



Apple Watch

THE

ANTIDOTE

TO INACTIVITY

*How technology-based incentives
drive healthier lives*

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Introduction

This book outlines findings of the largest behaviour change study on physical activity – based on verified data.

The research focused on Vitality Active Rewards with Apple Watch and how it works to make people more active. Discovery Vitality and Apple started the collaboration just over three years ago to create a programme geared towards increasing physical activity, enabled through Apple Watch.

Vitality Active Rewards is grounded in the behavioural economics principles of goal setting, gain framing, loss aversion and immediate rewards.

Linked to the sophisticated technology capabilities of Apple Watch, it personalises physical activity goals and rewards activity recorded with Apple Watch. There are more than 5 million people using Vitality Active Rewards on a daily basis across the globe.

This study, conducted by RAND Europe, a not-for-profit global research institute, is the largest yet to measure the effectiveness of financial rewards coupled with wearable technology to make people more active over time.

“Our study suggests that incentivising physical activity can lead to better activity levels and the Vitality Active Rewards with Apple Watch benefit bears that finding out. Given RAND Europe’s fact-driven, evidenced-based research and analysis, we are pleased that our work has helped to deepen understanding of what works in designing health-promotion programmes.”

Hans Pung, President, RAND Europe





Adrian Gore, Chief Executive, Discovery

Building blocks of the revolution

There are few issues as challenging today as how to help people make good choices about their lifestyles, so they can live healthier, better lives and reduce the strain on health and social systems. Imagine a world where the interests of business, customers and society align perfectly.

A virtuous circle where, when customers do well, so do the businesses that serve them, and society as a whole benefits.

We are at a unique moment in history. Three powerful trends are driving this context for disruption. First, we now have a **strong understanding of the behavioural nature of risk**, with the global disease burden overwhelmingly driven by lifestyle diseases caused by personal choices. Second, **new technologies such as wearables are becoming powerful enablers of health**, wellness and behaviour change. Finally, **society is demanding that business focus not only on profits but social purpose too**.

The convergence of these trends creates an unprecedented opportunity. And a major new study by RAND Europe shows the power of delivering a behavioural change programme through cutting-edge technology. The study is the largest of its kind, covering nearly half a million people across three continents, and shows how the incentives in **Vitality's Shared-Value Insurance model, combined with Apple Watch, dramatically increase physical activity levels across countries, demographics and life stages**. Particularly notable are the improvements for at-risk participants, such as those with a high-risk body mass index (BMI).

Very simply, the research conclusively demonstrates that using behavioural principles to engage and motivate people, delivered by state-of-the-art wearable technology in the form of Apple Watch, can shift people's behaviour so they do more exercise and continue to do so.

We know exercise is good for us. I suspect most people don't know just how good. Physical activity reduces the risk of cardiovascular disease, hypertension, diabetes, and breast and colon cancer. It is also an important **trigger event for other health-promoting behaviours** such as healthy eating and preventive screenings. Depending on how often and how intense the exercise, active men and women can expect two to five more years of life, according to a review of 13 studies in the *Journal of Aging Research*.

And a study of nearly half a million people in the British medical journal, *The Lancet*, concluded that **15 minutes of moderate-intensity physical activity a day could increase average life span by three years**. Just as important, a greater-than-average portion of the extra years are lived free from disability.

Exercise has positive effects on mental health, delays the onset of dementia, keeps your brain sharp and improves your sleep.

The insurance industry has, to a large degree, been about death. Vitality is different – by using the unique capability of insurance to monetise better risk, we are able to turn positive behaviours into additional value for clients, businesses and society.

This capability is being scaled through a global network of leading insurers who are using the Vitality Shared-Value Insurance model in their markets.

This booklet gives you an insight into the building blocks of this revolution: the businesses that want to be on the right side of history, the powerful behavioural insights at work, and the revolution in wearable tech.

I am grateful to RAND Europe for their work in quantifying the benefits so definitively.

Vitality Active Rewards globally

As at October 2018



UNITED STATES*

Launched 2016

> 31 000
Vitality Active Rewards members

> 17 000
Active Apple Watch users

\$400 000+
worth of gift cards in USA



GLOBAL VITALITY NETWORK

> 5 million
active users

> 40 million
activities tracked and incentivised



UNITED KINGDOM

Launched 2014

> 500 000
Vitality Active Rewards members

> 71 000
Active Apple Watch users

12+ million
cinema tickets and Starbucks



SOUTH AFRICA

Launched 2015

> 460 000
Vitality Active Rewards members

> 26 000
Active Apple Watch users

12+ million
rewards earned

Data used for the purposes of the study

422 643

Total participants

2015 – 2018

Study period

3 countries

United States, United Kingdom and South Africa

Tracked activities

Steps, heart rate, calories and gym visits

Participant data

Demographics, location and BMI

Anonymised data

Vitality's commitment to complete personal data protection

How Vitality Active Rewards with Apple Watch works

Vitality Active Rewards works seamlessly with Apple's sophisticated health and fitness companion, Apple Watch, to help motivate and encourage Vitality members to get more active.

Based on the personalised activity goals set on the Vitality Active Rewards app each week, Apple Watch measures Vitality members' physical activity allowing them to earn Vitality points towards achieving their Vitality Active Rewards goal.



1. Get Apple Watch

Get Apple Watch for a small activation fee.

Pay the balance over 24 months and reduce these payments to zero by being active.



2. Get Active

Personalised, dynamic physical activity goals are set weekly and delivered through the Vitality Active Rewards app.

These goals can increase or decrease based on the goal history to ensure that members remain challenged and engaged.



3. Get Rewarded

Every week Vitality members who achieve their goals receive a reward such as a coffee, a healthy smoothie or they can donate the value of their rewards to a charity.

Every month Vitality members can reduce their Apple Watch payments to as low as zero based on how many weekly goals they achieve during the month.

*In the US, Active Rewards is a buy-up option for employer groups and only a subset have opted to provide the benefit to their employees.

Responding to global trends: Combining technology, behavioural science, and Vitality Shared-Value Insurance

Vitality Active Rewards with Apple Watch is easy to use and offers the opportunity to drive good health behaviour for more desirable outcomes in health systems.

Has mass appeal

With Apple Watch as the enabling device, Vitality Active Rewards reaches various population sections:

- People who are already active, and people who are inactive.
- People with high health risks (high BMI), and people diagnosed with chronic health conditions.

A foundation in behavioural economics and science

Insurance risks are behavioural. Vitality Active Rewards uses the principles of micro goals, loss aversion, and rewards as motivation to change behaviour and to maintain positive behaviour change.

Funded through shared value

The profits generated from improved health and greater physical activity, which lowers insurance risks, are shared with clients and used to fund incentives and rewards.

It is this success that has encouraged a formal study on the impact. Read more about the study in the pages that follow. For the study, all data was fully anonymised in line with Vitality's commitment to privacy of information.



Why this study is important

Moving is important – for better health and longer life expectancy

Physical inactivity or the lack of being active has a direct effect on health outcomes.

These outcomes include weight, mental health, cardiovascular health, and the risk for developing conditions like diabetes and cancer.

Depending on how often and how intense the physical activity, active men and women can expect two to five more years of life, according to a review of 13 studies in the *Journal of Aging Research*.

A global focus to get people moving more

The World Health Organization Global Action Plan on Physical Activity stresses the societal impact of physical inactivity.

The action plan suggests creating environments that promote physical activity to reduce various health risks and the rise of NCDs (non-communicable diseases).



More than **one in four** adults globally (28% of the global population or 1.4 billion people) are **physically inactive**.



“Crucially, once we acknowledge that humans are fallible creatures, we can ask how to help them make better decisions. We can often do so with simple nudges that point people in the right direction, but don’t force anyone to do anything. We need these helpful nudges now more than ever.

Consider the most important issues facing the world such as climate change, healthcare, an ageing population, income inequality, xenophobia, and mounting threats to world peace. Each of these problems is, at its heart, behavioural.

But in these times when all news seems to be bad – or fake – I can report on progress. Around the world, governments and NGOs are working with behavioural scientists to design and test scientifically informed policies that are working.”

Richard Thaler, Professor of Behavioural Science, Chicago Booth School of Business. Nobel Prize winner in Economic Sciences and co-author of the global best seller *Nudge: Improving decisions about health, wealth, and happiness*.

How the study worked

This unique study examined the relationship between incentives and physical activity, focusing specifically on the Vitality Active Rewards with Apple Watch benefit.

Questions the study answered



1. Do incentives and technology lead to improved levels of physical activity?

The financial incentive: activity-linked monthly repayments for an Apple Watch.



2. Can incentives and technology improve levels of physical activity in the long run?

Existing studies have a time limit. By contrast, this study evaluated the effects over a two-year intervention phase.



3. Do incentives and technology of this nature appeal to all subgroups?

Looking at the broader appeal of the benefit, the study also looked at the effects by subgroups. These subgroups included individuals with lifestyle risks like a high BMI.

Study methods increased robustness and the ability to generalise results

The study method: a quasi-experimental approach. This allowed researchers to compare data for those who used the Vitality Active Rewards with Apple Watch incentive with those members who engaged in Vitality Active Rewards alone.

Why this study method is more robust

This study method addresses the most common shortfalls of existing studies on physical activity. These shortfalls include anti-selection, small study populations, short analysis periods and the **“tracker effect”** – where more accurate tracking is confused with actual behaviour change.

This study, conducted by RAND Europe, addresses all these common pitfalls **by assessing the impact of a loss-framed monthly incentive – Vitality Active Rewards with Apple Watch.**

Measuring the effect of Apple Watch

The Vitality Active Rewards with Apple Watch benefit was introduced in 2015. The eligibility criteria for Apple Watch varies between countries. About 20% of the population in the study were eligible for the Apple Watch. A total of 11% chose to use the Apple Watch incentive.

The study method allowed for the measurement of the **effect of the addition of Apple Watch incentive and determined the minimum behaviour change expected from Vitality Active Rewards with Apple Watch.**

The study compared the difference between two populations in each market:

1. People who received a **gain-framed incentive**: Vitality Active Rewards.
2. People who received an **additional loss-framed incentive**: Apple Watch.

The study applied a fixed-effects Poisson regression (a generalised linear form of regression analysis), adjusted for the diverse characteristics and context of the study population. Factors the study considered:

1. Differences between populations: demographics, starting fitness levels, and health status.
2. Differences between the types of physical activity and the intensity.
3. A 24-month period to measure the sustained behaviour change and behaviour change for six months after treatment.
4. Seasonality: variations that occur commonly in physical activity.
5. Minimising the “tracker effect” looking at individuals who had a device before introducing the Vitality Active Rewards with Apple Watch benefit.

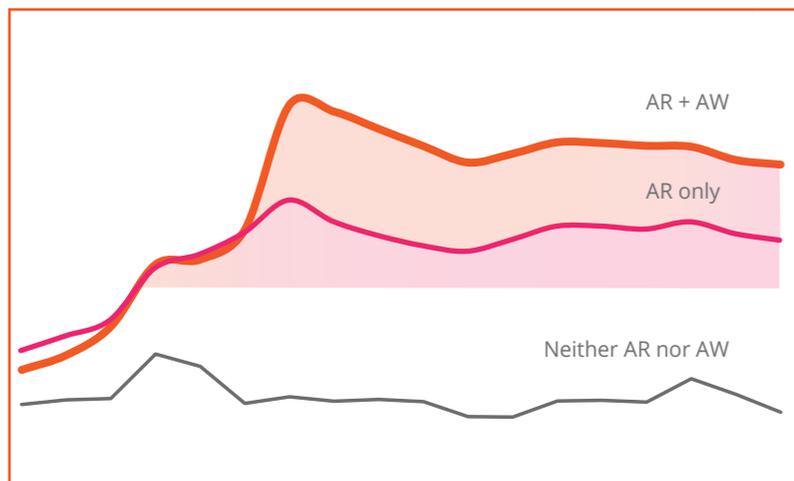
A person is running on a paved road during a golden sunset. The image is a close-up, focusing on the runner's legs and feet. The runner is wearing black leggings and bright, colorful running shoes with purple, yellow, and teal accents. The background is a soft, out-of-focus landscape with trees and a bright sun low on the horizon, creating a warm, golden glow. The overall mood is energetic and inspiring.

“We know exercise is good for us.
I suspect most people don’t know just how good.”

Adrian Gore, Chief Executive, Discovery

What the study found

People with Vitality Active Rewards with Apple Watch become more active and stay active over time. The combination of Vitality Active Rewards (goal structure and loss aversion) with Apple Watch: **34% more active (+4.8 days each month) – an extra week of physical activity every month.**



This diagram is for illustrative purposes only, and does not form part of the study conducted by RAND Europe.

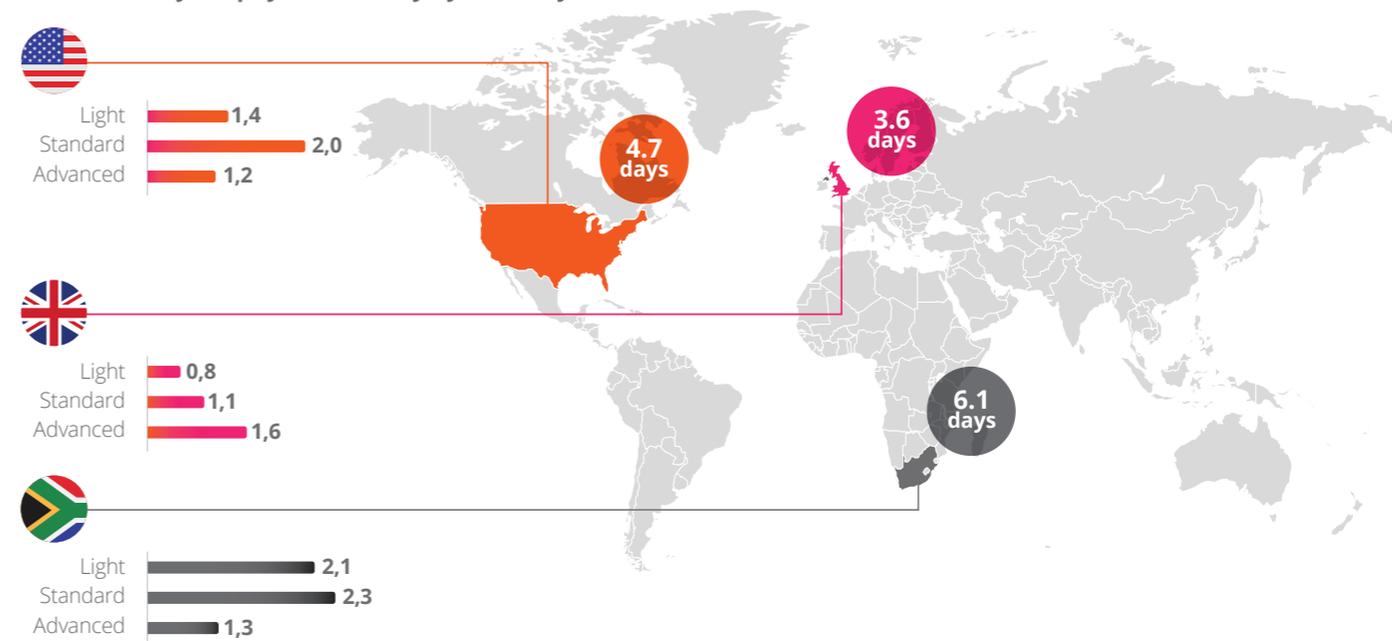
+34%
+4.8 days

Loss-framed incentive:
increase in activity after taking up
Vitality Active Rewards with Apple Watch

Gain-framed incentive:
increase in activity after taking up
Vitality Active Rewards

34% more activity for individuals participating in the Vitality Active Rewards with Apple Watch benefit compared to Vitality Active Rewards alone

Additional days of physical activity by intensity of exercise



Members sustain their increase in physical activity



*High risk population defined as those with a BMI in excess of 30.

Glossary of terms

A gain-framed incentive is a type of incentive in which individuals gain a specific reward for meeting certain requirements or goals. An example is Vitality Active Rewards.

A loss-framed incentive is a type of incentive in which individuals lose something or they have to pay back money when they do not meet requirements to qualify for the reward. An example is Vitality Active Rewards with Apple Watch.

Behavioural incentives are rewards that use principles of behavioural science to guide people to adopt a certain behaviour, for example to engage in physical activity. Behavioural incentives include financial pre-commitment, loss-framed and gain-framed incentives.

Quasi-experimental is similar to a true experimental study but the participants lack random assignment. It is study method used to estimate the causal impact of an intervention on a target population.

Shared Value is a business concept first introduced in 2006 by Harvard Business School professors Michael Porter and Mark Kramer. It is a strategy that gives companies a new way to achieve economic success through solving social problems. Shared Value is created by linking a company's success with individual client benefit and large-scale social progress. Today the benefits of building a business around social impact are touted by giants such as IBM, Google and General Electric.

Shared-Value Insurance is a new category of insurance and part of the Discovery business model. Vitality was launched in 1997. Shared-Value Insurance, with Vitality at its centre, enables Discovery to have a positive impact on large-scale societal needs without compromising its bottom line. Discovery's businesses help people change behaviours that influence risk. This creates long-term value for the insurer, clients, and society.

Vitality Active Rewards is a subset of Vitality's incentivised behaviour change programme that rewards individuals for tracking and reaching different thresholds of physical activity. Participants track their physical activity through a variety of devices.

Vitality Active Rewards with Apple Watch is similar to Vitality Active Rewards. Members earn Apple Watch for a small upfront payment, and monthly repayments are linked to their physical activity goals. Reaching these goals can take the payment of Apple Watch to zero each month.

Closing remarks

The Vitality Shared-Value Insurance model offers a new approach which we believe is transforming the industry – a model that aligns the interests of the insurer with the customer.

Being a disruptor is good for Discovery as a business given we benefit from better customer retention and lower healthcare costs, but it is also good for individuals who start living longer, healthier lives and in turn create a transformed society.



A focus on addressing physical activity is vital given it is a leading risk factor for global mortality. Over five million people die each year who would not have if they had been physically active. In the US alone, more than \$100 billion in annual healthcare cost is attributable to a lack of adequate physical activity, according to the US Department of Health and Human Services.

By helping people make better choices when it comes to their health, and being in a position to monetise this, the insurance industry has a key role to play in addressing the problem of physical inactivity. In line with this, the Global Vitality Network – our collaboration with partner insurers using Vitality Shared-Value Insurance around the world – is committed to increasing physical activity levels globally.

Ultimately the outcomes that really matter are healthier lives, a more productive society and reduced strain on overburdened healthcare and social welfare systems around the world. Outcomes that we will help make a reality.





