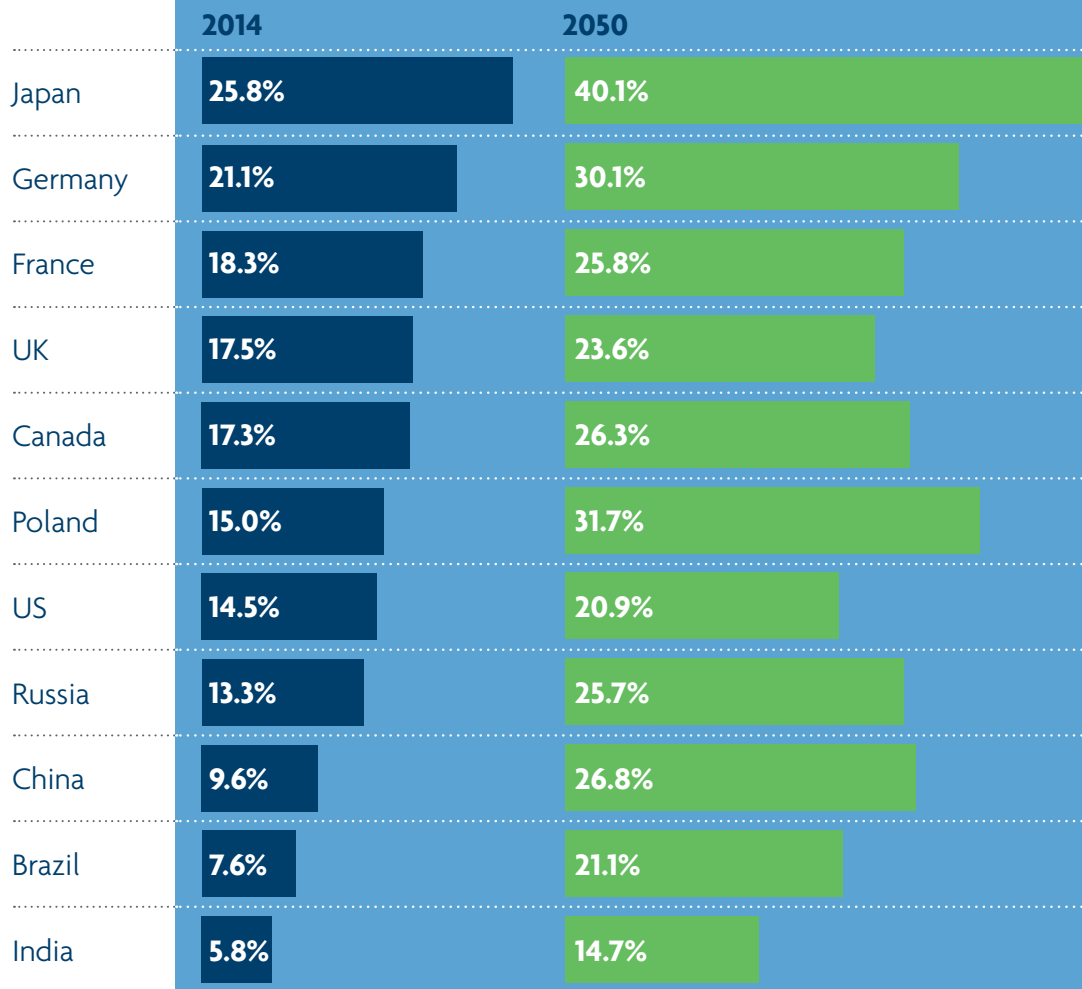


Figure 2:⁵ Share of population age 65 and over (Boomer growth rates)



Source: U.S. Census Bureau International Database

In summary...

- The world is getting older.
- There are fewer younger workers to support growing pension costs.
- More older people need to stay in work.
- Governments are under strain, putting more pressure on companies to manage issues related to age.

Chapter 2: Managing and motivating an ageing workforce

As the world gets older, one of the most compelling questions is how we deal with the changing proportion of working age people versus non-workers (defined as those 14 and under and the over 65s).

This has profound implications for:

- **governments** – with fewer tax-payers to fund activities and yet, at the same time, more people needing services such as healthcare and pension provision.
- **companies** – which face labour shortages even as demand for goods and services keeps increasing.
- **pension funds** – which will have fewer people paying into schemes and higher liabilities from the already-retired.

In high-income countries, this ‘dependency ratio’ of non-working age to working-age people is around 27%⁶ – roughly one in four people is not ‘working age’.⁴ But that ratio is worsening. In 2019, 9% of the world’s population was over 65. By 2050, that will be 16% – and in Europe and Northern America, it will be 25%.¹

It’s fortunate, therefore, that fewer people can afford (or want) to retire early these days, and the proportion of workers aged up to 70 in the workforce is growing. However, this presents employers with some more big questions. Let’s look at what they are and what we might do about it.

Defining age demographics

Non-workers: those under 14 and over 65.

Working age: those aged 15 to 65.

Older workers: employees aged 50 and 70.

What are the health implications for older workers?

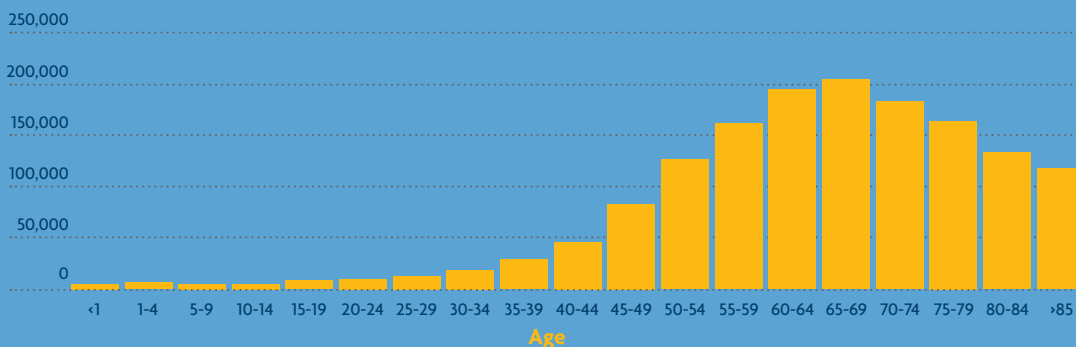
Dr David Sinclair, founder and director of the Paul F. Glenn Center for Biology of Aging Research at Harvard Medical School, says our healthcare systems should no longer make a distinction between age and disease. “Ageing – a process that over time causes dysfunction, suffering and death – sounds a lot like a disease,” he says.⁷ But, the reality is that ageing is also a key factor in developing diseases.

We all know about the dangers of smoking, which greatly increases the risk of cancer and other chronic diseases. But statistics show that simply being over-50 also significantly increases your chances of getting cancer (figure 3⁸).

...the reality is that ageing is also a key factor in developing disease.

Figure 3:⁸ Invasive cancer incidence by age, US 2009

Incident counts



Source data: White et al, Age and Cancer Risk: A Potentially Modifiable Relationship, 2013

That's why designing information, interventions and relevant benefits for this 50 to 70 age group is increasingly important for employers. They are more likely to require the services of health professionals as a result of injuries and illnesses (ie, they are more likely to break bones in falls, they are more likely to contract pneumonia as a consequence of the flu etc). And they consume far more prescription medications than younger people.

But it's in the area of chronic conditions that an ageing population has the most impact on health costs – and, by extension, health benefits provision, health insurance and preventative countermeasures.

What's the upside of older employees?

Before this all sounds too negative, we should pause to consider the many significant benefits of an older workforce.

Employers report that older employees have a stronger work ethic than their younger colleagues. Advancing age is also associated with greater levels of experience, autonomy and efficiency. Generally, older workers report lower levels of work-related stress and less conflict with their co-workers.

They may also be better at balancing work and non-work demands, and show greater flexibility than their younger counterparts.

...designing information, interventions and relevant benefits for this 50 to 70 age group is increasingly important for employers.

Advantages of older employees



- Wisdom and judgment in decision making
- Ability to apply life skills to problem solving
- Developed communication skills and tact
- Greater willingness to share experiences
- Strong organisational skills
- Value placed on teamwork
- More patient than younger employees
- Willing to train and mentor younger employees
- Less competitive
- Fewer external responsibilities and distractions
- Preference for part-time work providing greater flexibility

Disadvantages of older employees



- Higher pay due to experience/tenure
- Reluctance to accept peer reviews of own work
- Resistance to and fear of change
- Increased medical care and insurance costs
- Difficulty mastering new technological challenges
- Lack of formal qualifications
- Need for additional training
- Less commitment as they approach retirement
- Age-related performance impairment
- Preference for flexible hours which some businesses cannot provide

In skilled professions, retaining older workers can be critical... Without their veteran tech people, many banks and airlines would no longer be able to function.

Older employees tend to experience lower rates of work-related injuries and illnesses (albeit with longer recovery times if an incident does occur) and staff turnover tends to be lower among the older employee groups.

Research from the World Economic Forum shows a more age-diverse workforce also delivers better performance overall.⁹ A survey of employers by the Transamerica Center for Retirement Studies revealed 87% thought the over-50s were “a valuable resource for training and mentoring” and 86% “an important source of institutional knowledge.”¹⁰

In skilled professions, retaining older workers can be critical. In IT, for example, around 35% of organisations in a Computerworld survey said they need legacy programming skills – skills that young people have no interest in learning.¹¹ Without their veteran tech people, many banks and airlines would no longer be able to function.

Are perceptions changing?

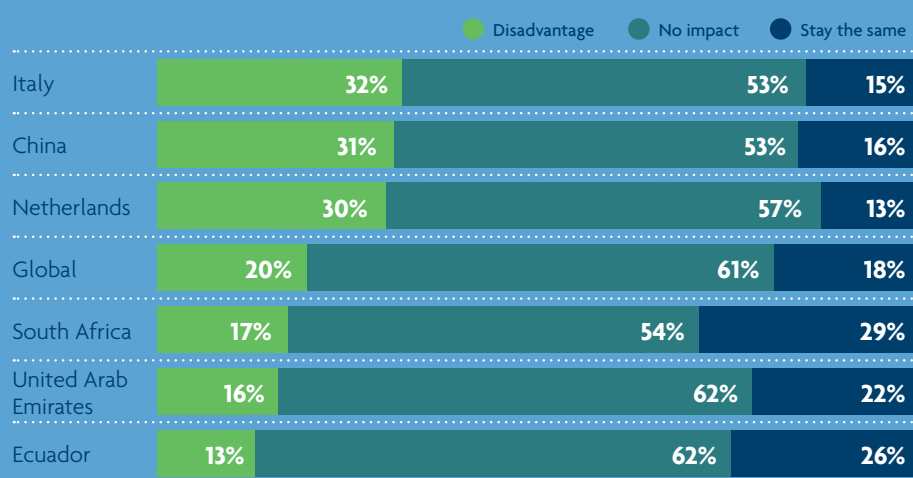
These factors, coupled with a generally ageing population, ought to be changing perceptions of over-50s employees. But the picture isn't that clear cut. A study by Deloitte, for example, found large regional and cultural variations in views on the merits of an ageing workforce. Globally, 20% of organisations think over-55s are a disadvantage on the payroll (figure 4¹²).

The reasons are obvious. Older workers, aged between 50 and 70, see diminished physical capacity, slowing cognition, decreased working memory, difficulty with hearing and vision, and higher rates of musculoskeletal conditions – all of which can affect job performance. Older employees fare less well with certain kinds of work, such as shift work and long hours.

Older employees also have slower recovery after a job-related injury or illness. For example, the average length of time away from work for a workplace injury or illness was eight days across all workers – but 11 days for workers aged 55 to 64 and 18 days for those 65 and older.

With such a mixed picture, it's no surprise that a more individualised approach to addressing older employee needs is necessary.

Figure 4:¹² Organisational perception of workers over 55



Note: Chart shows the six countries with more than 100 responses showing the greatest deviation from global “disadvantage” percentage. Number of responses: Italy = 106, China = 817, Netherlands = 136, global = 11,070, South Africa = 354, United Arab Emirates = 108, Ecuador = 139. Source: Deloitte Global Human Capital Trends survey, 2018.

...69% of insureds [over 50] have a single chronic condition, 39% have two or more and 22.8% have more than three.

Handling chronic conditions: the vital mission¹³

But it's in the area of chronic conditions – including back, digestive and cardiovascular system disorders – that we see the biggest challenges and opportunities for employers when it comes to their employees aged 50 to 70.

As people move into this bracket, the costs of managing their conditions – as well as the potential for developing related complications – increases as they occur more regularly (figure5¹⁴).

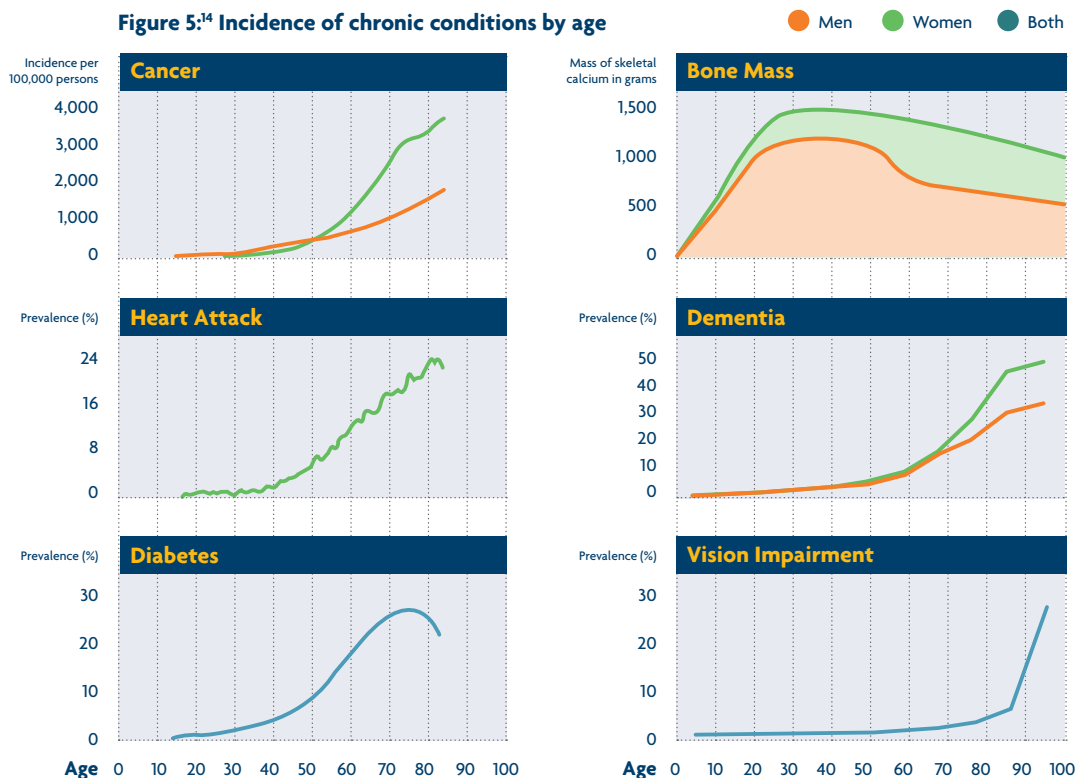
The US Centers for Disease Control and Prevention (CDC) estimated that about 60% of all adults in the US have one or two chronic diseases.¹⁵ In Sweden, 44% of the population have one chronic disease and 25% two or more.¹⁶

We compared this metric with our own MAXIS data on the over-50s – based on multinational employees and their dependents from across the Americas, Middle East, Africa, Asia and Europe – and found that 69% of insureds have a single chronic condition, 39% have two or more and 22.8% have more than three.¹⁷

MAXIS data¹⁷

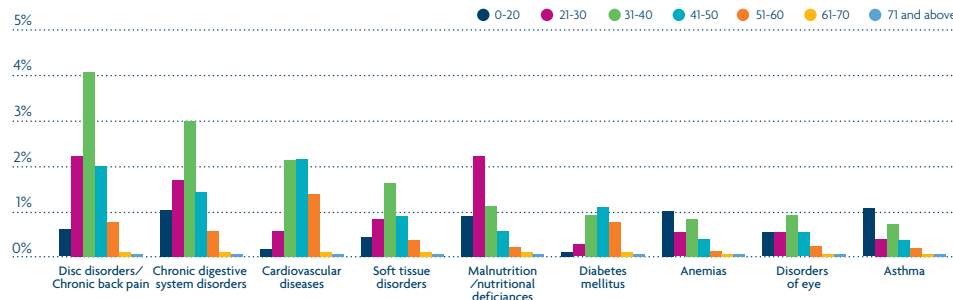
MAXIS data comes from a total population of over 1.6 million lives (employees and their dependents) collected from over 320 multinational clients in 33 countries during the 2018-2019 period.

Figure 5:¹⁴ Incidence of chronic conditions by age



Source data: Luu and Palczewski, Human aging and disease: Lessons from age-related macular degeneration, 2018

Figure 6:¹⁷ MAXIS multinational client data showing chronic diseases in various age groups



Source data: MAXIS GBN data from multinational client health and wellness reports, May 2020

Chronic diseases: preventable costs?

When we looked at MAXIS data on multinational employees and their dependents (figure 6¹⁷), we found an interesting link between chronic disease and age.

While the majority of the MAXIS insured population included in this data is of working age, chronic diseases are still prevalent, even in younger age groups. As the graph shows, chronic back disorders, chronic digestive system disorders and cardiovascular diseases begin to start developing in younger age groups, particularly the 31-40 bracket.

But the good news is that many chronic conditions can be managed. As in the over 50 age bracket (figure 7¹⁷), six of the top eight conditions causing a claim for younger workers can be moderated with lifestyle changes.

And, as these chronic diseases are impacting younger workers now, wellness, screening and health packages can help employers address these conditions before they become more debilitating in later life.

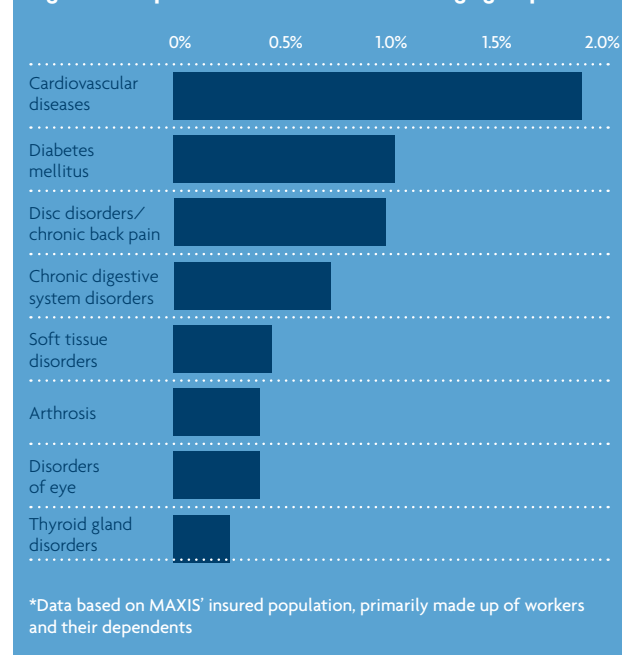
This means that wellness programmes implemented in the right way and at the right time could have a huge impact on the costs of healthcare now and in the future.

For example, according to the American Lung Association, just one year after a person stops smoking, their risk of developing coronary artery disease drops by half. In fact, there are

measurable physiological improvements after even a few hours.¹⁸ Poor diet, a lack of physical activity, alcohol abuse and ignoring known risks – such as a family predisposition to certain conditions – can result in a dramatic increase in chronic conditions post-50.¹⁹

Addressing these lifestyle issues with younger workers can help slow the onset of some of these chronic conditions, both now and in later life. Early intervention is an attractive option for employers looking to better manage costs.

Figure 7:¹⁷ Top chronic conditions for 50+ age group*



That means wellness programmes implemented in the right way and at the right time – particularly when employees are still young – could have a huge impact on the costs of sustaining an older workforce.

Diabetes – the average cost of managing a patient with diabetes is over US\$13,000 per year. Two-thirds of people with diabetes, in the US, have high blood pressure – so their risk of stroke is two to four times higher.²⁰ Diet, activity levels and weight can all accelerate the development of diabetes, so employers who engage with younger workers on diabetes education, prevention and management can minimise costs later.

Heart disease and stroke – an estimated 26% of the world's population has hypertension (blood pressure above 140/90).¹ A 12-13 point reduction in systolic blood pressure – the higher number, which is the force at which your heart pumps blood around your body – can reduce heart attack risk by 21% and stroke risk by 37%.²² So keeping hypertension at bay is vital.

Cancer – employers can support lifestyle changes, particularly smoking cessation and a healthier diet, to reduce the incidence of cancer in older employees. We know that while many cancers don't present until middle age and older, their causes are actually rooted in younger behaviours.

Work histories and health – unemployment has been found to negatively influence medium and long-term physical and mental health. Retirement is also generally associated with health deteriorations.

Wellness benefits are effective – both to help younger employees avoid chronic conditions later and over-50s to manage them, maintaining productivity.

In summary...

- The incidence – and cost – of ill health increases markedly after 50.
- Organisations should carefully evaluate the advantages of retaining older employees.
- Wellness benefits are effective – both to help younger employees avoid chronic conditions later and over-50s to manage them, maintaining productivity.
- Adapting working practices and policies to make them more relevant can also help retain over-50 key workers.



Pandemics: age awareness hits home

This report was written just as COVID-19 was gripping the entire world. This global pandemic has brought home some useful lessons in relation to older workers, health and costs.

1

Employers must not assume that the way an illness affects the majority of its workers will apply to all. In this instance, older workers are likely to suffer far greater adverse effects and potentially for much longer. COVID-19 also reminds us that average effects are actually distributed along a curve. Health and wellness interventions while primarily targeted at older workers, for example, can also benefit younger or fitter employees, a small number of whom will be hit by an acute illness such as COVID-19 or chronic conditions.

2

The over-50s do require special attention. Hospitalisation and mortality levels for this particular virus are much higher once patients are over 60 according to the WHO.²³ Tracking their health and ensuring they have the right protections pays dividends in a normal year, but as far as we're aware at this point, has been little help during the global pandemic.

3

Mortality is much higher for those with underlying or chronic conditions, such as diabetes or heart disease – conditions that are also more common in over-50s. Helping any employee, but particularly the over-50s, manage and suppress chronic conditions isn't just good for their productivity – it might save their lives.

Chapter 3: Why do we age and what can we do about it?

We know that the world's population is ageing. And we've seen that governments and employers have major challenges – and some great opportunities – if they design benefits plans and policies to cater to this evolving reality.

But ageing is also the subject of a vast and growing body of science²⁴ – meaning our understanding of the process is evolving fast. Knowing why we age and what we can do about it is hugely important – both for us as individuals, and in terms of shaping our responses to an ageing workforce. If, for example, treatments to delay ageing at a cellular level become commonplace, we might need to rethink our entire approach to manage a much healthier workforce.

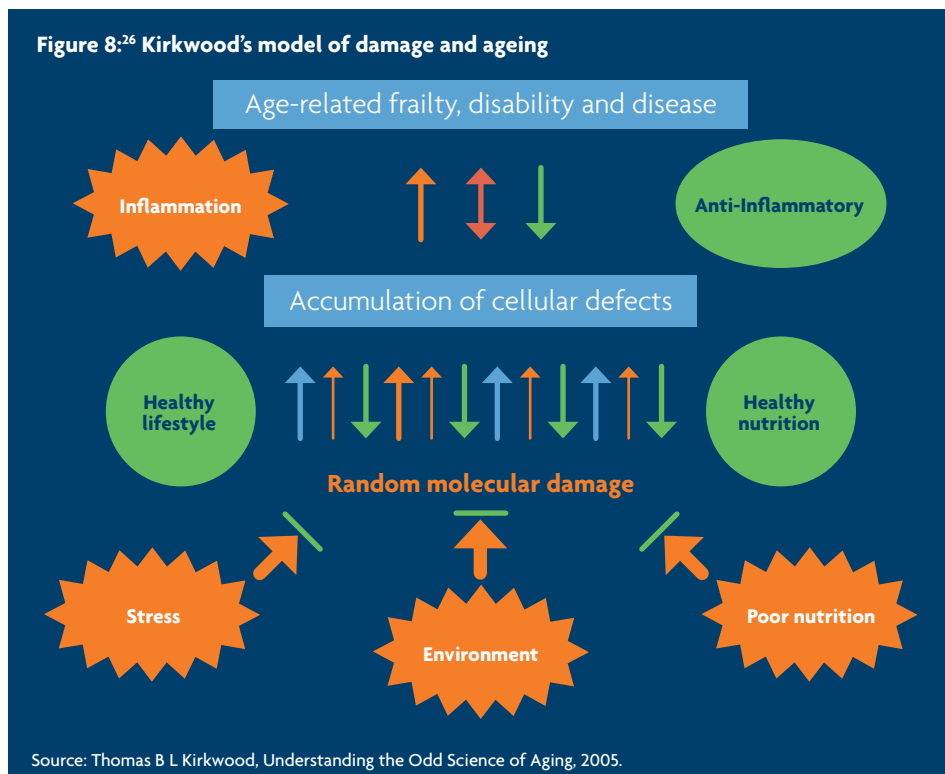
This science also helps us understand which interventions to help with healthy ageing will work – and might therefore be part of future EB packages. So, let's look at how ageing actually works.

Start with the cells

The human body is constantly renewing itself. Different types of cells die off and are renewed at varying rates. Stomach cells, for example, need to be replaced every few days. Your bone cells might last ten years. Red blood cells? About 200 billion new ones are made each day. And your brain cells? Most of those have been around since you were two – and won't ever be replaced.²⁵

New cells are created using information stored in our DNA. Each time a cell is copied using this information, there is a small chance the copying goes slightly wrong – so-called 'replicative senescence.' These mutations can be perfectly benign. In other cases, they can cause conditions such as cancer, replicating the 'wrong' version of the cell to cause tumours.

Figure 8:²⁶ Kirkwood's model of damage and ageing



Radical theories

Since the 1950s, it's been thought that 'free radicals' – unpaired oxygen atoms – in the body cause damage to our DNA²⁷ which is a fundamental cause of age decay.²⁸

Later research – especially the mitochondrial theory of ageing²⁹ in the 1970s – identified issues with the genome in the parts of our cells that generate energy (the mitochondria). And we began to understand more about how telomeres – the 'cap' at the end of our chromosomes that protect our DNA when it replicates – get shorter as we age. One expert forging new theories is Dr David Sinclair. He suspects that a loss of genetic information is the cause of ageing – it's damage to our epigenome that's causing the problem.

Epigenomic adventures

The epigenome re-writes DNA as it reproduces and epigenomic compounds 'mark' the genome with proteins. As we get older, the epigenome gets worse at its job. Instead of rewriting the DNA properly when a cell reproduces, it writes an 'incorrect' version – reproducing a hair follicle instead of a skin cell, for example. Think about these errors happening across your body, and you have the effects of ageing.

The science is still evolving – and the cellular processes that cause ageing are very varied²⁴ – but all the theories²⁶ agree that external factors can accelerate or delay their effects.

The genome and epigenome

The human genome is the complete assembly of DNA (deoxyribonucleic acid) – about 3 billion base pairs – that makes each individual unique. DNA holds the instructions for building the proteins that carry out a variety of functions in a cell.

All cells have the same DNA, but what differentiates their function is the epigenome. The epigenome is made up of chemical compounds and proteins that can attach to DNA and direct such actions as turning genes on or off, controlling the production of proteins in particular cells. Explained in another way, every cell in your body has the same DNA but different cell types have different epigenomes that controls how they function.

If you think of the genome as a grand piano, each key would represent one of our 20,000 genes. Every key – which could be played in several different ways – would make a different sound. The epigenome would be the pianist.



...a loss of genetic information is the cause of ageing – it's damage to our epigenome that's causing the problem.

Cellular stress... good in small doses?

This research has given us new insights into 'treating' ageing. For example, the degradation of the epigenome can be countered by exerting a good kind of cellular stress on our bodies, activating a 'longevity pathway' hard-wired into DNA, billions of years ago when early bacteria evolved two different modes of living.

When conditions were good, they used their energy to grow and reproduce. But when times were tough, they used their energy to protect and repair their cells. Scientists have known about this since the 1880s and call it 'hormesis'.³² Some researchers even think that ancient notions of 'chi' as a life force might be based on the function of mitochondria and the effects of stress responses on ageing.³³

Today we think this positive stress can be triggered by restricting calories, fasting, eating less meat, vigorous exercise and even exposure to cold. But old-fashioned common-sense wellness measures – avoiding mental stress, getting the right sleep, giving up smoking and avoiding a sedentary lifestyle – are also all vital to a long, healthy life.

The shape of things to come

Individuals can take a lot of these steps to live longer – and, importantly, more healthily. And so, in terms of both life quality and costs, it is better to think of 'anti-ageing' as 'ageing well' rather than actually living longer.

These types of 'ageing well' measures can form a part of employee wellness education, interventions and EB programmes because they have positive general health impacts as well.

The Horvath Clock: how old are you?



In 2011, Steve Horvath's team at University of California, Los Angeles (UCLA) worked out how to measure methylation levels in DNA – the proteins accumulate like plaque on teeth – giving us a new way to measure ageing: the Horvath clock.³¹

The more of these proteins you have, the older you are biologically. This means you might be 40 years old chronologically but have the biological age of a 60-year-old, based on the methylation patterns in your DNA. You can even buy DNA testing kits today to work out your biological age.

If the ageing process is largely caused by the 'noise' coming from epigenomes as they begin to 'heal' after a stressful event, we can take steps right now – how we live and work, the environments to which we expose ourselves and even medicines we take – to stop the rate of ageing.

But scientists are now identifying potential medical interventions across all of the identifiable cellular causes of ageing (figure 9²⁴). Pharmaceutical and therapeutic treatments for ageing might soon become an established part of the health landscape. If it becomes possible to ‘vaccinate’ against ageing by helping our bodies kill off senescent cells, should employers offer it as a means of keeping a workforce healthy and productive?

How about DNA sequencing that could tell us what foods to eat, what medications our bodies will respond to, and what therapies will maximise our potential lifespan? Personalised medicine – tailoring medical treatment and drugs to the genetic makeup of the person receiving the treatment³⁴ – is the future. There are already more than 250 drugs on the market that can be personalised.³⁵ As this industry only looks set to grow, should this be part of every multinational’s medical EB offering?

And, even if we decide these aren’t just another part of a standard health benefits package, doctors will soon be able to prescribe drugs based on a patient’s epigenetic age and cancers will be treated based on their specific genetic mutation rather than their location in the body. The science of ageing and cellular decay is reshaping interventions across a range of conditions that are already part of our traditional health spectrum.

Researchers believe that simply eating well and being active could add five years to a person’s life expectancy. Procedures that activate longevity genes could add eight years and taking compounds that reset the genome could add ten years, making an average life expectancy of 113 years a realistic goal.

Figure 9:²⁴ The hallmarks of ageing





Whether or not individuals want to actively aim to live well into their 100s, whether organisations will have to pay to support the medical interventions that help deliver it and whether society is ready to cope – are, of course, much bigger questions.

The compounds that could shape your future

The moon jellyfish is able to activate features in its cells to reset its epigenome to an earlier time in its life – turning mature cells into ‘**pluripotent stem cells**’, which resemble the ones embryos use to build all the different parts of the body in the womb. Because of their versatility, they’re capable of much deeper regeneration than standard adult cells.

This process was discovered by Shinya Yamanaka, Professor at the Institute for Frontier Medical Sciences at Kyoto University, during his Nobel Prize-winning research into regeneration. Dr David Sinclair at Harvard has already built on Yamanaka’s research to reverse-age the retinal cells of elderly mice, restoring their vision.

Researchers have also identified age-combating compounds. These include **Metformin**, a drug used to treat type 2 diabetes, which has extended the lifespan of lab mice by 6%, lowering cholesterol and the risk of cancer, and a group of small-molecule drugs called **Xenolytics**, which kill ‘zombie’ cells that are no longer replicating, but simply hanging around (the technical term is ‘senescent’ cells.) In lab experiments, these drugs extended the lifespan of mice by 36%. Human trials for these drugs to treat glaucoma and osteoarthritis – conditions caused by zombie cells – are still in progress.



And there are a range of popular anti-ageing supplements, too. Many advocates use antioxidants (which include fashionable compounds such as **Resveratrol**). Then there’s **Nicotinamide Mononucleotide**, which some researchers think has huge promise and is already sold in many anti-ageing treatments (often as nicotinamide adenine dinucleotide, NAD+).

The science for all these approaches is still evolving. If firm evidence emerges that compounds can, indeed, stave off the effects of ageing, should your EB packages cover it? Should organisations recommend their workers take them to remain healthier and more productive? Ethical and financial questions will be as tough to answer as the medical ones.

In summary...

- The scientific process of ageing has a variety of theories and the understanding of it is changing.
- A variety of external factors can impact ageing, yet some cellular stress can help you age better.
- Personalised medicine has the potential to tailor treatment to individuals’ genetic makeup.
- Researchers have identified a variety of compounds that could help slow the ageing process.

Chapter 4: How can employers and employees combat the effects of ageing?

What can employers do?

In the face of an ageing population – and an ageing workforce – doing nothing is not an option.

Aside from the health issues that can hurt productivity and incur large costs, employers in most sectors are facing skills shortages that will require them to cater to the 50 to 70 age group more effectively. With proportionally fewer young people coming into the workplace, employers must recruit, retain and retrain a greater number of older workers than ever before.

1. View older talent as a competitive advantage

The over-50s are an experienced, committed and diverse set of workers. Benefits and wellness packages should reflect their value to the organisation, as well as their specific requirements.

2. Flexible employee benefits

Employees of different ages have different needs and wants from their benefits packages. The key to successfully attracting and retaining staff is for employers to move away from the traditional one-size-fits-all package and offer EB programmes that suit the medical, financial and lifestyle needs of their multigenerational workforces.

3. Wellness programmes

Health education, exercise classes, weight-loss and nutrition counselling, tobacco-cessation programmes and health screenings are valuable benefits for all your employees. These programmes need to start with younger employees to limit the development of chronic diseases that can quickly become costly as they age.

4. Engage older employees

Working with outside organisations can help engage older employees and put in place HR strategies that are relevant and appropriate. The Massachusetts Institute of Technology (MIT) AgeLab, for example, uses consumer-centred thinking to understand the challenges and opportunities of longevity³⁶. In the UK, consultancies are helping employers embrace age diversity.³⁷

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5. Flexible working

Many companies are experimenting with flexible work schedules and part-time opportunities to help older employees work longer. As many as one-third of retirees are willing to work part-time creating a flexible labour pool of skilled, experience employees for companies to tap into.³⁸

6. Better workplace infrastructure

This is another area where catering to the over-50s will also benefit younger employees. Better ergonomics early on can help lower the risk of musculoskeletal injuries, carpal tunnel syndrome and tendonitis – common problems for older workers. Ergonomics can also prevent these problems from developing in younger employees, and can help improve productivity, too. BMW increased productivity on an assembly line staffed with older workers by 7% in just three months through simple changes such as providing cushioned floors and adjustable work benches.³⁹

7. Reduce injury potential

Properly enforced health and safety procedures will cut injuries, illness and absenteeism. Older workers also bring non-physical advantages, so transferring them to roles that allow them to mentor and train younger employees, for example, is ideal.

8. Reskilling older employees

While the skills and experience of older employees can be invaluable, encouraging them to reinvent themselves and investing in programmes to help them acquire new skills can also be hugely beneficial. For example, software engineers who have built careers on older technologies such as COBOL or C++ can use this experience to learn mobile computing, AI and other technologies at a very rapid rate.

[with ergonomics] BMW increased productivity on an assembly line staffed with older workers by 7% in just three months ...



What can employees do?

Encourage your employees to learn about offsetting the effects of ageing and help them with overall wellness.

This will have a positive effect on their health and productivity as they age. But the latest science also offers some other interesting ideas employers might promote.

1. Limit calorie intake

A low-calorie diet boosts longevity, in part because it engages the genes' survival circuits. Limiting intake by up to 25% fewer calories than is recommended for a healthy lifestyle – but not enough to cause malnutrition – lowers a range of disease markers. In lab rodents, calorie restriction delays the onset of age-associated diseases such as cancer and cataracts.⁴⁰

2. Intermittent fasting

This has seen a surge in popularity in the past couple of years.⁴¹ Skipping breakfast (the 16/8 method, keeping 16 hours a day free from food) or eating 75% fewer calories two days a week (the 5:2 diet) engages the longevity genes, boosts health and extends lifespan.

3. Eat less meat

Replacing animal protein with plant protein can improve metabolic health markers. Studies show that meat-rich diets are high in essential amino acids but also pose a high risk of cardiovascular diseases and a variety of cancers. Plants provide fewer amino acids which induces the good stress needed to engage survival circuits and inhibits the compound mTor, encouraging cells to spend less resource dividing and more resource repairing

4. Exercise five times a week

To maximise the effect of diet on ageing, subject your body to physical stress. Running five miles a week, or even just five to ten minutes a day, lowers the risk of mortality by 30% and of death from cardiovascular causes by 45%.⁴² High intensity interval training – rapid breathing and sweat – changes the body at the cellular level to offset ageing processes.⁴³

5. Exposure to cold

This activates the mitochondria in brown fat and enhances its function.⁴⁴ Simply walking outside in a t-shirt on a cold winter's day, exercising in the cold or leaving a window open overnight can all help.

Encourage your employees to learn about offsetting the effects of ageing and help them with overall wellness. This will have a positive effect on their health and productivity as they age.

In summary...

- Both employers and employees can make changes to better manage ageing.
- Employers can put in place benefits programmes and a variety of organisational changes to help their workforce age better, remain healthier and increase productivity.
- Employees can care for their own health with exercise, diet and a healthy lifestyle.

Conclusion: Ageing cannot be ignored. It should be embraced

Over the course of the 20th century, improved health and wellbeing has transformed both our life expectancy and our quality of life in old age. This has radically altered workforce structures and the expectations both employers and employees have of working later in life.

While in some parts of the world increases in longevity are slowing, we've also seen how the science of ageing is poised to deliver fresh gains – not just in how long we might live, but also by delaying some of the physical and mental impairments that, until now, have characterised old age.

These gains may not be evenly distributed. Experimental and costly treatments are unlikely to become a standard part of routine employee benefits packages. But even without the new supplements and treatments for ageing, a growing older workforce raises significant questions for standard health benefits.

... the science of ageing is poised to deliver fresh gains – not just in how long we might live, but also by delaying some physical and mental impairments...

What special benefits do they need? How do we pay for employees with more chronic conditions? How do we design wellness programmes and workplaces that help older employees avoid these conditions in the first place? How do we structure benefits to help all workers fulfil the growing care requirements from their own older dependents?

Those questions cannot be ignored. They sit alongside a host of other challenges created by multigenerational workplaces – around culture, values and career progression, for example. But in a world where retaining skills and boosting employee engagement sit at the heart of workforce strategy, organisations have an opportunity to turn those challenges into advantages.

Taking a progressive, thoughtful approach to flexible and tailored benefits can help older employees, keeping them motivated and productive – as well as opening up pathways for younger employees to take a proactive approach to their own ageing process.

Ageing is inevitable. But we have the power to age better – and by helping employees age well, we create more sustainable futures for our organisations, too.

Taking a progressive, thoughtful approach to flexible and tailored benefits can help older employees, keeping them motivated and productive.

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