Swiss Re Institute

Eat this, not that?

Part 3 of The Big Six Lifestyle Factors research

A L&H Trend Spotlight

Contents

This report on nutrition is part of our series on The Big Six Lifestyle Factors.

While nutrition may be more difficult to measure and assess than factors like sleep or physical activity, we believe it can still shed valuable light on an individual's risk profile. In combination with other lifestyle factors and wellness programs, tapping into nutritional habits can help to make better decisions at the point of underwriting and beyond with new forms of consumer engagement and personalized, health improvement guidance.

From the time we're born, we're told what, when and how to eat. Family, doctors, governments and the even the food industry itself reinforce ideas about what kinds of foods are good and bad for our health. Often such advice is contradicting and at best, confusing.

Even worse, much of the advice we 'digest' about nutrition is not backed by science and fundamentally flawed. One day butter is bad, the next day it's good. The same for red meat, fat, carbs and just about any food group you can name. Nutritional 'myths' are repeated so frequently, it's hard to distinguish fact from fiction.

Intuitively, we know that nutrition impacts our health. Yet few truly understand how and why and to what extent our food choices will help or hurt us. And this cause-and-effect between nutrition and health is showing up in the data. A suboptimal diet is responsible for more deaths than any other risk globally, including smoking.[1]

A hotly debated topic with few certainties

There are two reasons why nutrition is controversial and strongly debated:

First, nutritional studies often lack the solid foundation of a randomised controlled trial (RCT), the gold standard for research. An RCT approach reduces bias and serves as a rigorous tool to determine causality. Without an RCT framework, a large majority of nutritional studies only establish associations – not causality. For example, research may identify that eating kale is associated with reduced cancer risk, however it does not (and cannot) prove that eating kale is what directly reduces your risk of developing cancer. Even when associations are shown, evidence may be weak and littered with confounders.2

The second reason for the controversy stems from our blurred, and often emotionally charged understanding of what constitutes a healthy nutrition diet. What one person or culture deems healthy, may actually be viewed as unhealthy by another. Even the experts don't agree, as our 2020 Food for Thought Forum with the BMJ revealed.

These blurred perceptions trickle into science and flavor a bias among researchers. Low carb diets are a great example. Research branded as a study of 'low carb diets', in fact, does not use the same thresholds for a low carb diet that meet generally accepted medical guidelines.[3]

"Without consistent definitions and terminology, it's challenging to develop a uniform understanding of what constitutes a healthy diet."

Insulin 101

Ingested carbohydrates are broken down into sugars and carried through the blood stream as glucose molecules.
As blood glucose levels rise, the pancreas secretes insulin in response. Its job is to signal body tissues (particularly muscle and liver) to take more glucose from the blood stream. In turn, this activates the conversion of glucose to stored fat.

However, when our blood glucose is chronically or frequently too high (particularly when caused by sugar or refined carbohydrates), our bodies must continue secreting insulin to control it. This leads to insulin resistance which means our cells require ever higher levels of insulin to have the same ability to lower blood glucose. These high levels of insulin are harmful. They increase fat storage, inflammation, blood pressure and obesity, contribute to a fatty liver, and eventually lead to pre-diabetes and Type 2 diabetes.

"High levels of insulin are harmful and can eventually lead to Type 2 diabetes."

To understand nutrition, you need to understand the role insulin plays.

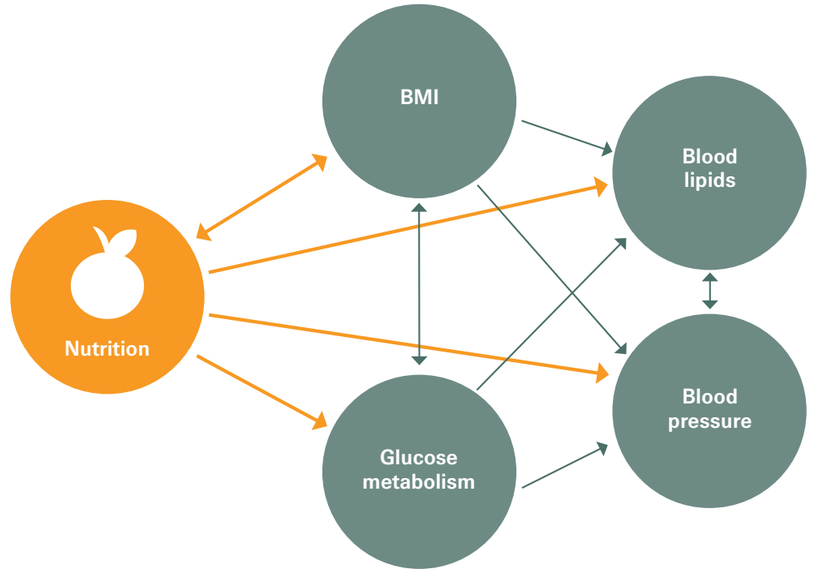
Nutrition is a key driver of traditional cardiovascular risks... but not in the way you think

The traditional markers of cardiovascular risk are all significantly affected by what we eat.

BMI
When we typically think about weight and nutrition, we think about calories consumed. But, it's more complicated than that. In reality, our weight is more influenced by the way our bodies metabolise the calories and how our metabolism changes depending on the foods we're eating. These biological mechanisms are highly complex and dependent on a number of interacting factors. In other words, our bodies are more affected by how we process different calories, rather than how many calories we consume. While total calories certainly affect average weight, metabolic responses to nutrients are a primary driver of weight loss or gain.[4]

"Our bodies are more affected by *how* we process calories rather than *how many* calories we consume."

Figure 1
Interactions between nutrition and traditional clinical risk factors



Blood lipids
Contrary to popular belief, cholesterol levels are not driven by the fat we eat. Instead, what we eat affects the metabolism of fat – which in turn affects cholesterol. This misperception has led to the demonization of fats in recent years.[5]

The landmark PURE study, that included over 125 000 participants from 18 countries, found that the traditional advice of reducing saturated fatty acid intake and replacing it with carbohydrates actually had an adverse effect on blood lipids.[6] This is another example of a longstanding nutritional myth that is without sound, scientific evidence.

Blood pressure
While those suffering from high blood pressure do benefit from lower salt intake, the evidence is not clear for those with normal blood pressure.[7] What might be more relevant are metabolic changes like insulin resistance, primarily driven by poor nutrition but also exacerbated by poor physical fitness and poor sleep, that increase the risk of hypertension.8 See our previous publications on sleep and physical activity to learn more.

Glucose metabolism
Our food choices determine the amount of sugar and form of carbohydrates we put into our bodies. Refined carbohydrates are more readily absorbed and create significantly larger sugar spikes in the blood. This requires more insulin, which can eventually lead to insulin resistance, metabolic syndrome and diabetes, increasing cardiovascular risks.

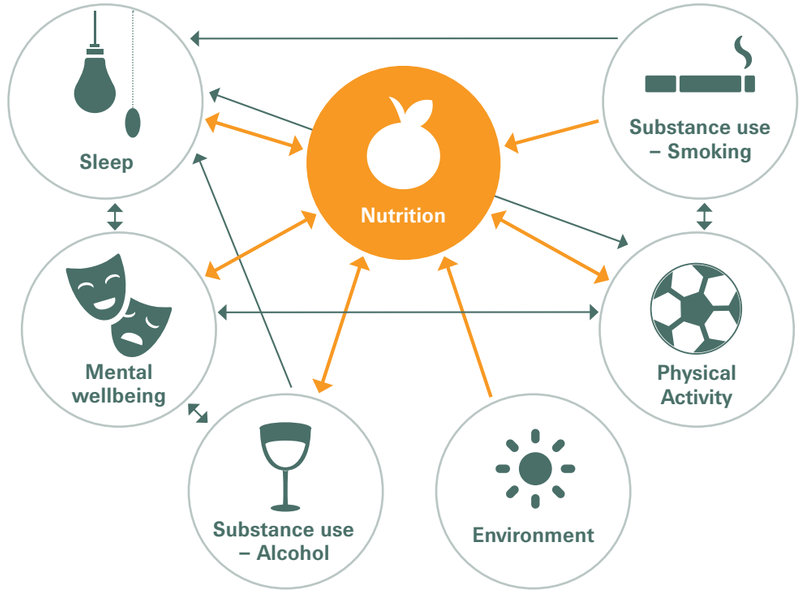
The ‘halo effect’ of a healthy diet

What goes in our stomachs affects far more than clinical cardiovascular risk factors.

The food we choose to eat (and to avoid) has a strong ripple effect in many areas of our lives - like our sleep, our physical activity and our mental wellbeing. Beyond this, our nutritional choices are deeply shaped by other aspects of our lifestyles – like our environment and decisions about drinking alcohol or smoking.

“The food we choose to eat (and to avoid) has a strong ripple effect in many areas of our lives.”

Figure 2
Interactions between nutrition and lifestyle risk factors



Sleep
A lack of sleep can drive poor eating behaviour. When you are tired, you are more likely to grab something quick and easy to eat – usually highly processed and unhealthy. Studies have shown that sleep deprivation is association with a significant increase in the desire for weight-gain promoting food.[9]

Mental wellbeing
Just like dopamine gets released by other addictive behaviours like drinking alcohol or gambling, food (particularly sweet food) leads to the same chemical release in our brains. What we eat and how often we eat is closely linked to how we feel.[10] This means that there may be potential to improve our mental health by improving what we eat – which we explore further in our article on food and mood. This field of research is still in its infancy and further investigation is needed.

Physical activity
Physical activity and diet 'feed' off each other – creating a cycle that can be beneficial or harmful. The carbohydrate insulin model (Fig. 3) describes how a diet that drives higher insulin levels creates lethargy and decreases the inclination to exercise.[11] It's a vicious cycle where food choices impact activity level, which when reduced, leads to more insulin resistance and ultimately affects how, and how much, you eat.

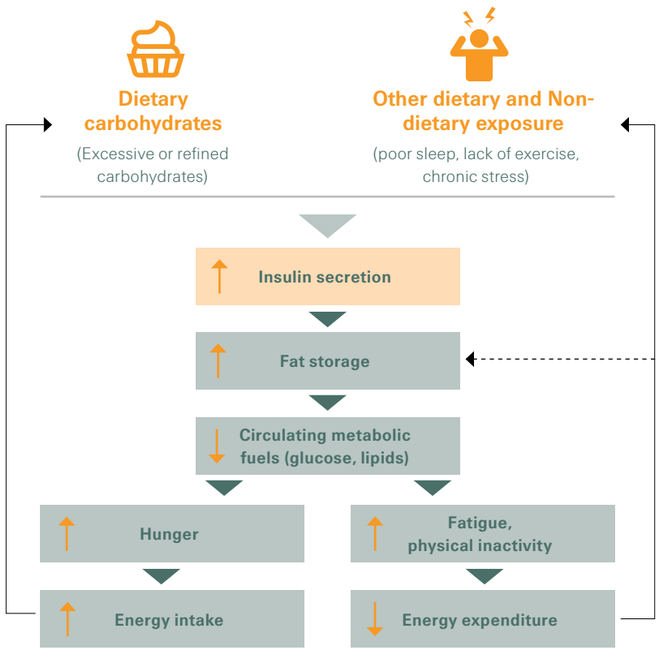
But this cycle can also create more positive outcomes where increased levels of activity increases insulin sensitivity. This leads to lower insulin levels and hunger – which when combined with a non-insulin raising diet – can improve energy levels and will likely increase lead to increased activity.

Environment
In most areas of the world, what we eat is influenced by where we live and our surrounding environment. While globalization has made it easier to eat our favourite foods all year around, our diets are still closely tied geographies. That may be part of the reason why we see different obesity levels in different areas.[12]

Substance use
The connection to food and substance use (alcohol and smoking) is behavioural and biological. A study of first year university students found that drinking alcohol affected the quantity and quality of their food choices.[13] Studies have also found heavier drinkers are less likely to adhere to recommended healthy guidelines.[14]

While nicotine can reduce appetite, participating in a high risk behaviour like smoking may indicate that smokers are less concerned with their health and nutrition overall. Indeed, smokers have been found to make poorer diet choices.[15]

Figure 3
Carbohydrate insulin model of obesity



Weight gain is more complicated than over eating or lack of exercise.

So, what should we eat and avoid?

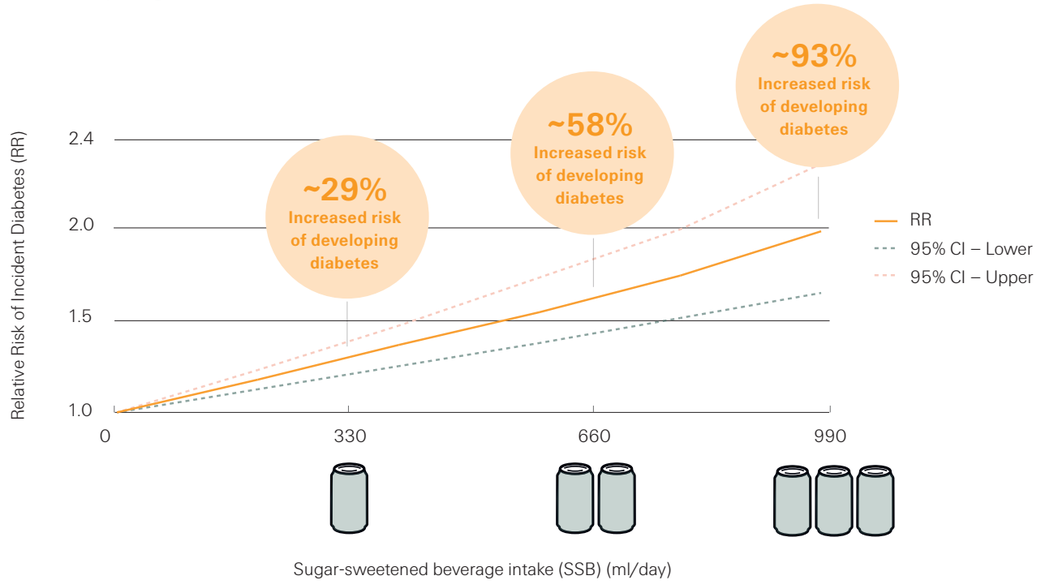
We know more about what we shouldn't eat, than what we should.

Topping this list for foods to avoid are:

- Added sugars, especially in sugar-sweetened beverages like soda and artificial fruit juice. According to our own analysis of more than 1.8 million individuals, drinking two 12-ounce sodas a day increases your diabetes risk by approximately 58% (see Fig. 4).[16–19]
- Ultra-processed foods such as 'heat to eat' frozen meals or any packaged food that is high in refined carbohydrates

Figure 4
Sugar-sweetened beverage consumption's effect on diabetes risk

Consuming sugar-sweetened beverages increases the risk of developing diabetes



There is scant causal evidence or consensus around the 'best' diet, The Mediterranean diet draws the most attention as there is general agreement on the value of consuming whole, real and fresh food, with little to no refinement.

The value of intermittent fasting is another area of interest that has grown in recent years. While it has been shown to prolong life in animals, more long-term research is still needed to fully understand the implications for humans

Instead of prescribing exactly what to eat, more doctors and researchers are focusing on the quality of food and one's approach to eating. This requires people to be more thoughtful about food. Key components of "nutritional mindfulness" includes:

- Avoiding sugar and ultra-processed foods
- Looking at nutrition facts labels,
- Eating home-cooked meals more often
- Using fresh, 'whole' ingredients

What does this mean for insurers?

For all its complexity and controversy, one thing remains true: nutrition is a key driver of overall health and longevity.
Swiss Re is dedicated to better nutritional research and evidence-based actions that dispel myths, inform a more sophisticated understanding of risk and help insurers support policyholders on a healthier journey.

"Instead of prescribing exactly what to eat, more doctors and researchers are focusing on the quality of food and one's approach to eating."

For all its complexity and controversy, nutrition is still a key driver of health and wellbeing.

Practical considerations for how an insurer might tap into nutrition

As part of a more relevant, engaging consumer experience through the underwriting process and beyond.

1

Treat nutrition like any self-disclosed behaviour

(similar to alcohol use or smoking).

- Receiving and using reliable nutritional data, from apps or wearables for risk assessment purposes, is unlikely.
- If consumers do track and share their nutritional data, it still most likely be self-reported as with food tracking apps.
- More sophisticated apps, like a diabetes management app that tracks nutrients and glucose levels, may have higher compliance and therefore more reliable data.

2

Don't differentiate between specific diet plans such as paleo vs. low carb.

- There isn't enough evidence to judge one approach as better than another.
- Instead, consider someone who takes an active interest in the principles of a diet is more likely to be health conscious.

3

Focus on understanding an applicant's nutritional mindfulness. This is a strong proxy for other healthy behaviours.

- How much added sugar and ultra-processed food do they consumer?
- How often do they dine out vs. eating a fresh home-cooked meal using whole ingredients?
- How often do they look at nutritional facts labels?

4

Use nutrition in the context of a larger wellness program.

- Nutrition is unlikely to be a standalone underwriting metric. It's most valuable when used in concert with other lifestyle factors and tools to support and engage inforce customers.

As with the other five Lifestyle Factors we consider part of our "Big Six" – nutrition is a variable that has potential for a profound positive impact on long-term health and wellbeing.

According to The Lancet, just improving nutritional choices could prevent 1 in every 5 deaths globally.[1] That makes better nutrition a worthwhile focus for insurers to promote ongoing customer engagement and to improve health outcomes. It's another way to move life and health insurance beyond a one-time transaction to a more relevant, continuous personalised relationship.

Swiss Re is partnering with a variety of health management, distribution and engagement platforms to bring end-to-end offerings to our clients. And we're embedding our "Big Six" research directly into our own models and Life Guide, our flagship underwriting guide and philosophy, to improve risk assessment and advance underwriting.

Want to learn more about how to best tap into nutrition? Curious about the other "Big Six" lifestyle factors? Underwriting Propositions Leads are here to help. Get in touch to unlock the possibilities.

We're smarter together

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