

# Bringing how we live to mortality.

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Can lifestyle risk factors provide a more accurate – or alternative – risk assessment to create a better experience for your customers?

Today we know there is a wealth of personal data surrounding us in places we might never have expected. We carry it on our wrists. We enter it in our phones. We measure steps and hours of sleep and record our diets on a regular basis.

All of this has been fueled by consumers' growing interest in their personal health and wellbeing and the increasing availability of wearable devices, apps and programs. The game changer in all of this for the insurance industry is the increasing credibility of the data.

But the challenge remains how to use the data to improve the end-to-end insurance value chain. There is the potential to do this at each touch point.

This is a big step from where we are today, where a big part of what we do relies on the clinical data – like body mass, blood pressure and lipids, together with age and smoking status – to estimate someone's mortality risk.

At Swiss Re, we believe the use of Lifestyle data provides a new way to assess mortality risk and improves the end consumer experience.

Over the next ten minutes I will introduce what we have termed 'The Big Six' which we consider to be the opportunity to use alternative data to better engage customers, holistically risk profile to price, and create bespoke customer experiences.

## Why now?

### Changing expectations

People want to be recognized as holistic individuals and have **personalised experiences**.



### Consumer awareness

Consumers are **more aware** of their health and are tracking it. We can and should reward this.



### Growth of apps & wearables

By 2022, the number of wearable devices is expected to be more than **1 billion**.



### Proliferation of credible data

There's not just more data, it's **credible** – which gives insurers confidence to use it in assessing risk.



### Advancements in medical research

New biomarkers enable a more **precise** reflection of individual risk factors..



The landscape of risk assessment is changing (e.g. new data sources, risk scores and advanced algorithms)

Customers want to be recognized as dynamic individuals, not clinical statistics

Customers want to build a relationship with their insurer, not execute a transaction.

Clients look to us for validation, support and solutions

The number of connected wearable devices worldwide has more than doubled in the space of three years, increasing from 325 million in 2016 to 722 million in 2019. The number of devices is forecast to reach more than one billion by 2022. (statista)

# Science tells us the relative impact of 6 lifestyle factors



## Physical Activity

- Leisure time physical activity
- Daily Steps



## Nutrition

- Healthy eating awareness
- Intake of ultra-processed food & sugared beverages



## Mental Wellbeing

- Self reported stress
- ...



## Substance Use

- Smoking and previous smokers
- Alcohol



## Sleep

- Hours slept per night
- ...



## Environmental

- Second hand smoking
- ...



## Swiss Re expands research into six key areas

Things so fundamental and far-ranging as what we eat and how much we sleep to where we live? While not so easily quantified, these habits could be just as important for their combined effects on the quality and length of your life.

As science evolves, so does our understanding of how these various factors affect health and longevity. At Swiss Re we wanted to build on this research through an underwriting lens.

By combining the power of new data and causality models with our history of underwriting expertise, we expected to harness a better understanding of what these risk factors mean for the insurance industry.

Can lifestyle risk factors provide a more accurate - or alternative - risk assessment that insurers can use to create a better experience for your customers? We think so.

Today's increasingly hectic and full lifestyles have spawned many effects that erode physiological aspects of our health. These so-called lifestyle factors include sleep, exercise, nutrition, mental wellbeing, the environment and substance use. There are, of course, many more, but we've chosen these six to focus on.

## **Physical Activity**

Studies have shown a 30-35% reduction in all-cause mortality when comparing active and inactive groups. Physical activity might be collected via a wearable device or questionnaire. Asses physical activity according to leisure time physical activity or step-count.

## **Mental Wellbeing**

Mental health is a complex and multi-dimensional with well-documented adverse impacts in diagnosed mental illness. Non-diagnosed mental health is studied through the dimension of stress that is self-reported. Perceived stress contributes to excess mortality confirmed even in the absence of a formal diagnosis

## **Sleep**

Sleep is fundamental driver for behaviors and frequently representative of our mental state and wellness. The increased mortality associated with “short sleep” duration appears to be correlated with biologic reasons. In contrast, increased mortality associated with “long sleep” appears to be related to co-morbidities.

## **Nutrition**

Diet is the key to obesity and metabolic disease, which are the key drivers of cardiovascular disease and cancer. However epidemiological evidence has not been gathered. Reliance on self-disclosure may not be as reliable and has been taken into consideration

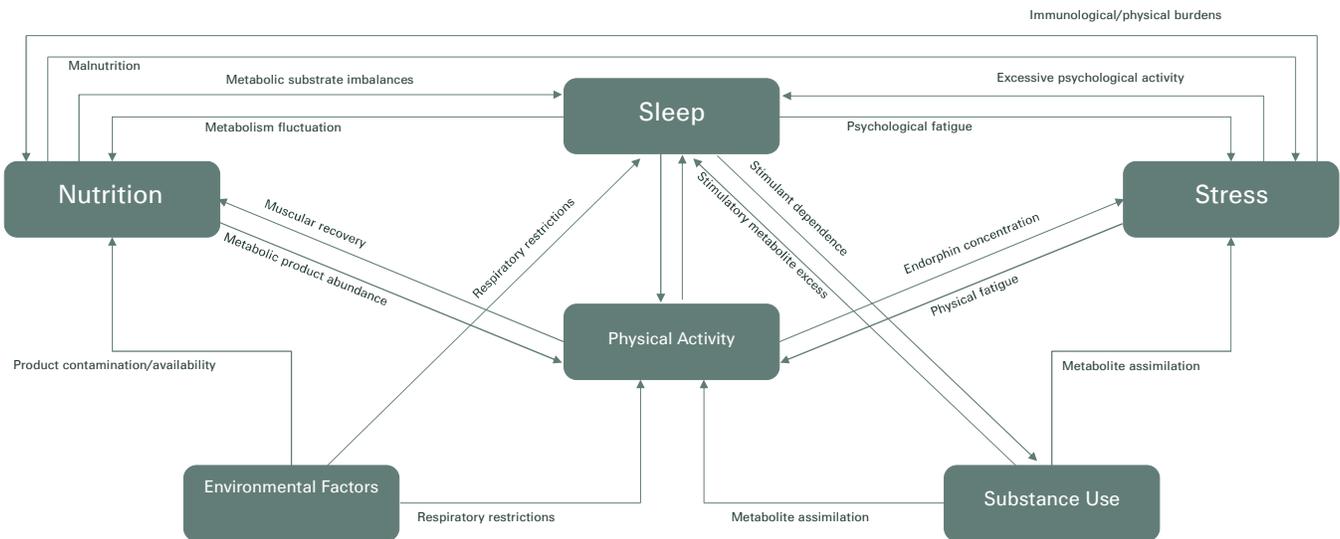
## **Substance Use**

Substance use is significant due to both its direct impact as well as behavioral impact. Current focus, has explicitly been on alcohol and tobacco use due to business impact and availability of research.

## **Environmental**

Because of the availability of related studies the EBR has focused on secondhand smoke exposure. Levels of exposure are related to age, living conditions, social economic background, and local regulation. Some studies, show an increase of 20-30% mortality for individuals exposed to secondhand smoke with an increase as exposure is prolonged.

# The Synergy of Lifestyle Factors.



Analysing the risks associated with one's lifestyle is complex and deeply interconnected. For example, how much you sleep affects your physical activity, which, in turn, influences your nutrition and food choices. Understanding the causative effects of these risk factors and how they can, or perhaps cannot, be applied to our underwriting process is daunting but necessary.

The term "risk" in traditional underwriting is based on long-term mortality studies and claims and portfolio experience. However, when analysing lifestyle risks there is a much greater focus on the human element and its many vagaries.

There are a wide range of interconnected factors - each of which influence numerous complex biological and molecular pathways. Everything is intertwined and connects to the clinical factors we traditionally use like BMI and blood pressure.

Sounds complex - how do we do it?

The key to our success was in the innovative approach to our research.

Most of today's published research focuses on longitudinal studies about a single factor. These are unfortunately littered with confounders, adjustment assumptions, and often dubious conclusions. Biomolecular pathway mapping hasn't traditionally been applied to insurance risk research. As these are the fundamental biological

processes that underpin health outcomes, we think it paramount to include them when evaluating someone's health risk.

By assessing biological causation pathways we were able to more accurately reflect the risk associated with individual lifestyle factors, but also have better insight into the interaction these factors have with each other and with traditional clinical risk markers.

# Case Study: Bringing Lifestyle Factors to Life.

Reward and recognize customers with a healthy lifestyle



## Challenge

- Our client rolled out a health and wellness app that allowed steps, sleep and resting heart rate data to be collected.
- The objective of the app was to engage customers and allowing them to earn rewards (e.g. vouchers) if they log in on a regular basis
- The client keen to see if Swiss Re could support them with a dynamic pricing solution based on the current H&W app.



## Our solution

Swiss Re developed the Big Six Lifestyle Calculator, an evidence-based approach to determining the impact of lifestyle on risk assessment. We were able to leverage the philosophy to provide risk rate discounts to the client for customers with a healthy lifestyle for both Mortality and CI risks.

Swiss Re was also able to redefine the granularity of the discount structure to allow more accurate reflection of lifestyle on the individual level



## Benefits



Customers could see their health age based on their activity level and this provides context to the data they are sharing with insurers

**20%\***

This program allowed for discounts of up to 20% for good lifestyles



The client was able to monetise the data that they were collecting and leverage that to fund the rewards program for the customers



We don't know all the answers, and we know that there are challenges to implementation.

Lifestyle risk factors present many opportunities for our industry; alternative data use, better customer journey and engagement, an ability to improve customer health, and the possibility of underwriting in an entirely new way.

As we advance in this space, a test and learn approach also gives more comfort. More data means more analysis. More analysis means greater accuracy and validation of our research. Combining the power of scientific rigor with data analytics will transform the way we underwrite risk.

We will continue to dig deeper and explore each of the "big six" lifestyle risks



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