

# THE STATE OF LIFE

2024



Second Edition

**SCOR**  
The Art & Science of Risk

## THE STATE OF LIFE **FOREWORD**

Since our first issue of our State of Life back in 2019, we have borne witness to an acceleration of history that usually only happens a few times in a century – we are entering a new era, shaped by a wide range of risks:

- For the first time in more than 100 years, a global pandemic has killed millions of people
- A new war has broken out in the middle of Europe
- Inflation has reached levels unseen in decades
- The effects of global warming are starting to impact our daily lives
- Protectionism and fragmentation of the world seem to be coming back, gradually ending a cycle of globalization.

Of course, not all these risks are new: in our 2019 issue, we were already discussing climate change and pandemic risks. The difference now is how strong the correlations have become between climate change, the shortage of natural resources, inflation, conflicts, demography, obesity, biodiversity loss, deforestation, the emergence of zoonoses, and so on. These interconnections among risks have always existed, but they were less obvious five years ago.

This paper aims to shed light on some of the key trends, explain how they are evolving, and what it means for us in the (re)insurance industry.

Indeed, this world, which is becoming more uncertain than it has ever been over the past 30 years, also craves protection and resilience. (Re)insurers are playing a key role by expanding covers and services, enhancing their offering to push the boundaries of insurability for the common good.

At SCOR Life & Health, we see that while life can be complex and highly uncertain due to the vast array of risk scenarios and outcomes, it is also very exciting, precious and worth protecting, through the prevention, assurance and peace of mind that our products and solutions bring.

This article presents our view of the current situation, with a clear focus on the quantifiable trends we think will impact the (re)insurance industry the most. We hope it will contribute to a fruitful debate about how to shape the future of the life and health insurance ecosystem.

**Thierry Léger**  
Chief Executive Officer of SCOR



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# AUTHOR



**Manuel Plisson**

Head of Experience Analysis, Biometric and Behavioural Modeling



**Răzvan Ionescu**

Head of Biometric Risk Modeling



**Gabriela Buffet**

Associate Medical Director



**Irene Merk**

Senior Actuary (Sustainability and Emerging Risks)



**Denis Charles**

Behavior & Data Analyst

# CONTRIBUTORS



**Pierre Gilloury**

Head of UW Strategy



**Bruno Latourrette**

Head of Financial Solutions



**Antoine Moll**

Head of Medical UW Modeling



# OUR CLIMATE IS CHANGING

## Living in an increasingly complex world faced with increasingly interdependent trends

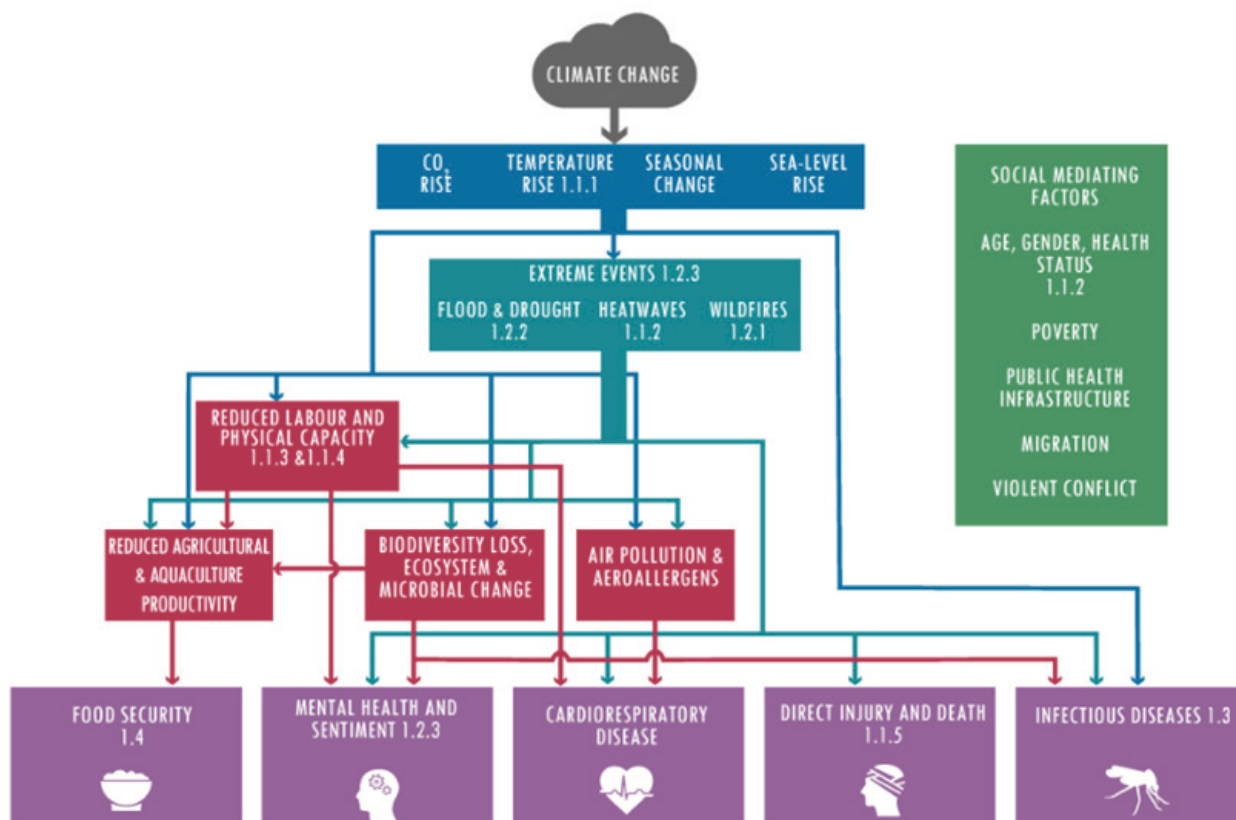
Human-caused global warming is now a clearly established fact, acknowledged by the entire scientific community. We have come a long way since Guy Stewart Callendar, an English engineer, first identified a link between rising global CO<sub>2</sub> emissions and rising global temperatures at the end of the 1930s. And yet, trying to map extensively the full extent of global warming's consequences on our lives and societies remains very difficult today.

Truth be told, the very expression "global warming", powerful but simplistic, doesn't reflect the wide range of impacts it encompasses. And in some ways, it has even sometimes contributed negatively to the fight against greenhouse gas emissions. Who has indeed never questioned the very existence of "global warming" when faced with unseasonably cold temperatures?

Over the past few years, scientists have increasingly replaced "global warming" with "climate change". This can look like a simple change of words to describe the same reality. But it is in fact a sign that we have now fully grasped how complex our situation has become. We are moving from a world where "temperatures will rise by x degrees over the next few decades" to a much more difficult perspective where we know that the impacts of climate change will be everywhere, will feed each other, and will be hard to quantify.

In other words, our perception is moving from that of a homogenous and linear phenomenon ("global warming") to a much more uncertain, heterogenous and non-linear phenomenon ("climate change").

INDICATORS OF CLIMATE CHANGE IMPACTS, EXPOSURES, AND VULNERABILITY



Source : Lancet Countdown



Here are some well-known and less well-known examples of how our world is changing as a result of climate change:

- **Some places on Earth are becoming very difficult to live in**  
It's not only about experiencing more regular heatwaves or losing the sense of seasons in our lives; it's about places that will become very difficult to live in. In some areas of the world, air humidity will drastically increase, making for example a growing number of tropical areas very difficult and dangerous to inhabit, especially for vulnerable people. But higher temperatures may allow human life in some areas where living was difficult before.
- **Extreme weather events are already multiplying**  
Extreme events such as heavy rains, tornadoes, tropical cyclones, floods, and drought are becoming more intense and frequent. Every (re)insurer can see this already happening in their CAT portfolio.
- **Epidemics are becoming more likely**  
The full impact of climate change on natural ecosystems is still difficult to assess. What is almost certain is that it will push some wild species to move into other areas, making it more likely for them to be in contact with other wild or domestic species. This mixing of wild species and domestic species could increase the risk of zoonoses, which are very often the root cause of epidemics. Some mosquitoes might also migrate, bringing with them diseases such as malaria, chikungunya, and others which were previously absent from certain parts of the world. At the same time, the efficiency of the collective reaction to these pandemics should also increase in the coming years.
- **Food safety is becoming a major concern**  
Agriculture is a leading cause of both climate change and damage to natural ecosystems. As one of the most impacted human activities, climate change might make some areas impossible to use for farming (e.g., due to drought) but new areas, previously too cold for farming, might become available for use.
- **Geopolitical tensions are rising**  
Over the course of history, climate-related events have always caused social tensions and conflicts. Climate change is already causing some conflicts in the world such as disputes over access to water resources.
- **Climate is not changing the same way everywhere**  
Ocean currents are changing. A modification in ocean currents might mean that some areas become warmer while others become colder or drier. When we talk about a global warming of 2 degrees, it might be +6 degrees in one area but -1 degree in another one. Because of these interdependencies among air temperature, dryness and ocean currents, the effects of global warming might vary considerably from one region to the other.

More importantly, none of these trends can be considered independently from the other. Let's take agriculture as an example: droughts and other climate events will cause a drop in yields, which will in turn favor geopolitical conflicts and social unrest. This will increase the overall cost of food, which in turn may lead to poor nutrition and the public health challenges associated with it such as obesity. Additionally, more wild land will be deforested to increase production, linked also to overall population growth, which significantly contributes to greenhouse gas emissions (both directly and as a result of farming), all while reducing the planet's capacity to absorb emissions. Deforestation can also contribute to the rise of zoonoses and therefore pandemics.



There are, of course, solutions. A lot of efforts currently underway in many countries across the world are focused on more sustainable energy sources and ways to improve our resilience and overall preparation. But technology cannot be the only answer. We will not solve climate change with increased air conditioning nor droughts with water desalinization. These so-called “mal-adaptations” can help us reduce the effects of climate change, but they are themselves contributing to climate change (among other reasons because of their high energy consumption). This further adds to the complexity of our world, where challenges are multifaceted and solutions are often insufficient.

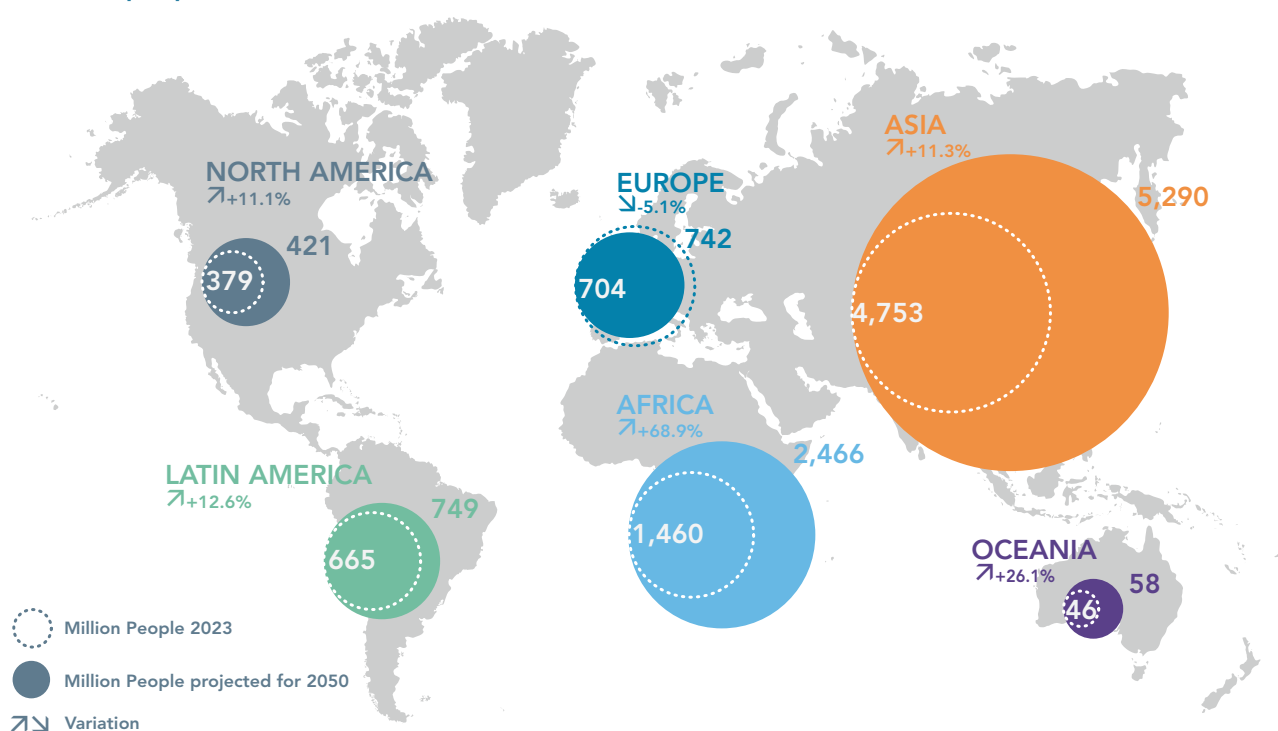
As you will see in the following pages, climate change is almost everywhere in this new edition of the State of Life. Although it clearly influences some risks more than others, it is undoubtedly the one trend with the most far-reaching influence. Moreover, climate change is a global risk that should be managed globally, which has not been the case up to now. When we first released the State of Life in 2019, population growth and increasing life expectancy were some of our key opening highlights. In 2024, it seemed impossible to start a report on our lives with anything other than the elephant in the room: climate change.



# OUR POPULATION HAS BOOMED

Over the last 200 years, the world population has boomed. It grew from one billion in the early 19th century to around eight billion today. One of the key drivers of this phenomenal growth is the improvement of life expectancy, which rose from around age 30 back then to more than 70 today on a worldwide average, even reaching more than 85 for best-in-class countries and accelerating over the period. We have become and continue to become more numerous. We live longer and will continue living to an older age than we used to.

**Global population is expected to continue to grow (driven mostly by Africa and Asia), reaching around 10 billion people in 2050**



Source: World Population Prospects. United Nations. Revision 2022

While the key factors that have allowed the global population to grow are obviously a positive shift, the increased population has become older and more demanding. Given that uncertainty over the future is significantly increasing, especially around social, political, economic, and environmental factors, this creates new risks and expectations.

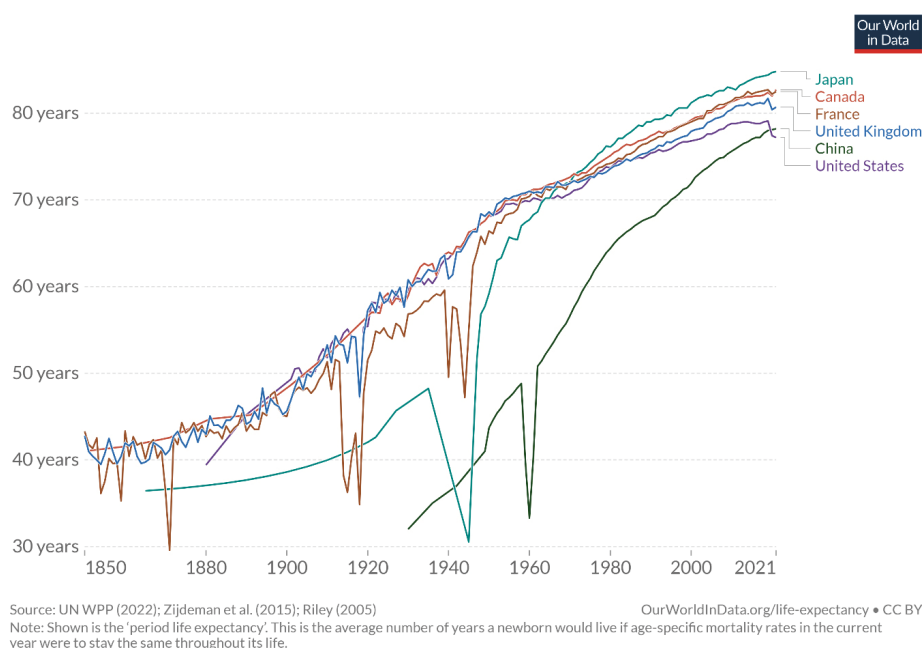


# WE ARE LIVING LONGER WITH A SHIFT IN MORTALITY CAUSES

Progress at large has been the driver for the spectacular growth in our lifespan. Of course, our progress in medicine has always played a major role, with first the development of vaccines in the 19th century, followed by the spread of pasteurization and development of antibiotics in the early and mid-20th century, and then the development of recent and complex cardiovascular risk treatments, which were the first medical answers to age-related diseases.

But medical advances do not explain everything. Agricultural technology has also helped, providing abundant food. The dissemination of good hygiene practices and better conservation of food (due to the widespread use of refrigeration, for instance) has had a significant role to play in the drastic reduction of childhood mortality, malnutrition, and infectious diseases over the years. The development of insurance – both public and private – has contributed massively as well, by allowing diseases to be cured more quickly and effectively, preventing the occurrence of more serious health issues.

## Life expectancy at birth (1850 – 2021)

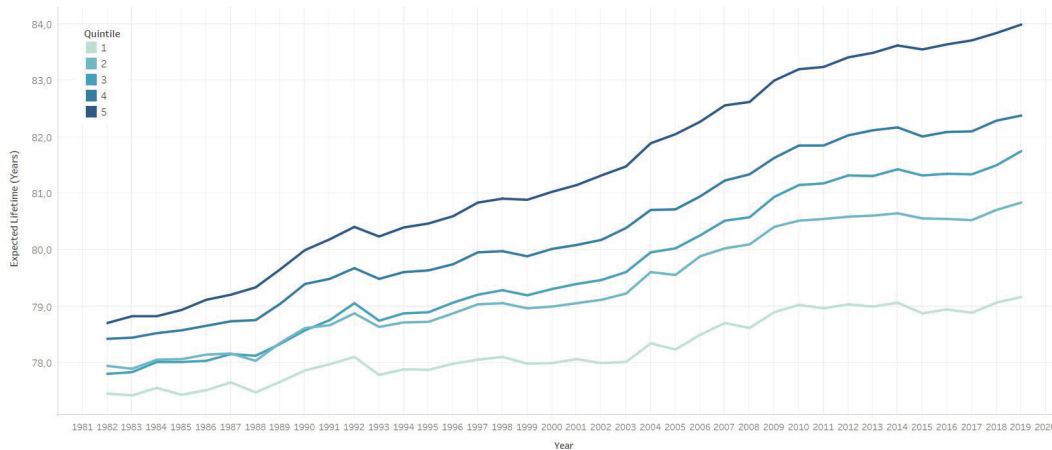


In the last decade, we have observed a slowdown in the pace of life expectancy increase in many rich countries, with a few exceptions such as Japan and South Korea. This slowdown is difficult to fully explain and first came about after the 2008 financial crisis, which put some pressure on public healthcare funding, but we also saw a lot of progress in medicine. Digital and information technology, medical scans, genetic testing capabilities, and mRNA techniques are only a few examples of what our future will look like. The cost/efficiency ratio and the accessibility of these techniques are improving at a phenomenal pace. Another example is the development of Electronic Health Records, which will help manage health, preventively and curatively, in almost real time. This will help us tremendously to understand better and therefore prevent the mortality and morbidity risks we face at all ages, in all parts of the world.



Within certain countries, pockets of people are still medically and financially underserved, leading to material mortality differences between socioeconomic groups. We observe significant and growing gaps in life expectancies between different socioeconomic groups in the last decades.

#### Mortality by socioeconomic category in the United States 1981-2019 (female life expectancy at birth)

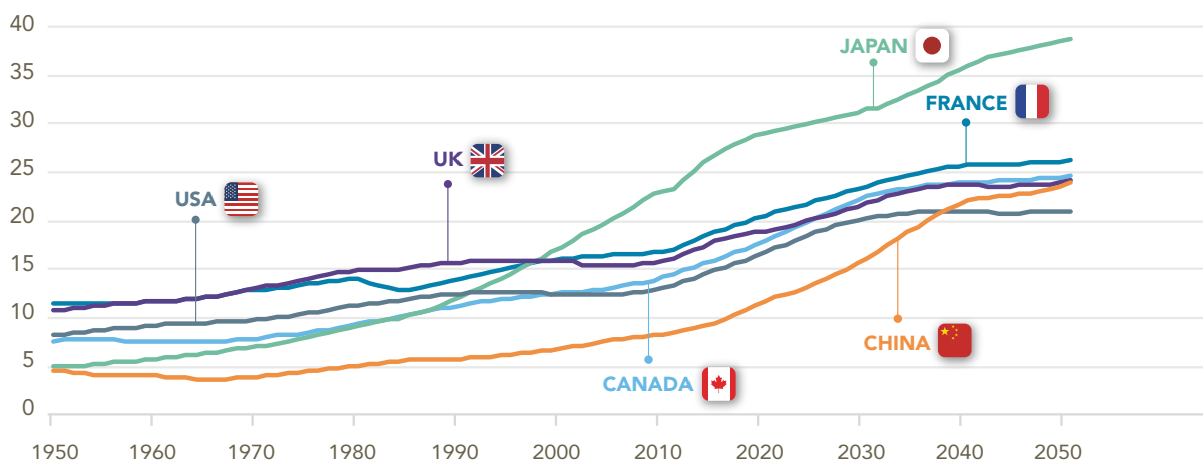


Source Magali Barbieri (2019), SOA, Mortality by Socioeconomic Category in the United States

The shift from a high fertility/high mortality to a low fertility/low mortality society has caused the global population to double within the last 50 years, population at age 60+ to triple, and population at age 80+ to increase fivefold. While this trend is global, it is particularly pronounced in Asia.

#### Historical population data and projections (1950-2050)

% of age 65+ people in total population



Source: OECD Health Statistics 2017, OECD Historical Population Data and Projections Database 2017



# LIVING LONGER COMES WITH CHALLENGES

Entering uncharted territories has always meant facing unknown risks. The same goes for living longer in our world, despite all the positive trends previously highlighted. The challenges of aging, alongside the challenges of our modern world, are plenty, and most of them are new, complex, multifaceted, and need time and effort to be well understood or even just perceived. Those challenges lead to new medical trends, social and health behaviors, evolutions in society, and inevitably new insurance needs, which require adequate knowledge to be addressed.



## MORTALITY CAUSES ARE SHIFTING

Having solved many of the issues that threatened us in the past, nowadays we unsurprisingly have new ones to face. According to a study from *The Lancet* (October 2018), while the three main causes impacting mortality are expected to remain unchanged between now and 2040 (ischemic heart disease, stroke, and lower respiratory infections – which already are mostly age-related), the landscape for the next 10 causes on the list is expected to change drastically, trending much more toward non-communicable diseases (meaning stemming from genetic, environmental, or lifestyle factors). In particular, neuro-degenerative diseases (Alzheimer's), diabetes, and chronic kidney failure will rise steeply. These changes are directly linked on the one hand to our global hygiene and medico-social progress, but on the other to the related consequences for aging societies. Furthermore, Long COVID-19, although not identified as a cause of death per se, will also have a more or less significant impact on mortality and disability and will need to be further monitored over time.

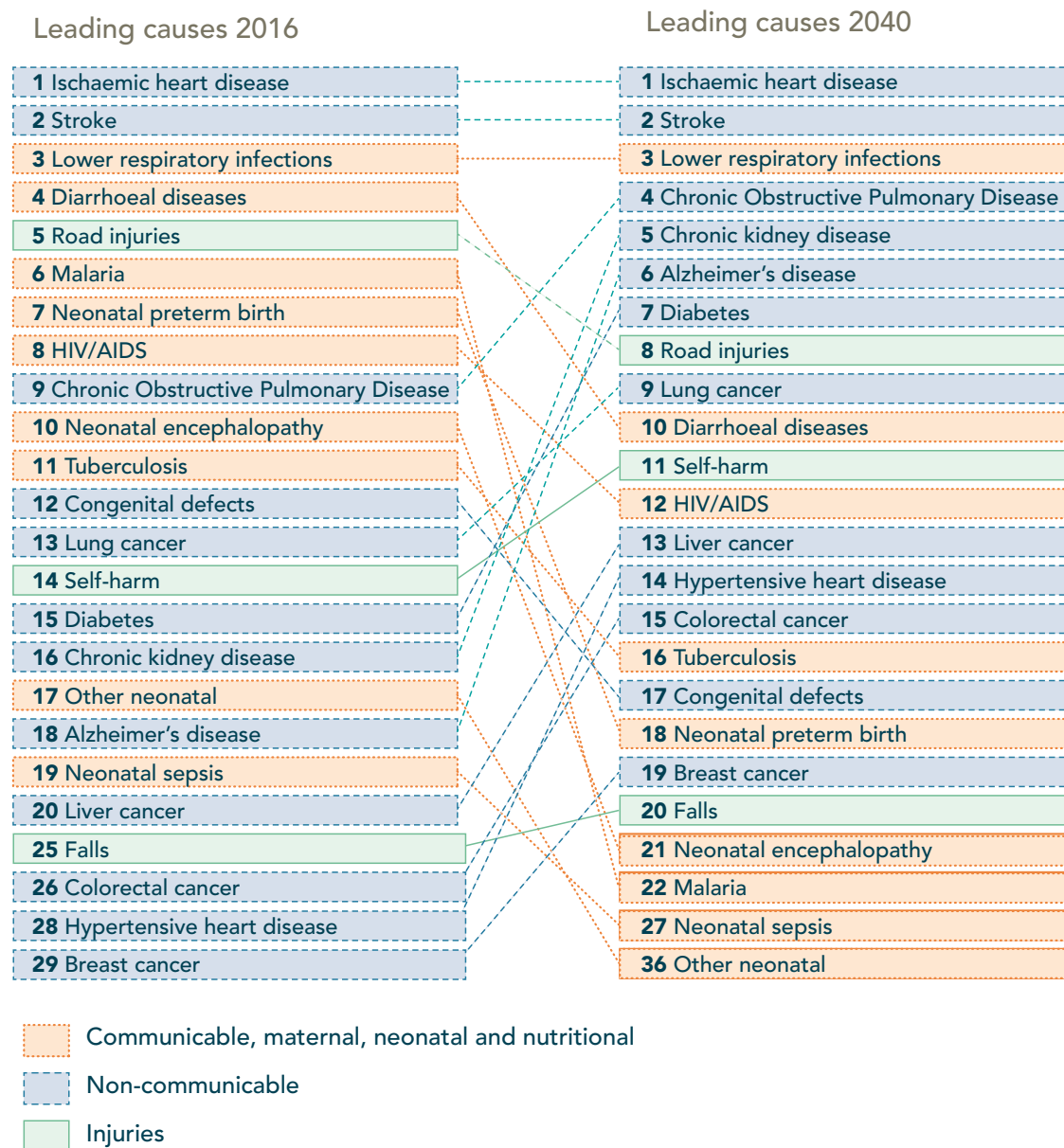
Understanding the possible future scenarios is vital for the insurance industry and the role we want to play in this evolution of human history.

The study published in *The Lancet* is based on data from the Global Burden of Disease, which links risk factors and health outcomes for 79 independent drivers of health. This analysis sheds light on the range of different scenarios that may emerge, depending on how risk factors change and how public health care and social policy evolves.

There are different ways to look at potential scenarios for the future: instead of considering the average length of life (life expectancy), one could think of the number of Years of Life Lost (YLLs). The YLLs would correspond to the remaining life expectancy lost due to a premature death.



## Leading 20 causes of years of life lost (YLLs) globally

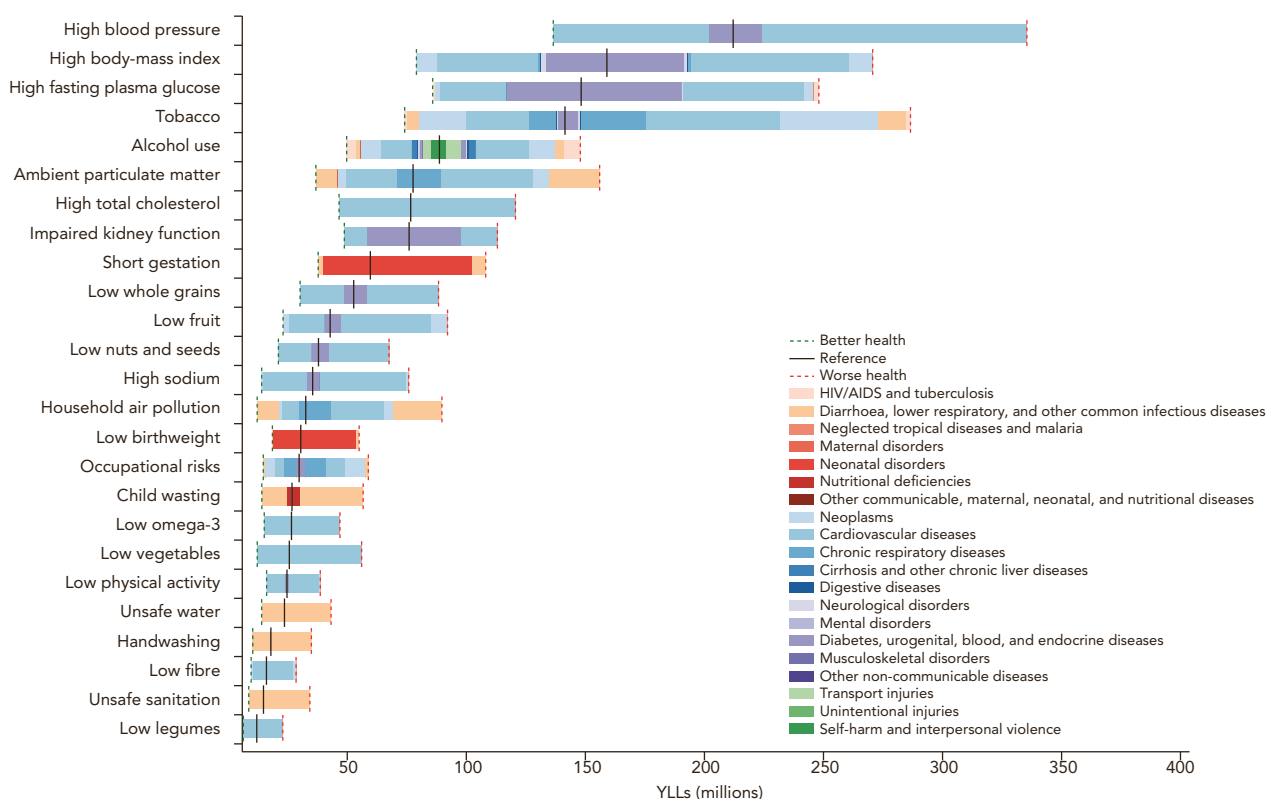


Source: K.J.Foreman, N.Marquez, A.Dolgert et al. "Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016", The Lancet, October 2018

In this study, only four leading risk factors account for more than 100 million years of life lost: three metabolic risk factors (high blood pressure, high BMI, and high fasting plasma glucose) and tobacco. The huge range between the worse and the better health scenarios demonstrates how much can be gained through appropriate prevention policies and health care prioritization.



## Leading factors contributing to global difference in risk-attributable years of life lost (YLLs) by 2040



Source : K.J Foreman, N.Marquez, A.Dolgert et al. Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016, *The Lancet*, October 2018

## How to read this graph?

Let's take the example of high blood pressure. The graph shows that high blood pressure will represent between around 150 million YLLs (better health scenario), 200 million YLLs (reference health scenario), and 350 million YLLs (worst health scenario) in 2040 and the extent to which diabetes (purple) and cardiovascular diseases (light blue) can contribute to a better or worse health scenario.



# MEDICAL ADVANCES WILL FURTHER SHIFT MORTALITY CAUSES



## **Some new treatments currently used for diabetes will decrease cardiovascular mortality**

Treatments that reduce cardiovascular events, prevent coronary disease, stroke and renal disease, and decrease lower limb amputations, have a direct impact on survival. Some of the treatments are also used for obesity with excellent results:

- New treatments for diabetes decrease cardiovascular mortality by improving cardiac and renal protection: sodium-glucose co-transporter type 2 inhibitors (SGLT2i) and GLP1 analogues.
- New treatments for obesity can reduce body weight by 20% (Tirzepatide and Semaglutide).
- New treatments for dyslipidemia decrease LDL cholesterol by 60% (PCSK9 inhibitors) with an injection every two to four weeks. Ongoing clinical studies with a silencing RNA molecule provide similar effects, with only two injections per year.

## **Treatment and diagnosis of cardiovascular diseases will benefit from Artificial Intelligence (AI)**

- AI is gradually opening up a world where exams such as resting electrocardiogram, echocardiography, calcium coronary score, and coronary tomography scan (CT scan) can be more accurately interpreted, supporting doctors in their diagnosis and choice of the most appropriate course of treatment.
- New technologies for coronary artery disease (CAD) are replacing previous tools and also enable doctors to assess the degree of stenosis via CT-FFR (functional flow reserve).
- MRI allows doctors to precisely diagnose heart structure and fibrosis.

## **Many innovations are happening in cancer treatment, promising to further increase survival chances**

The major innovations include:

- DNA, such as gene therapy, cDNA (epigenetic modeling), mRNA (vaccine), and protein interactions including humanized monoclonal antibodies (immunotherapy, targeted therapies, vectorization, etc.), and microbiota.
- Tumor microenvironment including engineered normal cells (CAR-T, NK cells, etc.) to target cancer cells and restore damaged organ capacity (stem cell regeneration).
- Genetic testing of cancer cells is nowadays made available through easy-to-use blood biopsy and other non-invasive methods, and the microenvironment will benefit from novel imaging techniques for individualized therapeutic choices.
- AI may help physicians to make decisions when addressing the complexity of cancer diagnosis, target identification, and therapy.

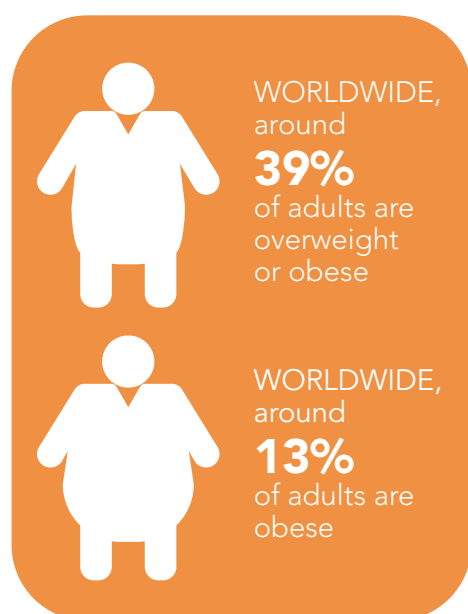
# WE ARE FACING SOME NEGATIVE TRENDS, EMERGING RISKS, AND RELATED LIFESTYLE RISKS

Social and societal factors play a massive role in preventing and caring for age-related diseases. The family unit structure is changing. Higher divorce rates means more people are living on their own. Families are geographically more scattered, and this results in a general tendency to reduce what we call intergenerational informal care for the elderly. In the meantime, more and more workers over 50 years old need to support an older relative. In Europe, one-third of workers face this situation. This paradox of having a fast-growing elderly population while having a family structure that is becoming less and less protective results in a material challenge for our society.

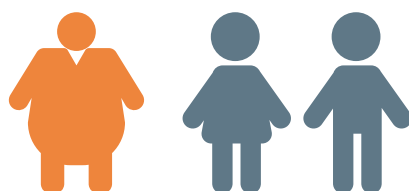
However, in many cases, the elderly want to remain autonomous longer. Therefore, the elderly as a group become more demanding toward their specific service needs, requiring more tailored support such as adapted homecare, facilities, or nursing homes. This is part of the service-specific Silver economy which is still very much underserved and represents an opportunity for the life insurance industry.

**+25%**  
PROJECTED DEPENDENT  
ELDERLY PEOPLE IN FRANCE  
BETWEEN 2017 AND 2030

The technology revolution, the change in working behaviors and approach toward life trajectories (career, family), the drift toward consumerism, growing social inequalities, significant addictions (such as the opioid crisis), and antimicrobial resistance significantly impact our daily lives. And they come with associated risky behaviors that could even lead to the reduction of life expectancy for some segments of the population.



**Poor diet, inactivity leading to sedentary lifestyle, and lack of education have led to a booming "obesity pandemic".** According to WHO, worldwide obesity has tripled since 1975, with almost two billion adults being overweight nowadays (BMI > 25 kg/m<sup>2</sup>), and a third of them being obese (BMI > 30 kg/m<sup>2</sup>). In some Western countries, like the USA, the percentage of the population with severe obesity (BMI > 35 kg/m<sup>2</sup>) will be around 24% in 2030. Sadly, this trend is twice as bad for children. The issue is global and affects both developed and developing countries, calling for widescale societal action. Obesity treatments are very promising, but they are used only by a small part of the population because of the cost.



WORLDWIDE, around **18%** of children aged 5-19 are overweight or obese

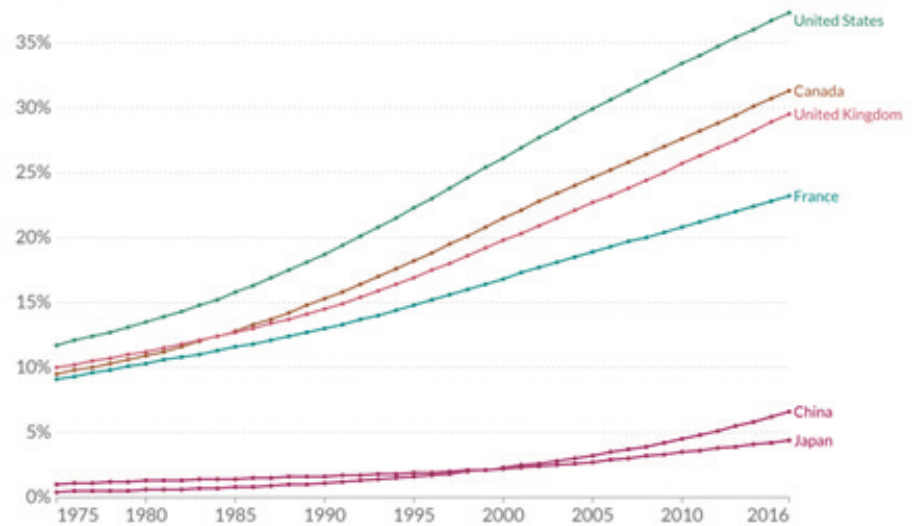
Source: Obesity and overweight, World Health Organization, 2018 (2016 figures)



## Share of adults who are obese, 1975-2016

Obesity is defined as having a body-mass index (BMI) equal to, or greater than, 30. BMI is a person's weight (in kilograms) divided by their height (in meters) squared.

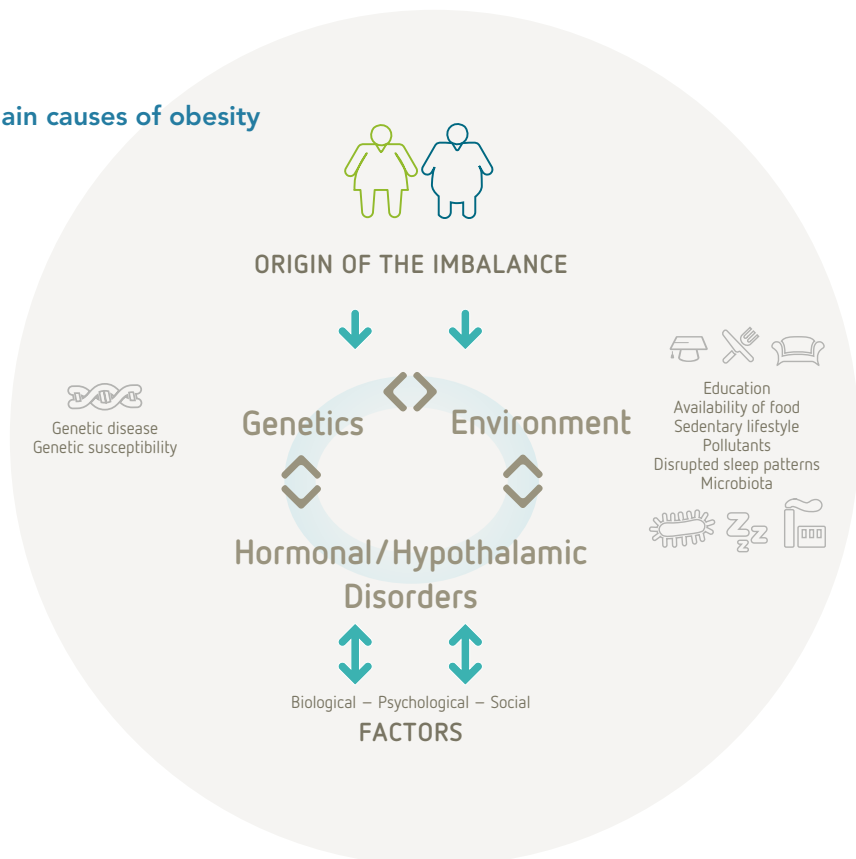
Our World in Data



Source: WHO, Global Health Observatory (2022)

OurWorldInData.org/obesity • CC BY

## Main causes of obesity



Source: Obesity, the health Challenge of the 21st Century, SCOR inFORM, 2018





Don't sleep too little...

Sleeping less than

**7 hours  
= 6%**

Increase in mortality risk

...nor too much

Sleeping more than

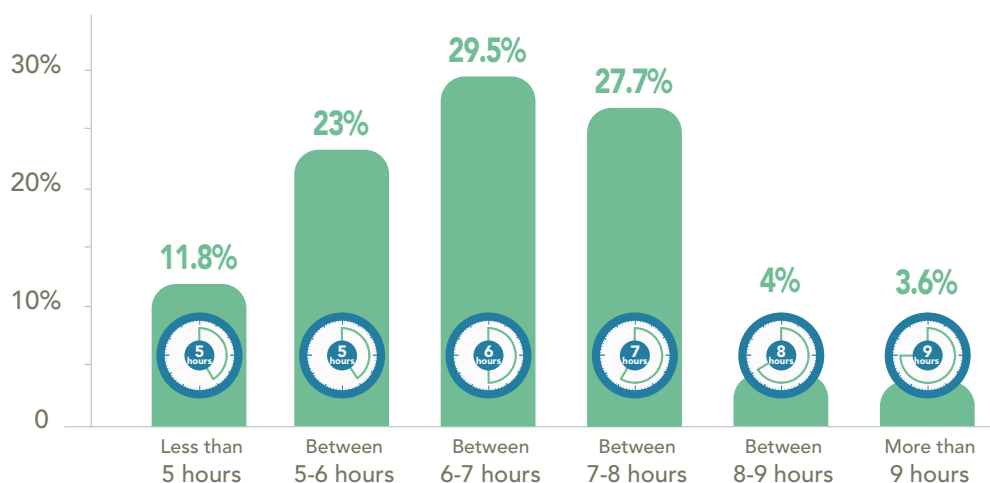
**10 hours  
= about 20%**

Increase in mortality risk

Source: SCOR Digital Solutions Health & Wellness White Paper

Another example of a negative lifestyle trend in our modern society is **sleep disorders or deprivation**. In the US, more than 35% of adults report sleeping less than seven hours a day (versus a recommended seven to nine hours). 38% of US adults have even reported having unintentionally fallen asleep during daytime the month before and 5% while driving. Drowsy driving is responsible for more than 1,500 deaths and 40,000 injuries per year in the US. Beyond higher accident risk, sleep disorders are associated with depression, diabetes, and cardiovascular diseases.

#### More than a third of US adults don't get enough sleep



Percentage of adults by self-reported sleep duration

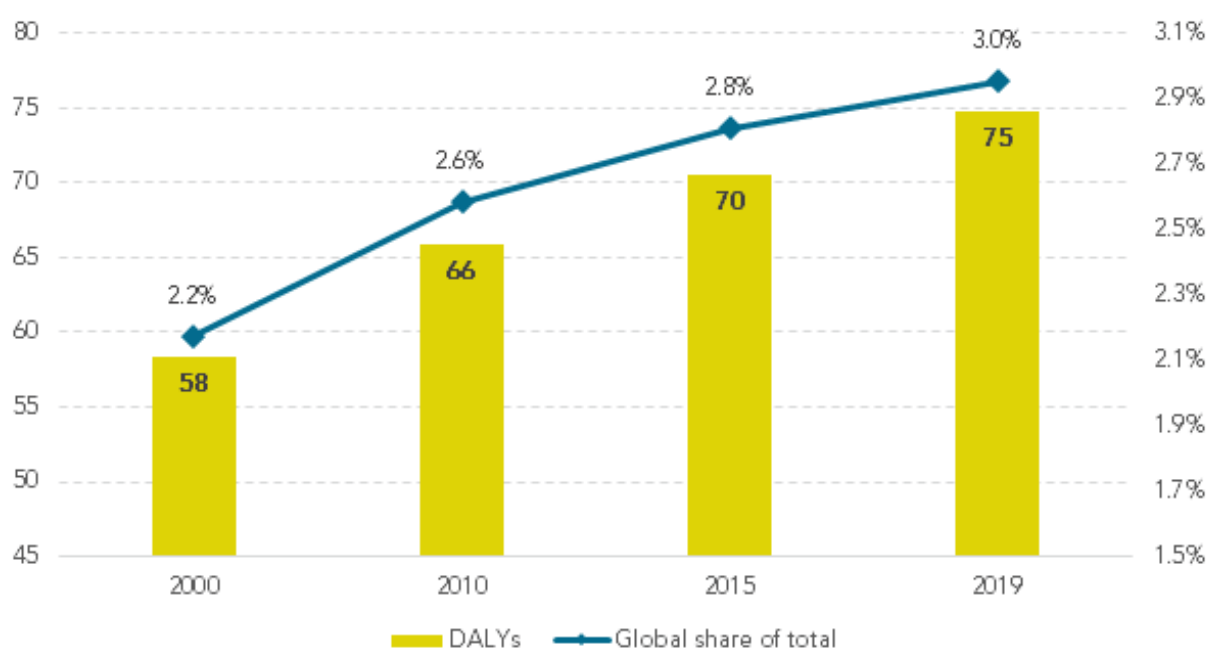
Source : Prevalence of healthy sleep duration among US adults, Center for Disease Control & Prevention (CDC), 2014

# OUR MENTAL HEALTH IS DETERIORATING

Over the years, mental health has become a rising concern for society, further exacerbated by COVID-19

Depressive and anxiety disorders have become a key challenge over the past few years. Depressive disorders were the 13th leading cause of disability-adjusted life-years (DALYs) in 2019, and the trend is worrying – this represents a 61% overall increase in the number of DALYs from 1990 data (+28% since 2000 alone). And we know that COVID-19 has had a very significant impact on mental health around the world, with some studies saying the pandemic increased the prevalence of anxiety disorders by 25%, predominantly among younger populations.

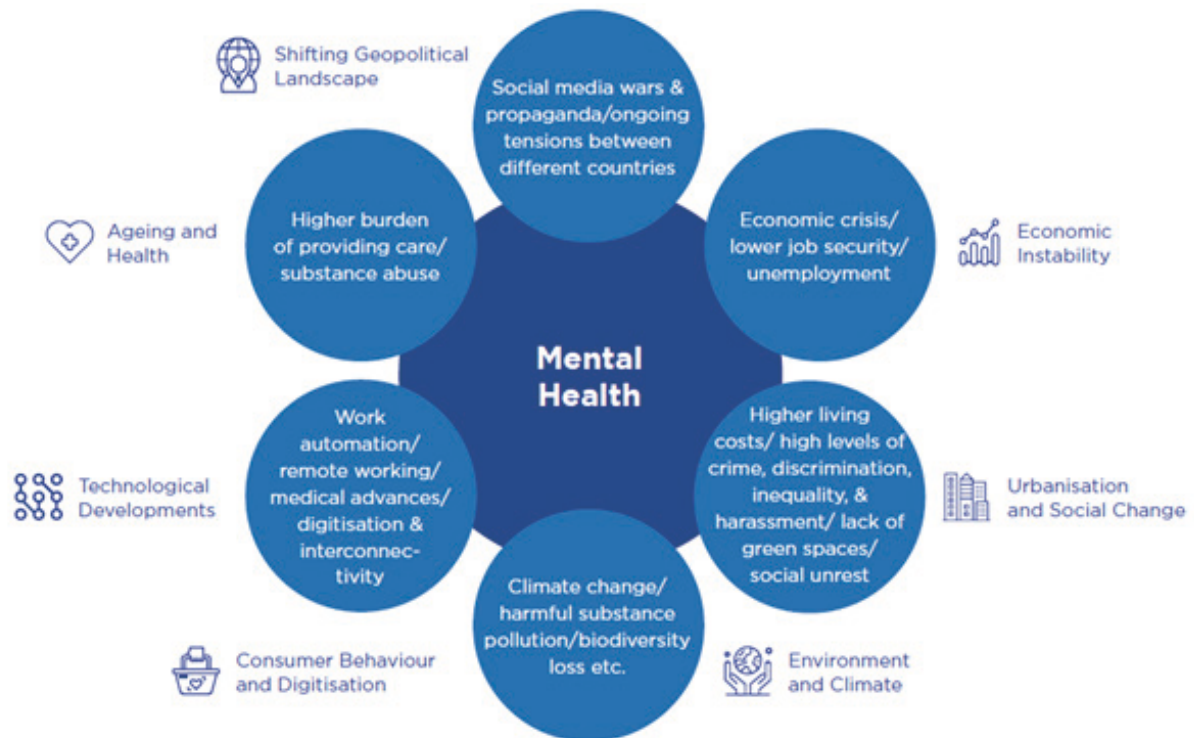
Global Disability-Adjusted Life Year Lost (DALYs) due to anxiety and depressive disorders over time



We are in the midst of a genuine “mental health epidemic” that is impacting a large share of the population (with, for example, as much as 45% of the Australian population expected to develop some kind of mental health disorder during their lifetimes), and with a high likelihood of recurrence (25% recurrence risk at one year, 42% at two years, 60% at five years). Linked to this trend, suicides are a major cause of death in many countries. For example, the Centers for Disease Control and Prevention reported nearly 50,000 deaths due to suicide in 2022 in the US.

Causes of mental health disorders are multifaceted and can vary significantly depending on occupation, age, or even physical health status (with mental and physical health feeding each other). Behaviors can also play a role, as for example substance abuse and excessive use of digital media are associated with higher chances of developing mental health disorders. Furthermore, a wide range of emerging trends and risks could have an impact on mental health, as highlighted in the graph below.

## Examples of mental health interconnectedness with major trends and other emerging risks



Source: Mental Health - the hidden crisis, CRO Forum, December 2021

The consequences of mental health issues vary widely. Mental health is associated with an increased risk of disability and mortality:

- Depressive and anxiety disorders have a high likelihood of recurrence with 60% at five years
- They are a significant cause of death, with an estimated 14.3% of deaths worldwide (~8m people annually) directly or indirectly attributed to mental health disorders (that include issues other than depression and anxiety)

**14.3%**  
**of deaths**

worldwide are  
directly or indirectly  
attributed to mental  
health disorders.

Source: SCOR Digital Solutions Health & Wellness White Paper



# RIISING ANTIMICROBIAL RESISTANCE IS A CONCERN

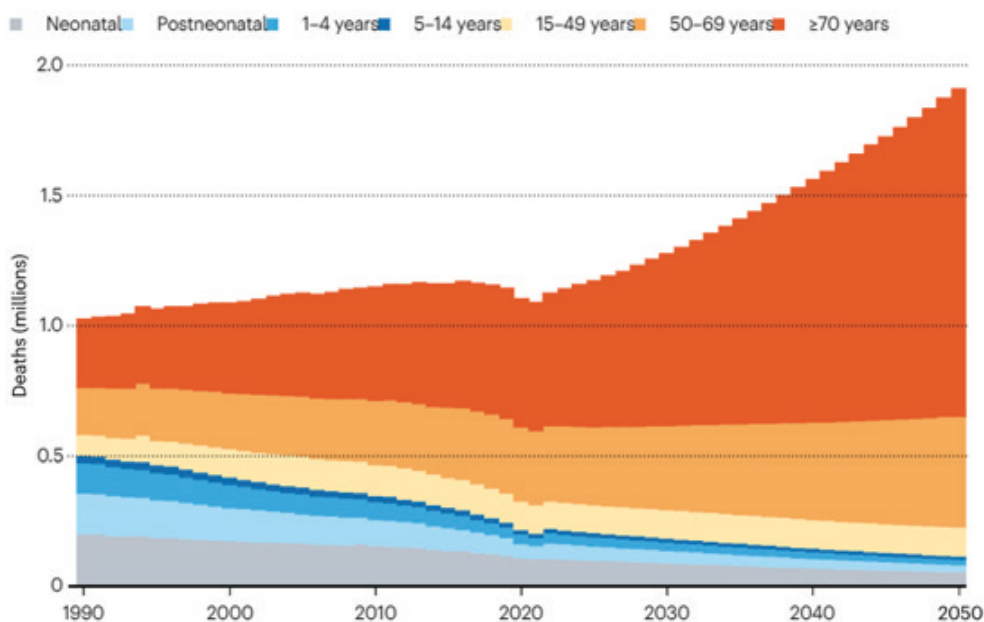
There are various types of microbes that pose a threat to humans and other life-forms. Combatting them with antimicrobial drugs naturally causes an evolutionary arms-race in which the pathogens try to foil our attempts to eradicate them by developing resistance to the mechanisms employed to harm them.

Specifically, bacterial infections have almost lost their relevance as a cause of death in industrialized nations, mainly due to the impact of antibiotics. However, there is an increasing risk of antibiotic resistance, a global health problem that is linked to a multitude of factors. They include the overuse and misuse of antibiotics in humans, livestock, and food production, increased international travel and trade, displaced populations, climate change, poor sanitation and hygiene, as well as the release of unmetabolized antibiotics and their residues into the environment. In parallel, there is a dire lack of development of new families of antibiotics.

We rely on antibiotics not only for curative treatment, but also for preventive treatment, e.g. in conjunction with surgery and chemotherapy. This makes rising resistance a risk of high relevance to public health and with potentially significant impact on future morbidity and mortality.

## RESISTANCE CRISIS

By 2050, antimicrobial resistance could be responsible for 1.91 million deaths per year. Mortality is projected to rise by around 70% among people aged 70 and older, but will continue to fall in young children and babies.



Naghavi, M. et al. Lancet [https://doi.org/10.1016/S0140-6736\(24\)01867-1](https://doi.org/10.1016/S0140-6736(24)01867-1) (2024)

A report published in September 2024 in The Lancet found that between 1990 and 2021, more than 1 million people died from drug-resistant infections each year, and this could increase to 1.9 million by 2050. A further 8.2 million people were predicted to die from illnesses associated with antimicrobial resistance.

On the other hand, around 92 million lives could be saved between 2025 and 2050 with wider access to appropriate antibiotics and better treatment of infections.

# A NEW ERA FOR PANDEMIC RISK

Pandemics have always been on the risk radar of (re)insurers. Since the 1980s, the world has regularly faced the emergence of different epidemics and pandemics such as HIV, dengue, chikungunya and ebola, some of which have had a high death toll. But COVID-19 has brutally reminded us how tangible pandemic risk can be and the extent to which it can impact society.

While epidemics are not rare, several factors lead us to believe there will be even more of them in the future:

- Now, as in the past, global exchanges are one of the leading reasons why viruses spread. Even if some people are talking about deglobalization, we are still living in a very interconnected world – in this context, viruses are transmitted very quickly.
- The impacts of climate change modify the balance of different ecological niches which have been stable for very long periods. Disturbance of this balance promotes the emergence of infectious diseases.
  - Alterations in average and extreme temperatures, humidity, and vegetation quality, as well as large-scale animal and human movements, will be inexorably accompanied by changes in the distribution patterns of vectors and the diseases transmitted by them.
  - Deforestation and new land use for agriculture might push animals to leave their wild environment. Wild species might come into contact with new wild species or with farm animals – the traditional contamination route for zoonoses.
  - The geographic distribution of mosquitos is expected to expand dramatically, as previously inhospitable habitats become favorable. Mosquitos will bring some tropical diseases with them, posing significant public health challenges.
  - Extreme weather events create favorable conditions for the spread of diseases, especially when they also lead to population displacements.

That said, we have entered a new era when it comes to dealing with pandemics. Compared to before COVID-19, awareness about pandemic risk has increased, leading to better preparation and anticipation. So although pandemic risk in this new era is higher, it is probably also more manageable:

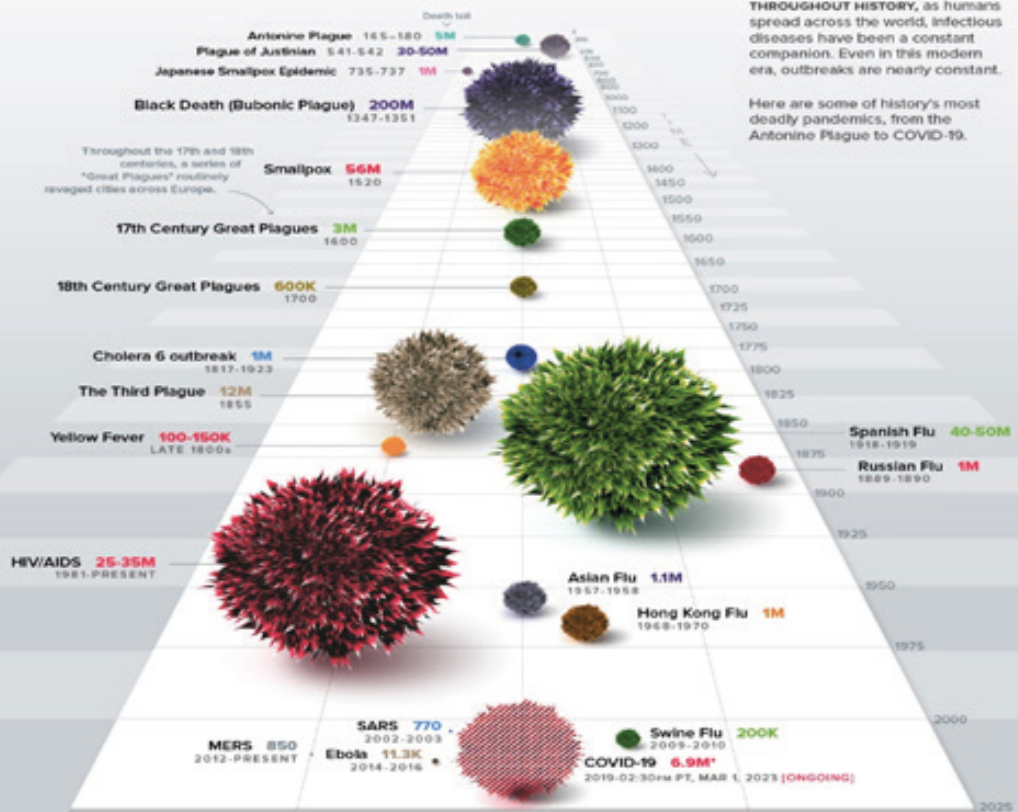
- COVID-19 has shown us how much medical science has progressed and how fast efficient vaccines can be rolled out. mRNA techniques are the real breakthrough of this pandemic. Some current research is assessing the possibility of extending the use of mRNA vaccines to other infectious diseases like flu, or employing new vaccine technologies (other than mRNA) against epidemic respiratory viruses such as respiratory syncytial virus.
- There are also some global initiatives like “One Health” that could play a role in the detection, control, and prevention of new pandemics.



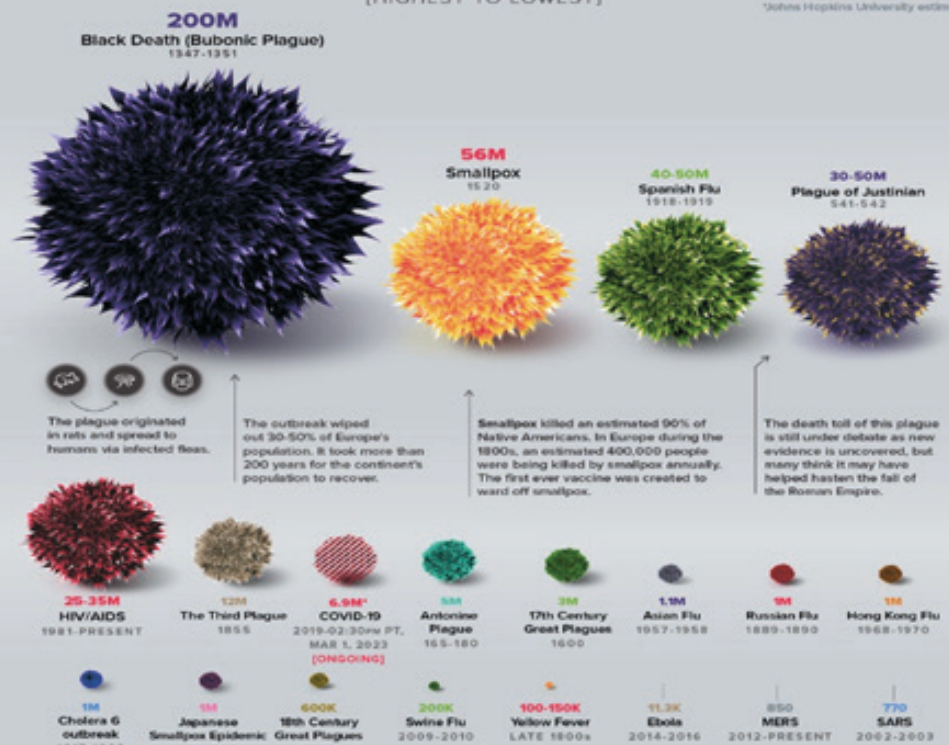


# HISTORY OF PANDEMICS

PAN-DEM-IC (of a disease) prevalent over a whole country or the world.



## DEATH TOLL [HIGHEST TO LOWEST]



WHO officially declared COVID-19 a pandemic on Mar 11, 2020. It is hard to calculate and forecast the impact of COVID-19 because the disease is new to medicine, and data is still coming in. \*Johns Hopkins University estimates

\*Johns Hopkins University estimates  
Sources: CDC, WHO, BBC, Wikipedia, Historical records, Encyclopædia Britannica, Johns Hopkins University



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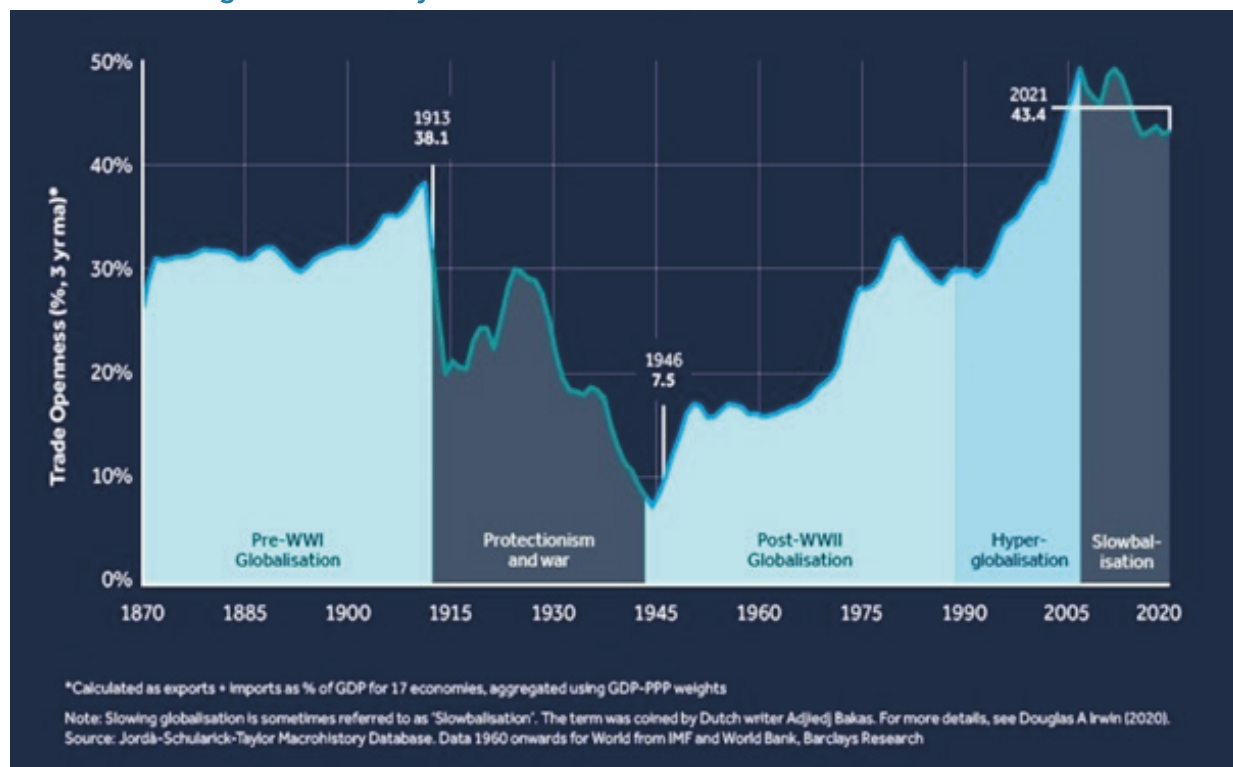
# WE LIVE IN A CONTEXT OF GEOPOLITICAL, ECONOMIC, TECHNOLOGICAL AND ENVIRONMENTAL UNCERTAINTY

A new world order is taking shape. Brexit, the Ukraine war, and US-China competition have all fueled fragmentation and the emergence of geopolitical blocks. The world is moving from a desire for cooperation, inherited mostly from “Western” institutions created after the Second World War such as the United Nations, to increasing confrontation. With the demise of the USSR in the 1990s and the exceptional economic growth of China, many believed free market and liberal democracy would prevail.

But this has proven to be wrong, as “not everyone thinks alike”. The outbreak of the war in Ukraine in 2022, which many world powers did not condemn, acted as a reminder of this fact. The recent conflict in Gaza has also shown the world's fragmentation.

On the economic front, the “slowbalization” following the 2008 financial crisis may be turning into deglobalization.

## Globalization through recent history

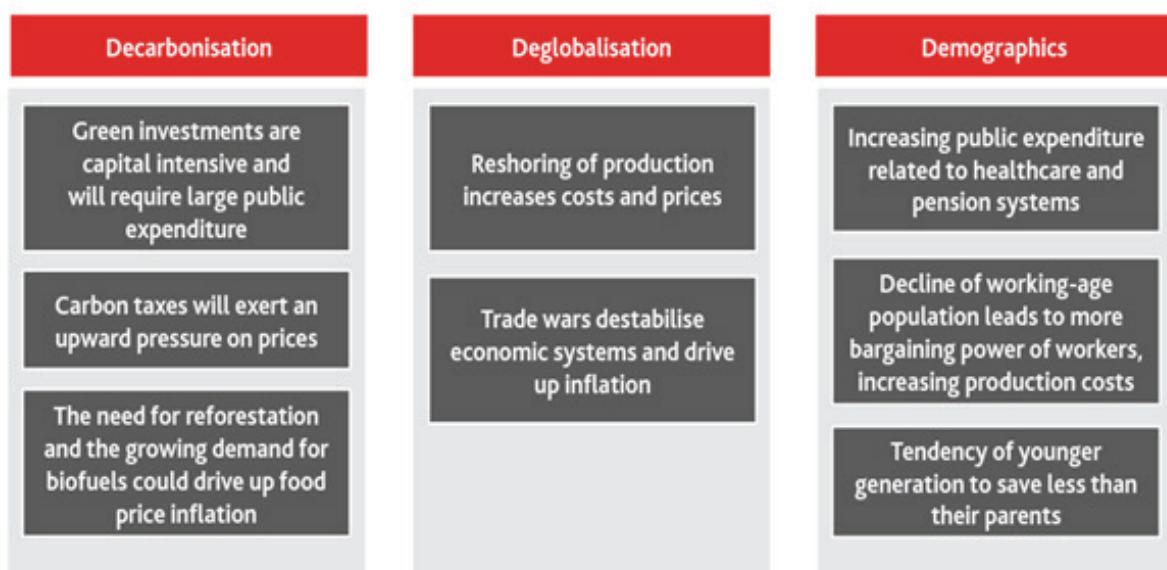


Recent disruptions to global value chains such as the COVID-19 pandemic, the war in Ukraine, growing ideological differences, and the green transition have prompted governments and corporations to reconsider external dependencies. They are looking closer to home and to trusted partners for more resilient growth models. The associated sanctions led all global companies, as many of them lost assets in Russia, to build plans in case of a potential war in Taiwan. The recent example in March 2023 with the demise of Credit Suisse, where the Swiss government had to pass a law over a weekend to preserve the interests of shareholders at the expense of the subordinated bondholders, is particularly telling about the growing economic uncertainties around the world.



The other main change is the return of inflation. Deglobalization, the necessary decarbonization of our economies, and the aging population in most of the world putting strain on wages of the working population might lead to prolonged higher inflation and interest rates than we have enjoyed over the past 40 years.

**'3D' Inflation and key forces at work. A summary of key factors shaping the structural medium- to longer-term inflation outlook**



Source: The Geneva Association

Technology is moving incredibly fast and becoming fully embedded in our societies and even in our own selves. It is a world starting to get ready for artificial intelligence and robotics which, in itself, creates anxiety around the sustainability of many of our jobs in the near future. What is striking here is the accelerating pace of these revolutions.

The first industrial revolution took 100 years. The next one, linked to electrical and combustion power, 50 years; the digital revolution only 30 years. Achieving one million users took Facebook four years, TikTok nine months, and ChatGPT two months.

Our world is changing faster and faster, creating more frequent disruptions, leading to strains and tensions in our societies and on our environment. We must cope with and adapt to these changes. Some bring incredible opportunities, like the DeepMind AlphaFold, which predicts protein structures and boosts medical research by providing a better understanding of the molecular mechanisms of a protein. In so doing, the innovation offers insights into how the protein works and how its modulation might lead to a disease or a therapy.

# INEQUALITIES ARE AN INCREASING CHALLENGE, DESPITE SOME GOOD NEWS

Year after year, the world's middle class keeps growing. As per the World Data Lab, the world's consumer class (defined as those spending over USD 12 a day in purchase power parity) will grow by an additional 112 million new people in 2024, and the trend is expected to continue in the coming decades. This is the result of the significant economic growth experienced in emerging economies over the years, especially India and China, which will represent close to 60% of the new consumer class members in 2024.



Source: World Data Lab, 2024

Unfortunately, while our economies are getting richer overall, inequalities are also on the rise. Again, as per the World Data Lab's 2024 outlook, wealthier consumers (defined as those who spend more than USD 80 a day) will represent 18% of the consumer class members in 2024, but 54% of the total expenditure.

As a result, there are more and more calls to address the growing inequalities within countries. These inequalities might partly fuel the rise of populist movements, which might lead to measures such as wealth or income taxation that were more common pre-1980s, at least in Western countries.

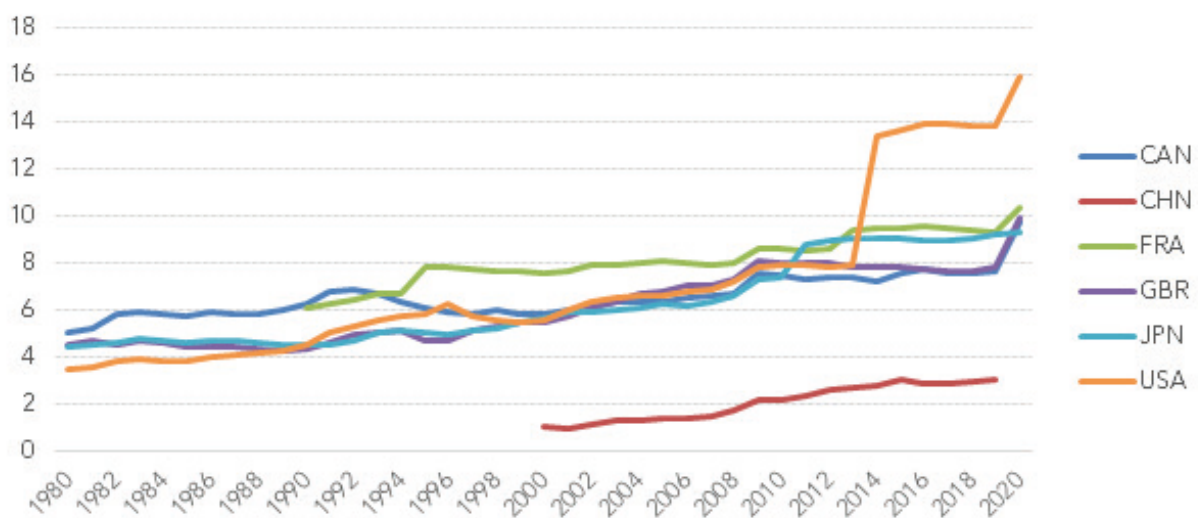
# COSTS OF SOCIAL AND HEALTH SERVICES ARE INCREASINGLY DIFFICULT FOR COUNTRIES TO BALANCE

Aging societies and risky behaviors combined with medical and economic progress naturally result in higher costs of care for people, whether social or health care. Physical inactivity is placing a significant economic burden on society, with an impact on five major noncommunicable diseases and all-cause mortality that is estimated to cost the global economy more than USD 64.5 billion through healthcare expenditure and productivity losses. The healthcare cost related to sleep disorders in the US was USD 94.9 billion in 2018. One in five deaths around the world is attributable to poor diet<sup>2</sup>. OECD health data shows that the share of government and compulsory health expenditures within GDP has been progressing over the past four decades at an annual average rate of around 1.5% for most rich countries, with the US being an exception due to "Obamacare". For a country like China, the pace has been much higher: around 5% over the past 20 years.

In Europe, for example, social protection is structured across three pillars: the first is government contribution through social security, the second is group protection through employers, and the third is individual protection. The last two are usually offered by mutual companies, provident funds, or private insurers. But there is also an obvious fourth pillar: the remaining out-of-pocket contribution from individuals. Very schematically, the first two pillars are based on a budget rationale: their level of contribution is directly linked to available resources in the public and private sectors combined; in other words, GDP. This means that the combination of government protection and private sector group schemes has, to a fairly large extent, been unable to meet the cost of health expenditure growth. Therefore, the third and out-of-pocket pillars, which are financed by individuals only, increase at an even higher pace, widening the so-called protection gap.

The direct consequence is a discrete but visible disengagement of governments over the past decade in developed economies, in order to maintain their socio-medical expenses as a stable share of GDP (de-reimbursement of certain medicines and medical acts, de-indexation or even reduction of pension schemes, limited investment into public Long-Term Care programs while populations are obviously aging). However, the increasing trend of socio-medical expenses remains steady and very much linked to all the macro trends previously highlighted.

## Government/private compulsory expenditure as % of GDP<sup>3</sup>



Source: OECD (2019), Health spending (indicator)

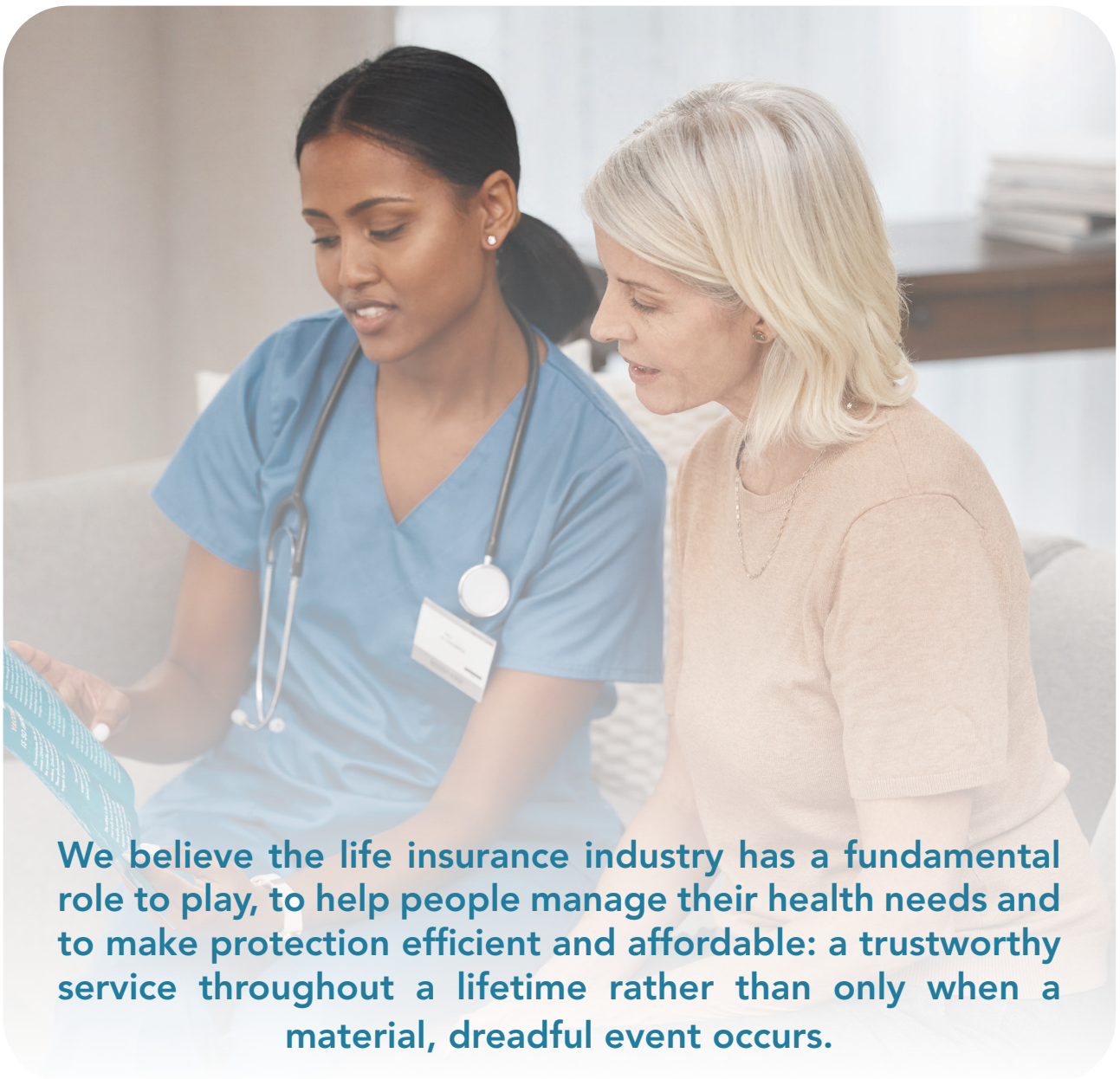
<sup>2</sup> Source: SCOR Digital Solutions Health & Wellness White Paper

<sup>3</sup> Sudden increase in 2014 in the US is linked to the implementation of the Patient Protection and Affordable Care Act ("Obamacare")

- The spike in 2020 is linked to COVID-19 and is expected to be temporary.



In addition, COVID-19 had a negative impact on healthcare supply with numerous healthcare providers either retiring early (mostly physicians) or moving to other jobs due to the strains caused by the pandemic. Access to care for a great number of people in the immediate coming years will likely be more difficult than before the pandemic.



**We believe the life insurance industry has a fundamental role to play, to help people manage their health needs and to make protection efficient and affordable: a trustworthy service throughout a lifetime rather than only when a material, dreadful event occurs.**



## **WHAT DOES THIS MEAN FOR US AS HUMAN BEINGS?**

This section is inspired by the Global Consumer Surveys published each year by SCOR Digital Solutions



As mentioned throughout this article, there is a growing trend toward caring for one's own life and health. Not only are people becoming more aware of their needs, we also see clear trends about how people want to care for themselves or be taken care of through new services. Our tech world, the way it evolves, changes the way customers understand and perceive their own needs and how they want providers such as life insurers to deliver services in a purposeful way.

## WE ARE BECOMING MORE HEALTH-CONSCIOUS

Many studies across the world, including our SCOR Digital Solutions Global Consumer Survey (GCS), point out that people's **health consciousness is improving**. The reasons are multiple: access to medical information has been made very easy through the Internet, there are new trends in diseases such as diabetes, obesity and Alzheimer's, the cost of care is rising, health market players are increasingly focusing on prevention, and there is a growing perception that living healthier is more important and meaningful than living longer. Of course, the COVID-19 pandemic has raised awareness of how important being healthy is in terms of recovering from the disease. Half of GCS respondents invested in their health during the pandemic, whether through purchasing sports equipment at home or using a health app.

**Data indicates that diet and exercise are the prominent areas of concern or focus**, showing that people tend to take a preventive approach in order to be or feel in good health. According to the World Health Organization, while 39% of the global population is actually overweight or obese, 49% believe they are. And half of them are really trying to lose weight through diet, exercise, or medical support. Among people trying to lose weight, 75% are considering changing their diet (lower fat, lower sugar, less processed food), and 72% are doing physical exercise. While there are regional discrepancies, (North America and Europe lead the pack for healthy diet and Asia-Pacific for exercise), the trend is bold enough to be valid across the board.

Healthy food and physical exercise have become paramount. People are now thinking about their own bodies and the way they fuel them with food as the best way to prevent health issues in the future. We are what we eat. It seems that the proverb "prevention is better than cure" has become a real way of life, and this is good news for the industry. Insurers should support this evolution by developing new products, including prevention-type products. SCOR's 2023 study on insurance demand revealed individuals have a strong interest in receiving a free medical check-up annually for the duration of their insurance contract. This is particularly true among the younger generations.



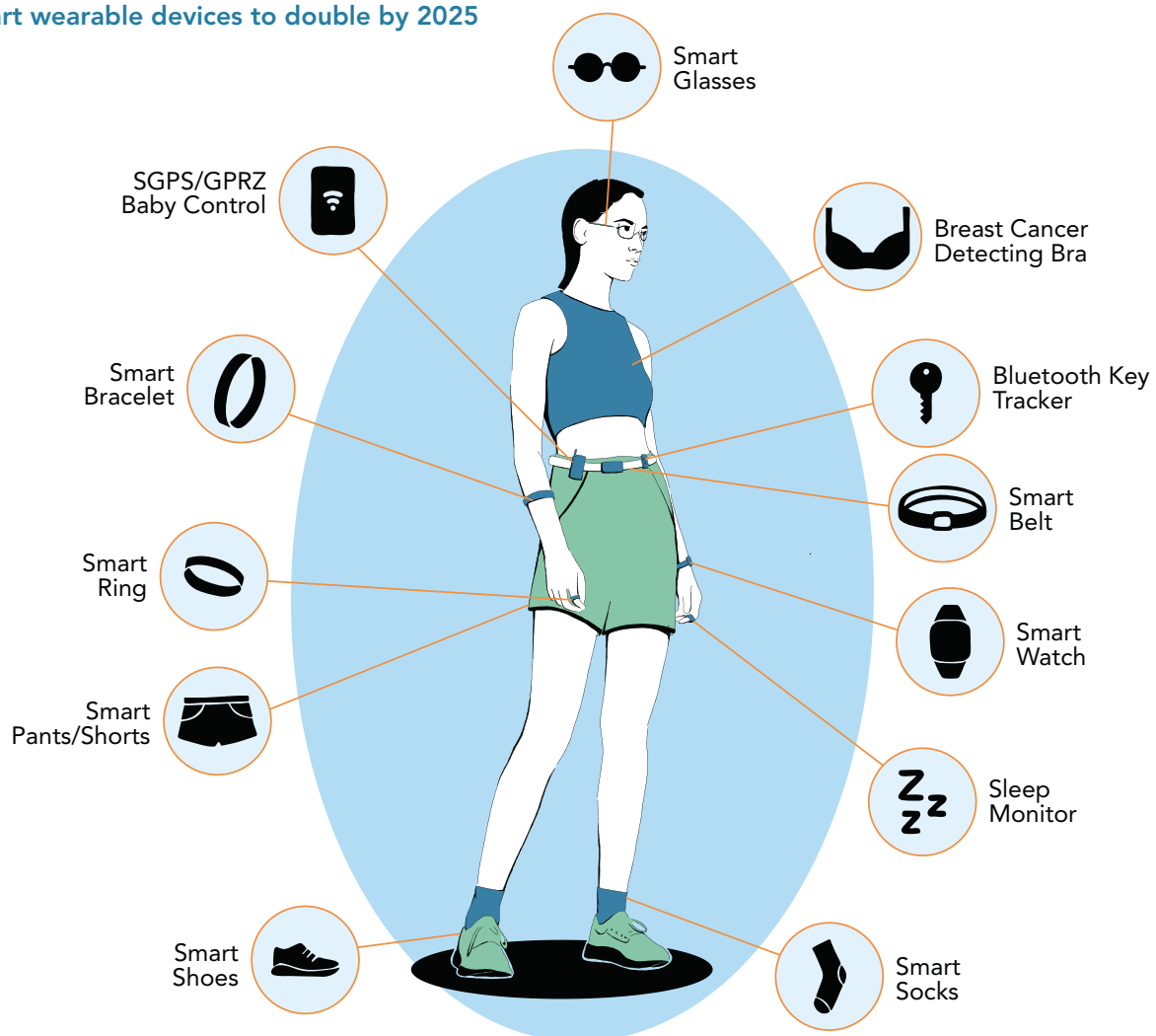
# WE ARE BECOMING MORE TECH-SAVVY

The global smart wearables market is expected to grow at a compound annual growth rate of more than 10% in the coming years and to become a USD 32 billion market in 2026, according to *Businesswire*. The smart wearables market consists of sales of smart wearable devices and related services for tracking vital pieces of data related to the health and fitness of the human body. The main devices are smartwatches, fitness and wellness devices, smart clothing, and smart rings, which are becoming more and more popular.

Asia-Pacific was the largest region in the smart wearables market in 2021, with North America being second. The increasing demand for wireless sports and fitness devices is projected to drive the smart wearables market. There is rapid growth among cyclists, runners, gym-goers, swimmers, and athletes in terms of tracking calories burned, hourly activity, stationary time, and activity time.

There is also a growing concern about the lack of control over the data generated by owners through their smart wearable devices, which constrains the growth of the market.

## Smart wearable devices to double by 2025





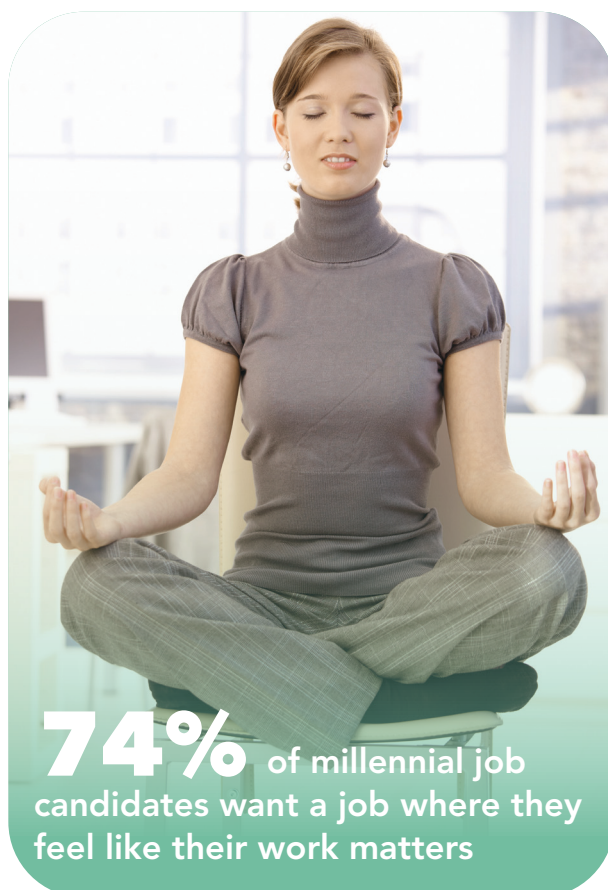
# WE ARE BECOMING MORE DEMANDING

As people become more aware of their own power through data, they also become (and rightly so) more demanding in terms of getting value in exchange. Individuals agree to have access to a personalized prevention app that offers personalized information and recommendations only if a discount on premium is expected. This is highlighted as the most attractive reward by GCS respondents, followed by free insurance coverage for family and friends and retail discounts, merchant perks, or gift cards.

Services are one component of the perceived value added. They must be sharply adjusted to customer needs, and it is expected that providers will increasingly use tools such as artificial intelligence to determine these, rather than simply asking customers. Fair and risk-adjusted pricing is the other source of value given back to the customer. Both are positively linked, as soon as services are oriented toward risk prevention: "I encourage you to live a healthier lifestyle, and I reward you for it with sharply risk-adjusted products." Bridging that gap demands a concerted, collaborative response, both automated and emotionally intelligent, to create seamless online-to-offline experiences and compelling customer journeys.

# WE ARE BECOMING MORE PURPOSEFUL

Our relationship with our working life is also evolving. Borders between home and work are becoming blurred, and work must become more purposeful to create genuine engagement. According to a 2017 LinkedIn survey, 74% of millennial job candidates want a job where they feel like their work matters. At the same time, work is expected to adapt to an individual's lifestyle and family rather than the other way around. Work-life balance is becoming a key concern when it comes to choosing a job. In the same line of thought, Corporate Social Responsibility and environmental consciousness are becoming key criteria when it comes to choosing a job, a business partner, or any type of service provider. There is a growing aspiration that our commitment as individuals must make sense, according to our own values and purpose and for the good of our loved ones and community. The COVID-19 pandemic has increased those expectations, the "Great Resignation" (Anthony Klotz) being the perfect example. Low wages and lack of opportunities for advancement, combined with an increase in the demand for remote working (highly used during the pandemic), induced a large trend of voluntary resignations by individuals who want to find jobs that best match their expectations.



# NEW GENERATION, NEW LIFESTYLES?

In a context where paths of life (family, careers) are becoming far less linear, our world is becoming more complex, multi-layered and interconnected.

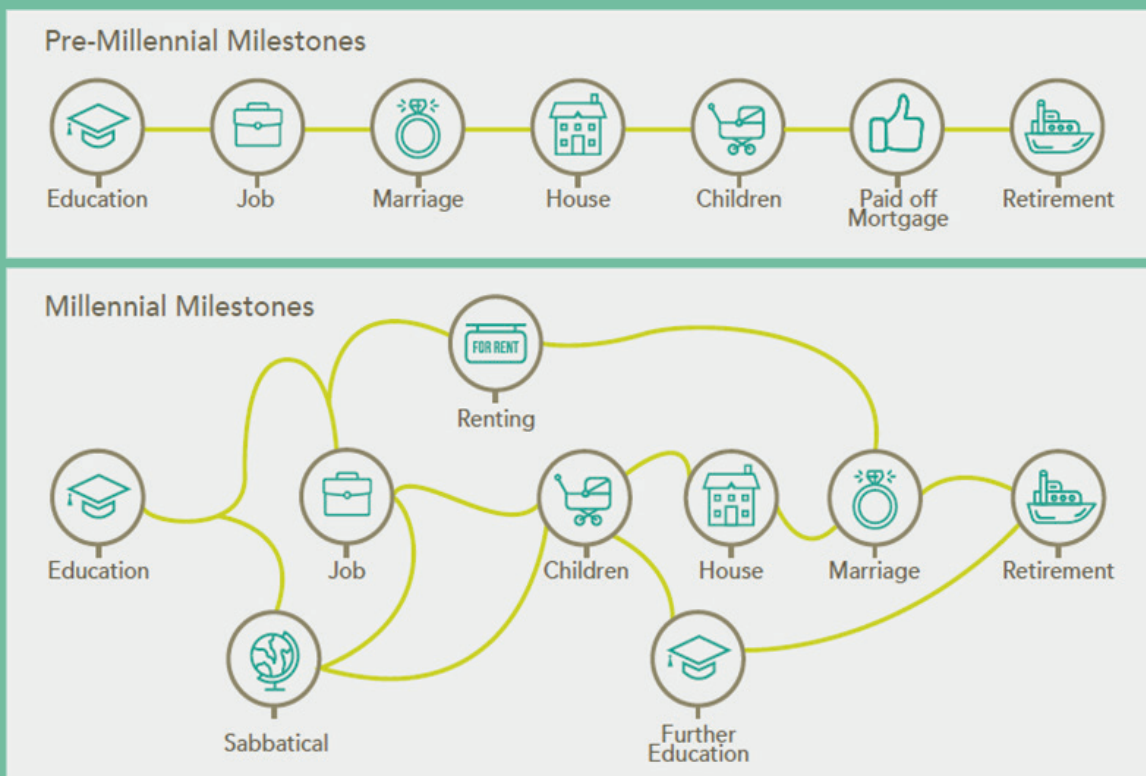
The life journeys of millennials can be very different than those of their parents. We see a move from a linear life journey to a far more complex one. Millennials are getting married and having children later than previous generations, with some not getting married at all. From 1970 to 2012, the US marriage rate dropped by 60% — from 74 annual marriages for every 1,000 unmarried women down to 31.

Younger generations are much less afraid than their elders to change jobs or work independently. While Baby Boomers are driven more by loyalty and work for the same company for long periods of time, almost half of new college graduates in the US currently remain with their first employer for less than two years.

Millennials are slower to own homes than previous generations, having been priced out of the market. Instead of mortgages, millennials are more likely to spend their paychecks on a sabbatical year to fully dedicate themselves to a project or travel, or on immediate experiences such as Ubers, coffee, gadgets, clothes, live entertainment and sports, etc.

Social networks keep us hyperconnected in real time with friends and family. With the support of technology, social bonding can take place remotely even where there is little physical distance. The younger we are, the more important this kind of remote bonding is.

## Life journey evolutions



Source: Global Consumer Survey 2017, SCOR Digital Solutions





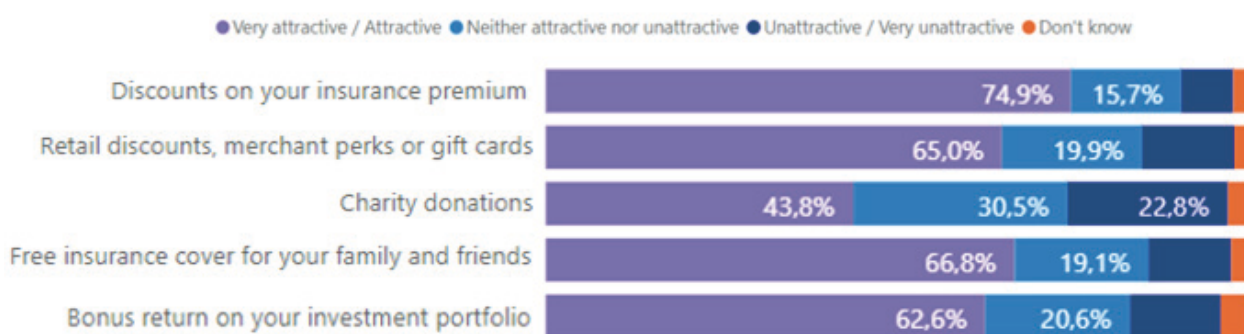
**WHAT DOES THIS MEAN FOR US  
AS (RE)INSURERS?**

# CONSUMER NEEDS AND MOTIVATIONS ARE EVOLVING

Unsurprisingly, consumer needs are evolving as life journeys become more complex and less linear. Millennials grew up under far more diversified family models than their antecedents and now define themselves through their work and education rather than family ambitions. Nowadays, there are as many life course patterns as people in this world, and the diversity of needs - and choice - has become endless. **In a context where new generations “use” rather than “buy,” and “rent” rather than “own”, motivations for buying life insurance are gradually shifting from a desire for security to a fear of insecurity.**

While previous generations would invest in life insurance at moments of life such as the purchase of a property, marriage or children, millennials’ motivations to purchase are driven by fear of redundancy, debt, or illness. We also see that millennials, at least in developed markets and at least for now, prioritize happiness over traditional life goals. They are, as yet, less inclined to buy insurance and need to be appealed to with benefits which they enjoy and can help them live well. In the prevention space, insurers might help customers take care of their health, through diet advice (a healthy diet induces a 11-12% risk reduction of cardiovascular disease and diabetes) and physical activity engagement programs.<sup>4</sup>

How appealing are the following as potential rewards from your insurer for sharing such data?



Source: SCOR Digital Solutions, Global Consumer Survey 2023

GCS 2023

In addition, we see consumers changing how they research, seek advice, and implement their insurance purchase decisions. Whilst many, if not most, of the purchases of life insurance are initiated by some form of human contact – whether from an insurance agent, a financial adviser, or bank staff either face to face or through a phone call – the journey to the ultimate purchase decision is changing. Increasingly, consumers want to be able to research their proposed purchase online.

Consumers are in thrall to the simplicity of digital. In today’s world, the overall customer journey must become as seamless as possible. Consumers want to interact on their devices – all of them – and are ready to exchange personal data for a personal digital experience.

The emergence of 5G technology will allow any type of applications to be used from mobile phones, with some experts predicting the speed of 5G to be up to 1,000 times faster than 4G. This is likely to be a significant revolution in the relatively near future, with the potential to completely change the way we interact with wireless devices.

<sup>4</sup> Source: ReMark's (SCOR Digital Solutions) Health & Wellness White Paper



# BUT BECOMING FULLY DIGITAL DOESN'T NECESSARILY MEAN VOID OF HUMAN INTERACTION

According to SCOR Digital Solutions 2023 GCS report, 80.8% of participants used online tools during their recent insurance purchases, mostly to get a quote or recommendation online or to upload personal details or documents. Although consumers are increasingly looking for information online when thinking of which Life insurance product to buy (at least to supplement information received from other sources), most purchases of life insurance continue to involve some form of human contact, mainly through insurance or independent advisers.

Surprisingly, the rise of automated advice could make human interactions even more important once these technologies have been implemented at advised channels. They will allow advisers to be more price-competitive and spend more time on more complex cases. In other words, online and offline are expected to merge but without sacrificing human interactions, which will be more focused on what really matters.

The younger we are, the more likely we are to go fully digital, first and foremost to avoid intermediary costs but without foregoing service quality and comprehensiveness. Moreover, millennials demonstrate a much greater degree of trust in automated digital solutions than older generations.



# THE POWER OF DATA AND AI

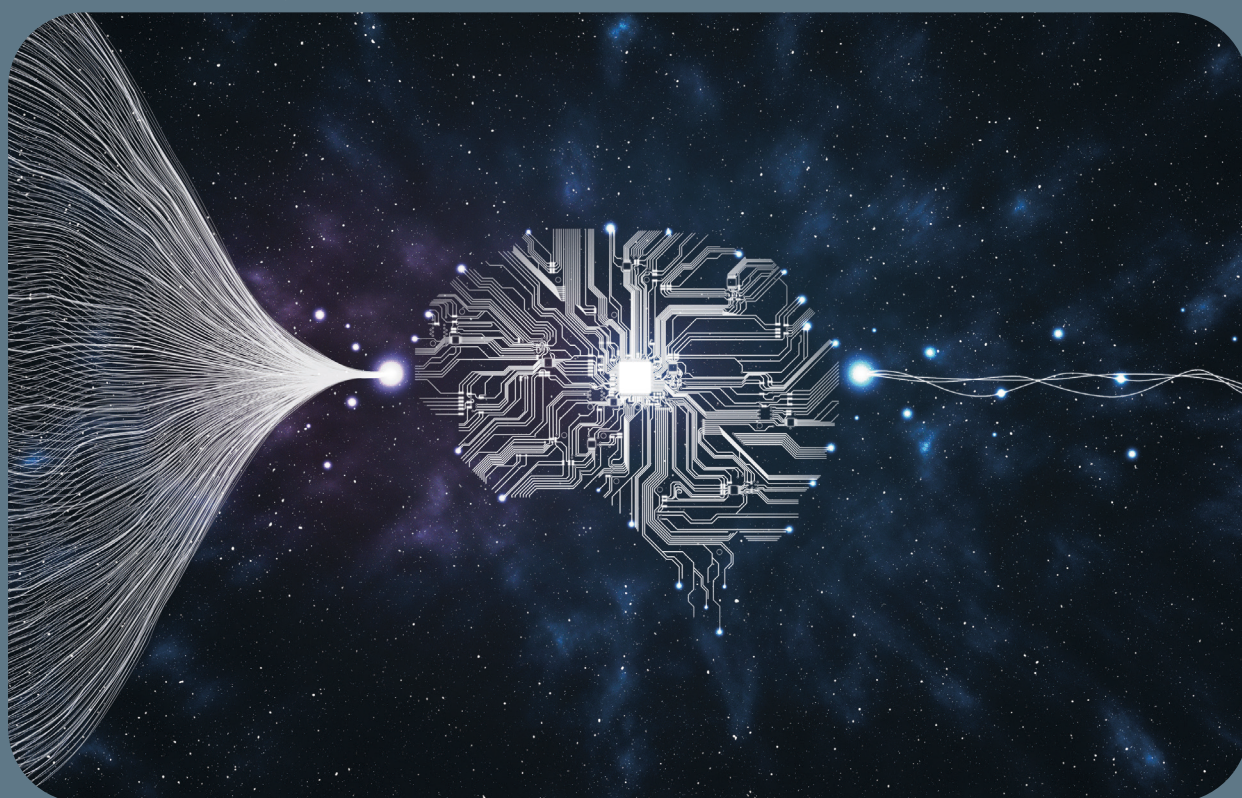
Ten to 15 years ago, companies started to compile massive amounts of digital data; this pushed data analytics forward, and consumer targeting has become mostly data-driven. The availability of data and the power of technology have led to entirely new and highly data-driven services and insights.

Tech players that emerged with the digitalization and the power of data have completely changed the paradigm by entirely re-designing the consumer experience. Driven by extremely insightful data feeds, consumers are given a service tailored to their needs and expectations. With this new consumer experience as a benchmark, consumer expectations have significantly increased and expanded to most needs in life.

As SCOR Digital Solutions Global Consumer Survey points out, people are year-on-year more willing (from 48% in 2020 to 65% in 2022) to share their data in exchange for value-added services (as part of a loyalty program, for instance) such as health and wellness advisory, financial support, or healthy lifestyle benefits. The potential for comfort gains are strongest in relation to privacy concerns when the channel for answering health questions switches from a face-to-face adviser meeting to online self-completion.

This data trend is being accelerated by the deployment of technologies such as 5G (which is 1,000 times faster than the previous 4G standard) and AI. While AI has been around for a while now, we witnessed at year-end 2022 a real disruption with the release of ChatGPT and the democratization of Large Language Models, which should transform the way insurers interact with end consumers and, at the same time, their own operations.

There is tremendous opportunity for the life insurance industry to gather and use data and technologies in order to better interact with insureds, while developing products promoting risk prevention and creating risk-adjusted offers.



# INSURERS ARE RESPONDING BY EXPANDING THEIR SERVICES AND ENHANCING THEIR OFFERINGS

Particularly in mature markets, insurers have started to add layers of services such as tele-medicine to Group schemes (largely used in the US) and wellness offerings (coaching, early wearable propositions). For example, John Hancock has decided that all its life insurance policies will come with Vitality (interactive life insurance that tracks activity through wearables) while United Healthcare offers its customers the chance to pick up a free Apple Watch if they walk 10,000 steps a day.

Early movers in the life insurance space are already showing a willingness to be bold in pursuit of competitive advantage, ceasing traditional life insurance underwriting in favor of interactive policies that track fitness and health data through wearables and smartphones. Customers are offered rewards for healthy behaviors such as exercising or buying healthy food and have the option of paying less on premiums by achieving certain exercise and fitness targets.

# PERSISTING INFLATION MIGHT MEAN A SHIFT TO MORE SAVINGS PRODUCTS

The impact of inflation and higher interest rates will likely shift demand toward products with a savings component and could allow products with features like return of premium to be more competitive.

## The impact of inflation and rising interest rates on insurance demand and supply

	Demand		Supply	
	▲ Positive	▼ Negative	▲ Positive	▼ Negative
<b>Non-life</b>	<ul style="list-style-type: none"> <li>Heightened risk perception and awareness</li> <li>Portfolio shifts from financial to real assets</li> <li>Need for higher policy limits</li> </ul>	<ul style="list-style-type: none"> <li>Price increases</li> <li>Slower economic growth</li> <li>Lower inflation-adjusted income levels</li> </ul>		<ul style="list-style-type: none"> <li>Mark-to-market losses on fixed-income securities</li> <li>Potential political and regulatory constraints on repricing</li> <li>Reduced risk appetite for longer-tail business</li> </ul>
<b>Life</b>	<ul style="list-style-type: none"> <li>Higher yields on savings-type policies</li> <li>Higher demand for inflation-protected products</li> <li>Need for higher policy limits of protection products</li> </ul>	<ul style="list-style-type: none"> <li>Less attractive long-term savings</li> <li>Less attractive fixed-benefits products</li> <li>Increasing competition from banks and fund managers</li> <li>Price increases</li> <li>Slower economic growth</li> <li>Lower inflation-adjusted income levels</li> </ul>	<ul style="list-style-type: none"> <li>Expanded range of viable products due to higher interest rates</li> </ul>	<ul style="list-style-type: none"> <li>Mark-to-market losses on fixed-income securities</li> <li>Potential political and regulatory constraints on repricing</li> </ul>

Source: The Geneva Association



# CONCLUSION

When comparing the State of our Lives today to the situation back in 2019, so many things have changed. In this ever-expanding risk universe, we can only assume that we are entering a new era, where:

- New risks are emerging
- Old risks are reappearing
- Interconnections among these risks are getting more numerous and complex.

To face this new era of risks and uncertainties, reinsurers, as trusted partners, are more needed now than ever before.

We have a role to play in helping societies face these risks, whether it is through new solutions promoting new behaviors and increased health prevention or through the financial protection we provide thanks to the power of diversification.

Using these two pillars of prevention and mutualization, we, as reinsurers, will contribute to making our lives more resilient.

## **Manuel PLISSON**

Head of Experience Analysis, Biometric and Behavioural Modeling







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