THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

The Vitality Habit Index

How to create habits for a longer, healthier life

Vitality | London School of Economics

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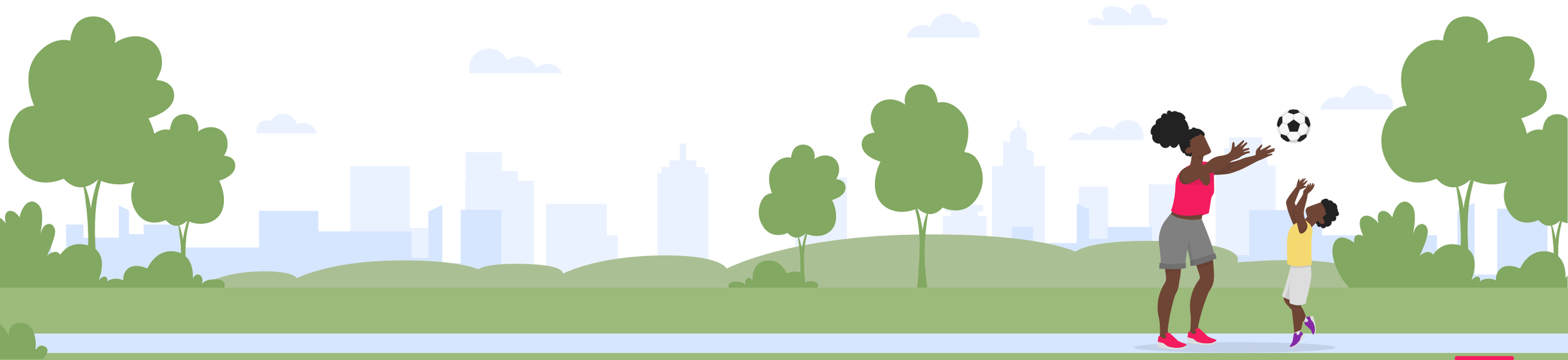


Introduction

As a society, we have never had a greater understanding of what it means to be healthy. Despite this, we are living in increasingly poor health and our healthcare systems are buckling under the strain.

Today, our lifestyle choices and behaviours are causing a decline in our health and a rise in premature death. In fact, there are **four lifestyle behaviours** (physical inactivity, poor diet, excess alcohol consumption and smoking) that account for an estimated **70% of deaths worldwide** and have a profound impact on society's health and healthcare systems.

According to the World Health Organization (WHO), **insufficient physical activity** and **obesity** are recognised as leading risk factors for developing illness and for premature death. In the United Kingdom, non-communicable diseases (NCDs), like cancer and diabetes, account for approximately 40% of premature mortality[1] and come at a steep economic cost: estimated at $47 trillion globally by 2030[2].

The evidence is clear: **unhealthy behaviours** that become entrenched habits are causing a **decline in our health**. Thus, demand for healthcare interventions is rising, and while technological advances are transforming our ability to manage or cure health conditions, this is also pushing up the cost of healthcare. Governments and healthcare systems around the world are struggling to keep up with this demand.

Each year, healthcare delivery costs around $8.5 trillion globally. Currently **less than 5%** of spending goes towards **preventive healthcare services**[3], which include investments in population health information. To address the growing health burden and help people live in better health for longer, we need a new way to think about health and health interventions.

While it may feel like we are inundated with information about what we should eat, how much we should exercise, and the importance of mental health, **there remains a chasm between what we know and what we do**.

The key to bridging this gap lies in a deeper understanding of the habits that shape our daily lives.

Around 40% of our daily lives[4] are controlled by habits, which begin as a chosen behaviour driven by a specific desire. Repeated frequently over time, habits become automatic.

Therefore, if we know how to turn small, positive behaviours into lasting habits, we can have a significant impact on the health of individuals and society. We know that **healthy habits can improve lives, prevent disease, and make societies more resilient**.

Vitality incentivises and engages its members with personalised nudges and rewards to build better habits that last. Building on this expertise and understanding of how to change behaviours, the Habit Index shines a light on the **science of habit formation** to understand how we can **incentivise behaviour change to form habits**, and then sustain these healthy habits to **help people live longer, healthier lives**.

[1] HL Select Committee on the Long-term Sustainability of the NHS, 2017.

[2] Santos, A.C. et al., 2022.

[3] Vitality Healthy Futures Report 2021.

[4] Society for Personality and Social Psychology, 2014.

40-50%

of our daily lives
are controlled by
habits.

Meaning that
changing your habits
will not only
change your health,
but also **your life!**

Key findings: the power of small changes

Habits are remarkably persistent: whether good or bad, once formed, a habit sticks.

Currently, our daily habits and lifestyle mean **we are living in ill health for longer**, with poor nutrition and exercise habits accounting for a sharp rise in non-communicable diseases.

This report shows the **direct impact** that habits have on our health and shows the transformative power of healthy habits***.

And if we know that our habits are the cause of our declining health, and we know how to change them, then **we can harness the power of habits** to create significant benefits for our health and wellbeing. Put simply, we can **help people live longer, in good health**.

+3 years

Sustaining a healthy habit* for 2 years can add up to 3 years to your life expectancy**

Healthy exercise habits are 15% more impactful for life expectancy at age 65+ than at age 45 to 65

15%
more impactful

SAVE £15bn
annually

If half of the UK's inactive population and all of the insufficiently active population started consistently walking at least 5,000 steps once a week and 3x a week, respectively

Sustaining a habit of 10,000 steps 3 or more days every week, for 3 years, can reduce your type 2 diabetes risk by 41%

reduce **type 2 diabetes risk** by
41%

*A healthy habit is defined by The Vitality Habit Index as a strong, good habit. For full definitions see page 9.

**3 years for females, 2.5 years for males.

***Habits refer to physical activity habits throughout, unless explicitly referring to 'nutrition' habits.

“Healthy habits can profoundly extend the quality and length of life.

Our data shows the impact is not only significant but applies across ages, risk factors, and health statuses – maintaining a small amount of physical activity has lasting health impacts. Given the role of behaviour in health risk globally, a better understanding of the mechanisms of habits can be a powerful way to improve individual health – and to evolve our healthcare systems to prioritise preventive health.“

Adrian Gore, Founder and Group Chief Executive, Discovery

The Vitality Habit Index

Recognising the pivotal role that habits play in shaping health outcomes, Vitality has developed a data-driven tool to quantify habit formation: The Vitality Habit Index.

In total, the study looked at the habits of **more than 1 million Vitality members across South Africa and the United Kingdom** over a ten-year period, mapping their behaviours to understand how to make healthier habits, and consequently displace unhealthy habits.

This tool scientifically defines habits using verifiable data related to physical activity and nutrition. Vitality built a predictive model for each member using the previous six weeks of a member's exercise and nutrition data to predict the behaviour or action in the seventh week, and then understand how well past behaviour predicts future behaviour.

Through its development, **Vitality aims to understand the impact of lifestyle choices and behaviours on health**, understand why individuals struggle to adhere to exercise goals, identify how to cultivate healthy habits, and discern which habits are more likely to endure.

It presents the concept of 'habit laddering,' revealing pathways to cultivating enduring habits that contribute to a longer and healthier life.

This report will explore the importance of habits in health outcomes and illustrate the **significant implications that small actions can have** on building a healthier, more resilient society. It will also show that no matter your age or existing health profile, these small changes to behaviour – and particularly incrementally being more active – can have a remarkable impact on health.

Defining habits

The Vitality Habit Index model aims to **quantify and identify habits**, using exercise and nutrition data gathered from Vitality members. The model quantifies habits looking at a **six-week history of behaviour** to then predict the action in the seventh week and beyond.

ACTION

A **specific**, intentional, and often conscious **activity** or task that an individual engages in at a particular moment in response to a specific situation or goal.

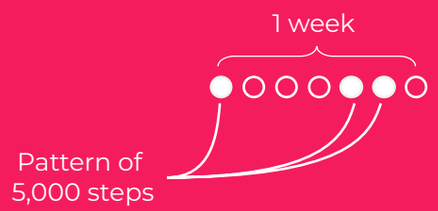
Is there an event?

Did 5,000 steps

BEHAVIOUR

A **pattern of actions** or conduct that is typically guided by one's attitudes, beliefs, or values. It encompasses a range of actions and **can be repeated over time**.

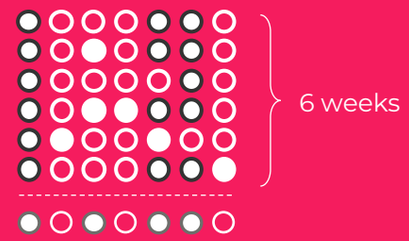
Is that event repeated?



HABIT

A specific behavior that is ingrained and **becomes automatic through repetition**. It is performed regularly. Habits are typically formed through consistent practice and can be **beneficial or detrimental**.

Is that repetition predictable?



Repeated and
predictable pattern

Classifying habits

For the purposes of this research, we have classified habits to understand the health benefits of improving them.

The classification is based on three core characteristics:

- **The action:** what you do.
- **The frequency of the action:** how often you do it.
- **The predictability of the action:** how consistently you do it.

We classify an individual's exercise habits as follows:

- **Strong good habit:** exercise 3 or more times a week with high predictability or high consistency.
- **Weak good habit:** exercise 3 or more times a week with low predictability or low consistency.
- **Medium habit:** exercise between 2 and 3 times a week with varied predictability and consistency.
- **Weak bad habit:** exercise fewer than 2 times a week with low predictability or consistency.
- **Strong bad habit:** exercise fewer than 2 times a week with high predictability or consistency.
- **No habit:** no recorded or verifiable physical activity.

The health benefits of better habits

As a society, there are **huge benefits** to be made from just **small, consistent changes** to make our habits healthier.

We know that **poor health is costing society dearly**. We are living in ill health for longer, which has significant impacts on the **quality of life**, and also creates a huge **economic strain** on healthcare systems.

The Vitality Habit Index shows that healthy habits can **reduce the incidence of non-communicable diseases**, like cancer and type 2 diabetes, and help **increase our life expectancy**. In short, we can live healthier and longer lives from small lifestyle changes.

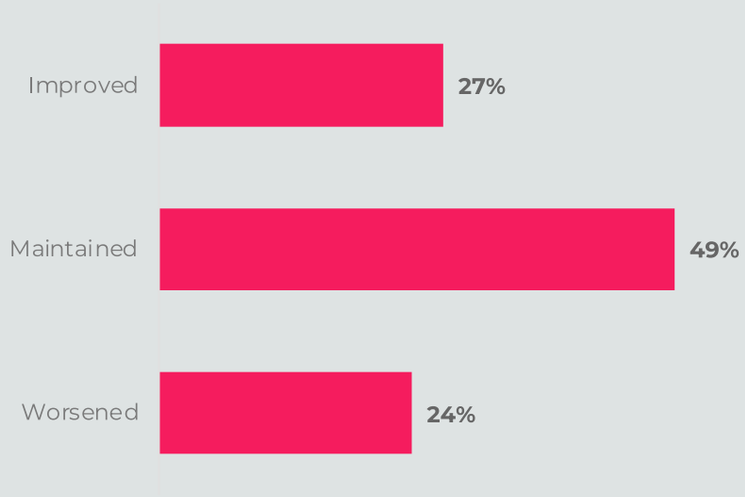
Habits are remarkably resilient

Good and bad habits often feel diametrically opposed. It's easy to fall into a bad habit – like skipping exercise or buying unhealthy food – yet it can feel incredibly hard to build a good habit.

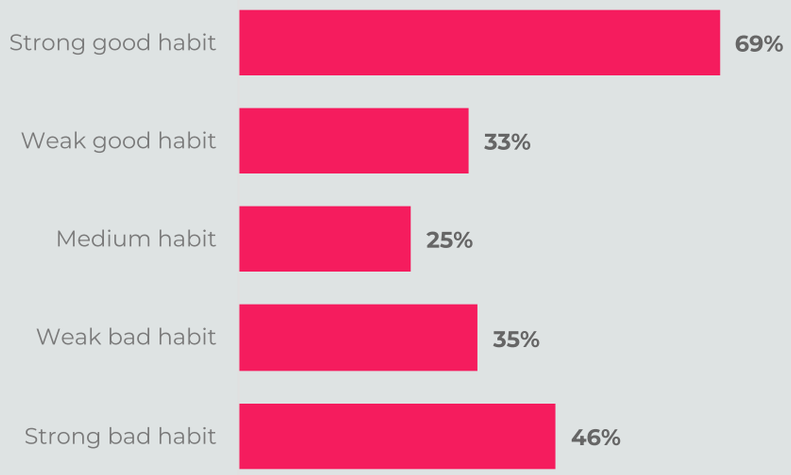
The Vitality Habit Index shows that whether good or bad, **once a habit is formed people maintain it**. Assessing the **strength and resilience** of habits is critical for understanding how habits can improve societal health.

During the extreme disruption of COVID-19, **49% of people maintained their pre-pandemic physical activity habit** after the pandemic. Conversely, despite there being a global health pandemic, where the benefits of physical activity were quickly established as factors associated with an individual's resilience against COVID-19, most people with poor habits maintained these.

Change in habits post-pandemic compared with pre-pandemic

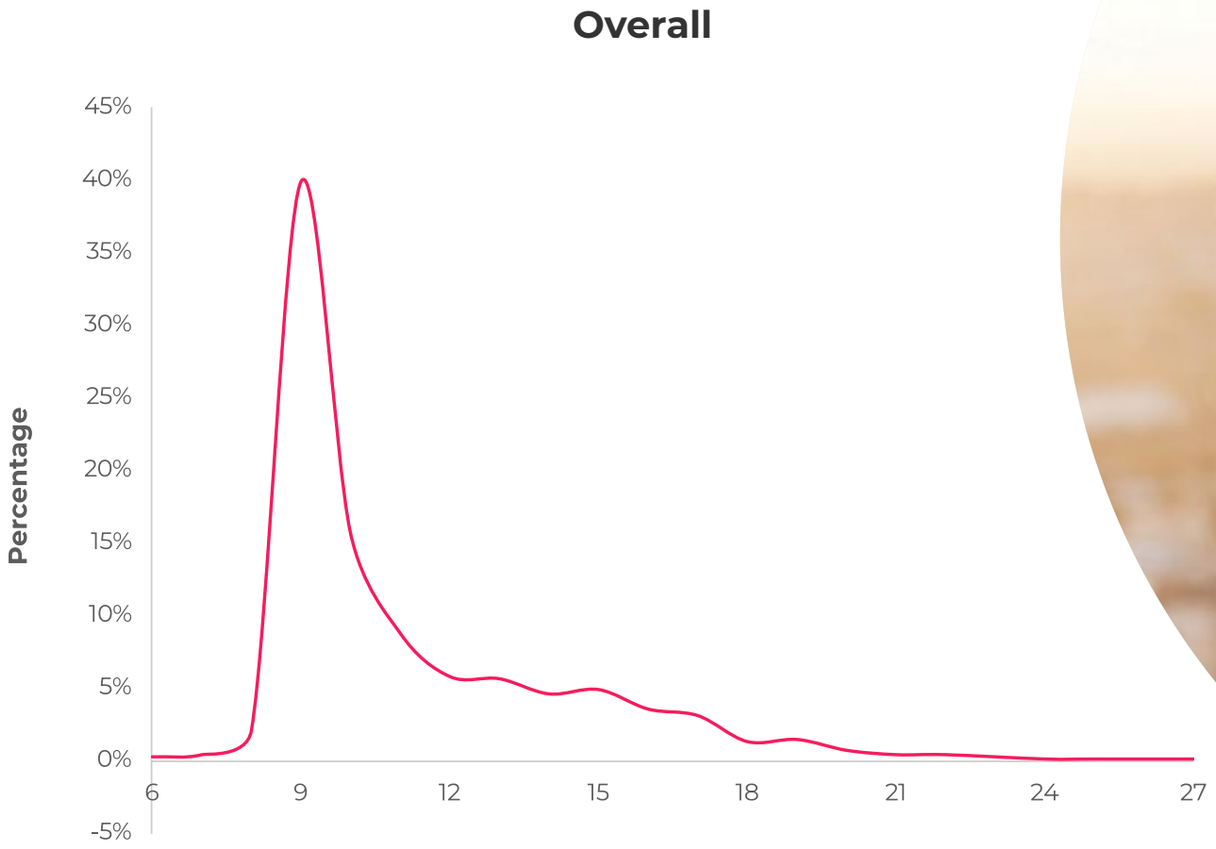


Maintained habits post-pandemic for different habit types



It only takes 7 to 15 weeks to form a habit

The Vitality Habit Index data showed that most Vitality members take between 7 and 15 weeks to form a strong habit; with the majority of those achieving a habit at the 9- to 10-week mark.



Healthy habits can reduce mortality risks and healthcare costs

Physical activity habits bring a 27% reduction in mortality risk

People who formed and sustained a habit of doing physical activity 3 or more times a week, for three years, saw a 27% reduction in their mortality risk.

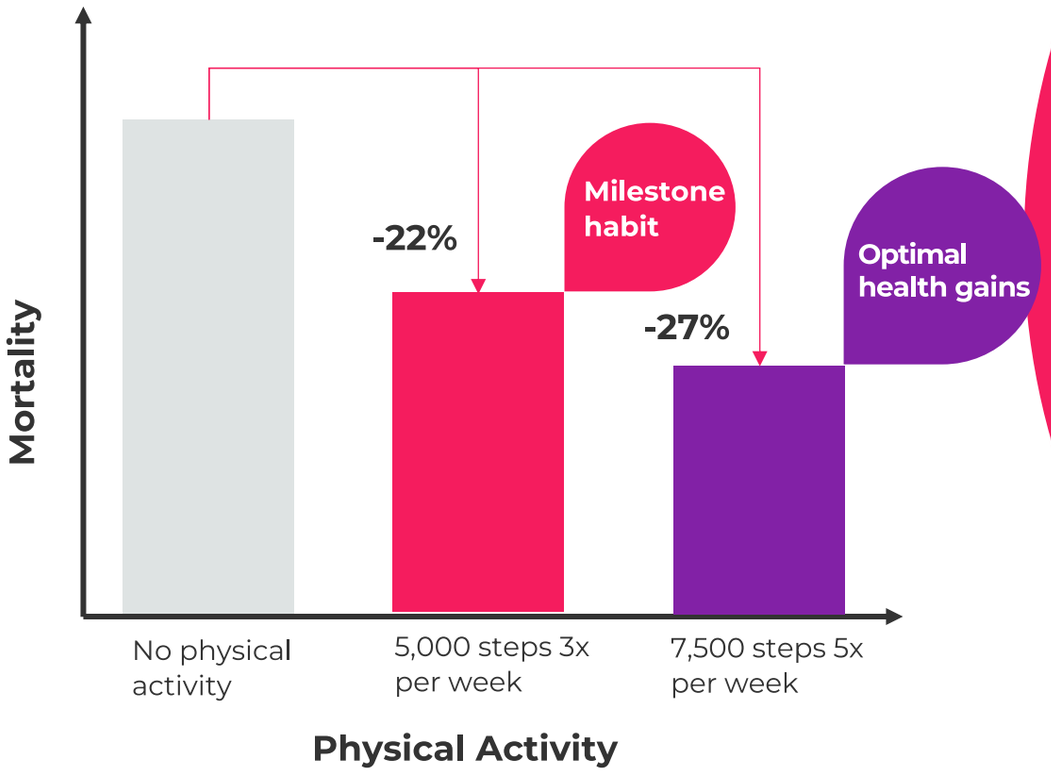
This cohort of people also reduced their healthcare costs by up to 13%.

Over 65s see a greater benefit with a 52% reduction in mortality risk

People at age 65+ who formed and sustained a habit of doing physical activity 3 or more times a week, for three years, saw a 52% reduction in their mortality risk.

This is a 15% greater reduction in mortality risk compared with those aged between 45 and 65.

What's the "sweet spot" for sustainable habit formation that makes a difference?



5,000 steps

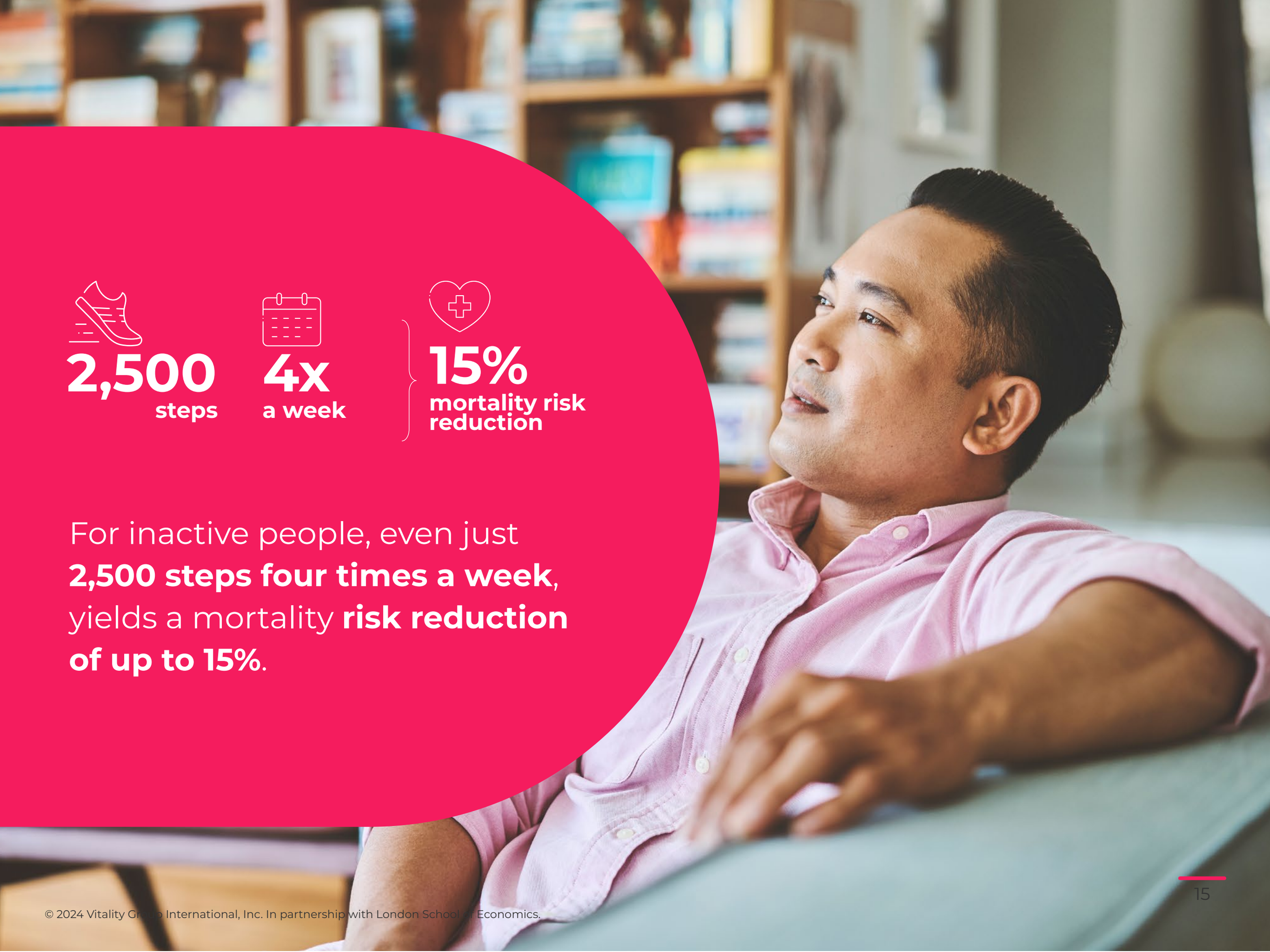
3x a week

22% mortality risk reduction

People who establish this habit maintain it **1.5 times longer** compared with people who start exercising with high-intensity workouts.

This habit is associated with a **mortality risk reduction of 22%** — while staying at a level of physical activity that is achievable and maintainable.

To get **optimal health gains** while still being able to maintain a consistent habit, **7,500 steps 5 or more times a week** is advisable. This habit is associated with an overall mortality risk reduction of 27% — and as much as 52% for those over the age of 65.



2,500
steps

4x
a week

15%
mortality risk reduction

For inactive people, even just **2,500 steps four times a week**, yields a mortality **risk reduction of up to 15%**.

It’s never too little or too late to make a big difference

Lucas

55 years old, living with type 2 diabetes.
Changes from little-to-no physical activity, to a sustained habit of **5,000 steps 3 times a week.**

Lucas is likely to **sustain this habit for 1.6 times longer**, relative to others aged 45 to 65 who do high intensity workouts.

By changing his habit, Lucas **reduces his mortality risk by 40%** relative to others with type 2 diabetes who remain sedentary.

Leigh

65 years old, maintains a habit of **7,500 steps 4 times a week.**

Leigh is likely to **sustain this habit for 1.5 times longer** relative to others aged 65 and older who do high intensity workouts.

This habit will **reduce Leigh’s mortality risk by 52%** relative to someone 65 or older, who remains sedentary.

Healthy habits can reduce the risk of type 2 diabetes

In the UK, **5 million people are living with diabetes**[1].

The number of people under 40 that are being diagnosed with type 2 diabetes is rising faster than for those over 40[2].

While there are potentially life-changing medical advances that can reduce the risk of diabetes, this research shows the profound impact that physical activity can have – at little or no cost to the healthcare system.

10,000
steps

3x
a week

41%
reduction

People who sustained a habit of 10,000 steps 3 times a week for 3 years saw a 41% reduction in type 2 diabetes risk

10,000
steps

5x
a week

57%
reduction

People who sustained a habit of 10,000 steps 5 times a week for 2 years saw a 57% reduction in type 2 diabetes risk

[1] Diabetes UK, 2023.

[2] Diabetes UK, 2022.

Healthy habits can reduce the risk of cancer

In the UK, someone is diagnosed with cancer at least every 90 seconds[1].
There are an estimated **3 million people living with cancer** – and this number is set to rise to 4 million by 2030[1].

While the causes of cancer vary – and some are linked to genetics – there is a growing conversation about the role of lifestyle and habits. This research sheds further light on these questions, showing that physical activity can reduce the risk of stage 3 and stage 4 cancer.

People who sustained a habit of 10,000 steps 3 times a week for 3 years saw a 19% reduction in risk of stage 3 cancer

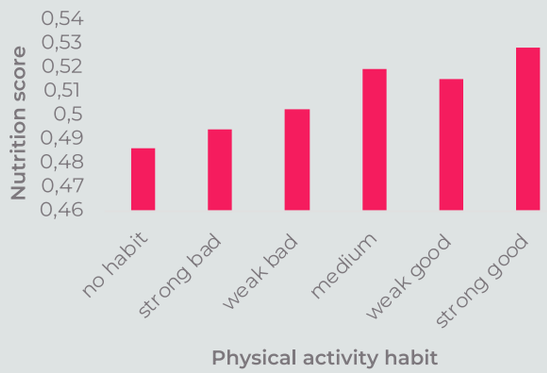
People who sustained a habit of 10,000 steps 3 times a week for 3 years saw a 36% reduction in risk of stage 4 cancer

[1] Macmillan Cancer Support, 2023.

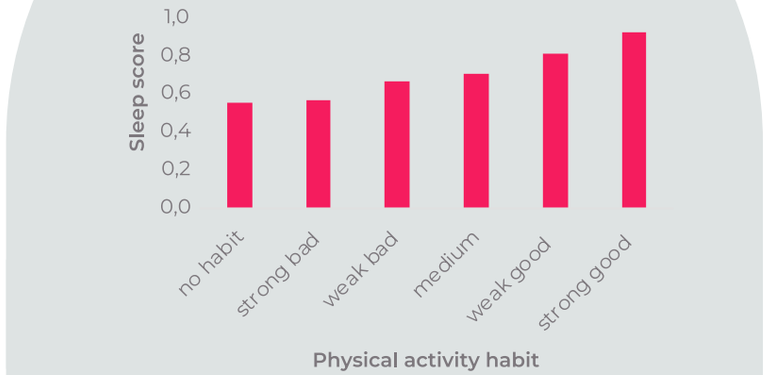
Good habits tend to lead to more good habits

Our findings demonstrate the **reinforcing nature of healthy habits**.

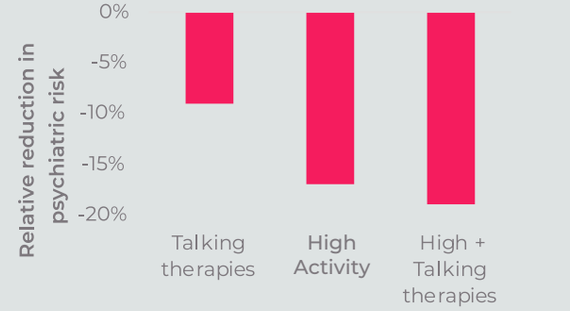
There is strong correlation between healthy physical activity habits and nutrition, sleep, and mental health outcomes. Once you establish a healthy exercise habit, has positive effects for your broader health and wellbeing.



Maintaining **3 or more physical activity days a week** is associated with a **10% improvement** in eating habits.



Individuals who maintain **3 or more physical activity days a week** gain **one month of extra sleep in a year** relative to individuals with no habit or a strong bad habit.



High activity levels lead to a **17% improvement in future psychiatric risk*** and improve the psychiatric risk reduction from talking therapies by up to 12%.

Nutrition and sleep data from SA Vitality members and psychiatric risk data from UK Vitality members.

*Psychiatric risk is defined as any psychiatry claim above £1000 or In-hospital (removing genetic related illness)

Nutrition habits improve with age

Analysis of a cohort of 200,000 Vitality members from 2018 to 2022 reveals trends in how our nutrition habits change throughout our lives.

The data shows that our age and family make-up have a strong external influence on the nutritional profile of our shopping baskets.

Time is also a critical factor – there is a clear trend that individuals or family units with more leisure time have better nutrition habits. The COVID-19 pandemic also illustrates this: with such a sharp disruption to our lives, and often an increase in free time due to lockdowns or changing social habits, **45% of people had good nutrition habits during the pandemic**, dropping to 40% after the pandemic.

Members in the 65+ age category are most likely to have good nutrition habits, at almost 63%. This is about 20% more than in the 45 to 64 age category and 25% more than in the 30 to 44 age category.

Outside the 65+ age category, single members and couples without children are the most likely to have good nutrition habits.

Members whose policy changed from having no children to having children, were 1.27 times more likely to decrease their nutrition habits than members who did not change their policy.

Individual habits transform our collective health

The Vitality Habit Index evidences the clear individual benefits of forming and sustaining healthy habits.

But there is also a clear case for governments to support and prioritise healthier habits to improve societal outcomes.

What if the UK's inactive population started walking?

If half of the UK's inactive adult population began consistently walking 5,000 steps once a week, the in-hospital cost saving that could be achieved (based on the estimated £96 billion NHS hospital spend in 2021 for adults) is:

- **£4 billion** if they form consistent physical activity habits by walking 5,000 steps or more **once a week**.
- **£15 billion** if in addition, those who have poor exercise habits began consistently walking 5,000 steps **three times a week.**

How to create healthy habits that last

Habit laddering: 3 steps to successful habit formation

If we have established that physical activity habits have a profound impact on our health, the question remains: **how do we form and sustain good habits?**

The Vitality Habit Index shows that habit laddering is the most effective pattern to form and sustain good, strong habits that lead to tangible positive health outcomes. Building habits using habit laddering is powerful because it supports replacing an old habit with a new one and creates the persistency that unlocks the mortality and morbidity benefits of good habits.

Repeat then intensify

Keep up your activity for **six to eight weeks***. Then, increase your activity intensity.

Start small

Choose an activity that's easy and practical. Focus on **building frequency and consistency**.

Set a target

Define your goal based on where you are in **your health journey**.

* Increase frequency first, then your intensity, and don't increase your intensity by more than 800 average daily steps a week.

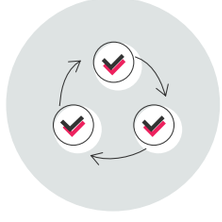
Conclusions and policy recommendations

This paper presents actionable strategies for stakeholders to promote healthy habit formation and enhance health outcomes. We argue that societies prioritising health and resilience ought to prioritise habit-based interventions.

For regulators and policy makers:

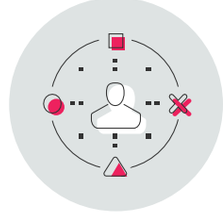
1. Implement **evidence-based policies** that **prioritise healthy habit formation** for disease prevention, drawing on relevant studies and scientific literature.
2. Consider **targeted short-term incentivisation programmes**, to **encourage gradual formation of habits** with demonstrable health impacts.
3. **Raise awareness** and **implement choice architectures** that **encourage marginal changes**, recognising the impact of even minimal behaviour changes.
4. **Invest in walkable cities** and **workplace wellness programmes** to foster active lifestyles.

For employers:



1. Develop a **health and wellbeing strategy**, with relevant and targeted interventions, **developed around specific business needs** and context. The strategy should be supported by data and reporting mechanisms to monitor progress and understand the impact.
2. **Integrate physical activity** initiatives into **workplace wellness programmes** and **daily routines**, to improve mental health and productivity. This can include standing desks, cycling schemes, or encouraging lunchtime walks or activity away from the desk - **with data-driven measurement** of the impacts.

For individuals:



1. **Set manageable goals and gradually increase** intensity over time, emphasising consistency in habit formation over the long term.
2. Particularly among older adults, **recognise the significant health impacts of small lifestyle changes**, and work on building it gradually to maintain consistent physical activity habits.
3. **Engage in active ageing** initiatives **and healthy nutrition** programmes designed around long-term behaviour change.

Intersectoral collaboration

Efforts to shape healthy habit formation cannot happen in silos. It requires an intersectoral approach to effectively implement policy recommendations to improve societal wellbeing and economic prosperity. The public, private, and non-profit sectors can learn from **successful initiatives like Singapore's Liveable City Initiative**, highlighting the importance of intersectoral collaboration in promoting healthy habits and lifestyles.

About Vitality

The Vitality programme addresses the impact of non-communicable lifestyle-related diseases on both individuals and society, with a reach covering **1.2 million members in South Africa** and **1.5 million members in the United Kingdom**.

Over the past decade, Vitality has utilised immediate incentives through initiatives like Vitality Active Rewards, the Apple Watch benefit, and the HealthyFood benefit to encourage healthier behaviours and the formation of positive physical activity and nutrition habits.

The Vitality programme extends rewards and incentives to its members for engaging in health-promoting and preventive activities. Rooted in the concept that motivation flourishes as individuals achieve incremental goals, the programme uses a tiered-status system – Blue, Bronze, Silver, Gold, and Diamond status – to acknowledge members' activities that promote their wellbeing.

Vitality's incentives can be defined into two categories: enabling incentives and contingent rewards. Enabling incentives are designed to eliminate financial barriers to adopting healthy behaviours, reducing the immediate costs that often overshadow long-term benefits. For example, the Vitality Gym Benefit provides substantial discounts on gym memberships, making it more accessible for Vitality members to maintain fitness routines. The HealthyFood benefit, for example, offers cashback for purchasing healthy food items at Vitality partnered grocery stores in South Africa, making healthy food items visible and more affordable.

Conversely, contingent rewards stimulate ongoing engagement with health-promoting activities, helping Vitality members experience instant gratification for positive health behaviours that usually have long-term benefits. Vitality members accumulate points throughout the year, determining their Vitality status level.

Elevated statuses yield advantages such as increased travel discounts and financial incentives for insurance policies. Features of the Vitality programme, like Vitality Active Rewards (VAR) encourages members to meet their personalised weekly exercise goals. The micro rewards for achieving these weekly personalised goals include, for example, Discovery Miles, a rewards currency that is more valuable than cash, which is redeemable in partner network stores and when shopping online.

Complementing the Vitality Shared-value Insurance model and incentive programme, Vitality has established one of the world's most extensive and longitudinal behavioural data and health-status data repositories encompassing verified physical activity, biometric, and nutrition, pathology, healthcare utilisation, and clinical data spanning the inception of the programme. These insights have paved the way for the modelling and quantification of sustained behaviour change, including the formation of habits over the long term. This study marks a significant milestone in understanding the profound impact of behaviour on health and life expectancy, while providing a comprehensive approach to combating hyperbolic discounting (choosing immediate rewards over long-term benefits) tendencies.

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