VitaMins Health
Wearable technology – all dressed up but where will it go?

Availability of, and interest in, wearable technology is on the rise. However, is it having as positive an impact on our physical activity, our mental health, and our life expectancy as we hope?

The history of wearable technology began in the 13th century with the invention of the first eyeglass. Bypassing many creations including the creation of the calculator wristwatch in the 1970s and the Sony Walkman in the 1980s, we fast-forward to the Apple Watch debut in 2015. Initially promoted as a fashion accessory, Apple later focused on its health and fitness orientated features.

Wearable technology now takes many forms. For example, smartwatches, fitness trackers, ECG and blood pressure monitors, biosensors, and blood glucose monitors. They are used to collect data on users' health such as steps walked, calories burned, heart rate variability, blood pressure, body temperature and blood glucose levels.

Does the use of fitness trackers increase physical activity?

It's difficult to say with certainty.

Some studies (for example, project catalyst carried out by the American Association for Retired Persons) suggest that the use of dedicated fitness trackers increase physical activities. The critics among us may have different views. Could there be a 'healthy volunteer effect' at play given healthier people might be more inclined to use these types of trackers? Perhaps those regularly using fitness trackers are doing so for a specific purpose e.g. to lose weight or to improve cardiovascular health (correlation does not imply causation). It's also difficult to compare those who use dedicated fitness trackers against those who do not. How do you track those without a tracker?

What are the positive mental health implications?

Being physically active can have various health benefits, both physical and mental. Physical activity can improve brain health, reduce the risk of disease, strengthen bones and muscles reduce stress and anxiety, and reduce the risk of depression.

It's now possible to track an individual's psychological state and monitor their mental health status through wearable technology. This data can be used to try to prevent and treat mental health disorders. For example (1) Muse is a brain-sensing headband that uses real-time biofeedback to aid meditation and sleep; (2) Flow is a brain stimulation headset that helps users understand, treat and prevent depression.

Are there negative mental health implications?

There is not much research yet on the impact on psychological wellbeing of wearable technology. However, it's fair to say that there could be negative mental health implications.

Wearable technology, originally made to motivate users, could itself lead to an unhealthy obsession over health data. It could accentuate feelings of anxiety ('I haven't met today's target!'), low self-esteem ('I never meet my targets!') and possibly promote behaviours that lead to eating disorders and exacerbate compulsive counting,a common symptom of obsessive-compulsive disorder (OCD).

Will I live longer?

Simply having, or using, a dedicated fitness tracker is unlikely to increase your life expectancy in itself. However, if your tracker leads to positive behavioural changes then, yes, you could.

With only 16% of the differences in lifespans due to genetics, additional factors such as lifestyle can have a significant impact on longevity. Key drivers of longevity include:

- Smoking status – there's a life expectancy gap of 10+ years between smokers and non-smokers;
- Diet – poor diet is claimed to be responsible globally for more deaths and any other risk factor (including smoking status); and
- Physical activity – all-cause mortality is estimated to be around a third lower in physically active individuals compared to inactive individuals.

Using wearable technology to monitor these drivers of longevity, increases self-awareness and could, in turn, lead to positive behavioural changes. This might explain why insurance companies are encouraging policyholders to use fitness trackers to lower their life and health insurance premiums.

What does the future hold?

With the likes of Apple, Amazon, Microsoft, Alphabet (parent company of Google) and Garmin all big-name players in wearable technology stocks, we can expect more sophisticated devices and more innovative uses of wearable technology in the future. For example, Standford University partnered with Apple in a study of how accurate the Apple Watch was in detecting atrial fibrillation. The results showed an impressive 84% match to a full ECG. Could this be a sign of things to come in the field of medical research? Apple certainly think so – they've launched the Apple Research app in the US to make the process even easier. The app allows users to easily enrol in a range of health studies e.g. heart health, women's health and hearing. As companies continue to add more and more measurements to wearable technology the scope for future health studies is enormous.

With all these big players joining this growing market, wearable tech has the potential to significantly shape the outlook for future health and longevity. Monitoring this developing market could be an important part of understanding potential trends in future health and longevity outcomes; pension plans and insurers should pay particular attention to the demographics of people most likely to be affected.

The key questions to consider are:

- What will the data obtained from wearable technology be used for? Perhaps to reduce insurance premiums, to cross sell products, to influence government policy or to develop future services?
- Will wearable technology be used in primary healthcare? For example, prescribing these sophisticated devices to those at greater risk. Could this improve longevity?
- Will employers use wearable technology to change behaviours, and improve health, of its employees?
- As wearable technology firms gain more data, could it help pension plans determine how long their pensioners will live?

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