



WEARABLES

BY **MARK FARRELL**

The goal of insurance, from the consumer's point of view, is to protect us when things go badly wrong.

If we get sick, die unexpectedly or if we get into a car accident then insurance comes to the rescue via a contingent payment made from the pooled policyholder premiums. But what if insurance could go beyond protection and also play a key role in the prevention of risks?

The use of novel data sources and analytics has the potential to revolutionise the insurance industry, particularly in relation to product pricing, underwriting and customer engagement.

Wearable technology is one new innovative way in which insurance companies can now change policyholder behaviour in a positive manner and bring about significant lasting change that results in the prevention of various health and mortality risks. >

TELEMATICS FOR THE HEALTH INSURANCE INDUSTRY

In many ways wearables usage in insurance can be viewed as being analogous to the use of telematics which has been used in car insurance for quite some time. Telematics devices monitor the behaviour of drivers by measuring information such as:

- mileage
- location
- time of day
- driving frequency
- behaviour around hazardous zones
- speed
- rates of acceleration
- braking habits

This information provides insurance companies with valuable risk-based information allowing a more precise premium to be calculated. Telematics devices are particularly attractive to policyholders who would previously have been priced as 'high risk' (e.g. young drivers), but who now have an opportunity to show that their risk profile is actually very low, despite the conventional rating factors used in the pricing, and hence should have a low premium applied.

Similarly, wearables can provide a range of different metrics on our state of health and in relation to factors that are known to impact health and mortality.

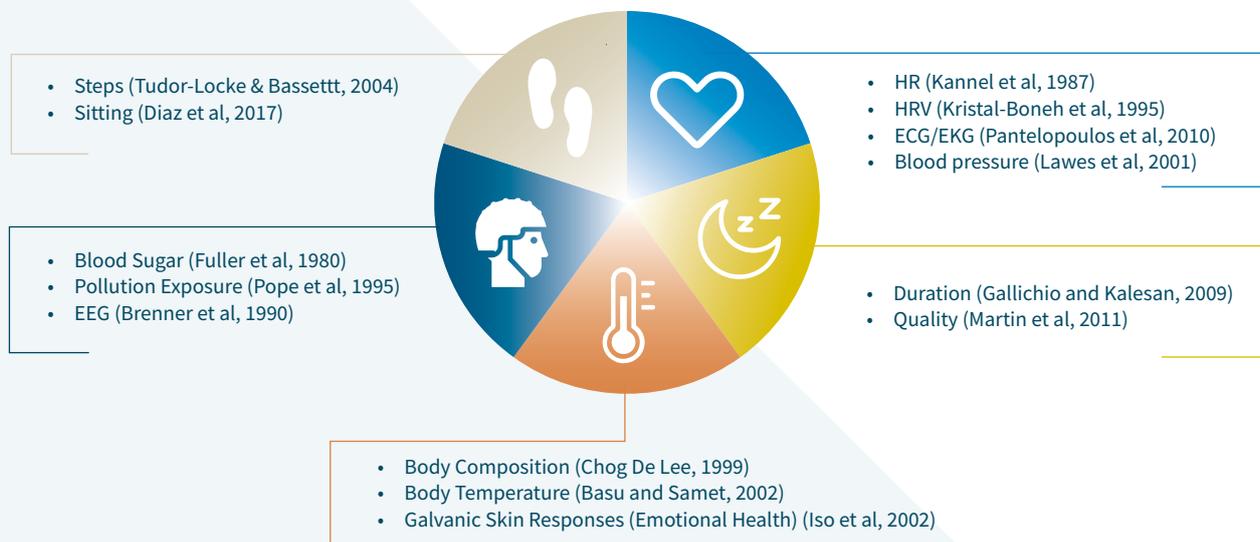
Some of these metrics include:

- Step Count
- Sitting Activity
- Heart Rate (resting and during activity)
- Heart Rate Variability
- Blood Sugar
- Pollution exposure
- Body Temperature
- Galvanic Skin Responses (Measuring Emotional Health)
- Sleep Quantity and Quality

Although wearables so far have typically been used as a marketing and engagement tool within insurance, our prior research (McCrea and Farrell, 2018) shows the potential for wearable data to be used for insurance pricing in the future. Our findings help to demonstrate the predictive capabilities of potential new rating factors, measured via wearables, which could feasibly be incorporated into actuarial insurance pricing models. The model also provides an initial step for insurers to begin to consider the incorporation of continuous wearable data into current risk models.

FIGURE 1: HEALTH METRICS AVAILABLE FROM WEARABLE DEVICES AND ASSOCIATED RESEARCH ON HEALTH IMPLICATIONS

Source: ProActuary.com



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INCENTIVES DRIVING BEHAVIOUR CHANGE

One particular interesting area of the use of wearables in insurance is the potential to drive healthy behaviour and to develop habits that prevent future health related risks from materialising.

Charlie Munger has a famous quote where he states: 'Show me the incentive, and I will show you the outcome.' The research seems to concur as behavioural psychology and economics research confirms that more immediate feedback results in a higher probability of behavioural adjustment of an individual (Volpp et al, 2011). The early evidence (see NICE guidance) on the use of wearable technology is that it is an effective tool in changing individual attitudes, behaviour and ownership of health problems to the net benefit of the subject's health (Cadmus-Bertram et al, 2015).

Discovery, a South African multi-national insurance group, and one of the key insurance pioneers with wearables usage in insurance, found that the behaviour changes persisted over time. Their research on 422,633 participants studied over 3 years found that the positive associations between the benefit and physical activity persist over at least the 24-month repayment period of their wearable devices (Hafner et al, 2018).

WHERE DO WE GO FROM HERE?

As highlighted in my recent in depth ProActuary article on this subject, there are many challenges to overcome if wearables usage in insurance is to become widespread. Some of the key impediments to widespread adoption include ethical considerations, privacy concerns and technology.

However, the potential of wearables usage in insurance appears to be significant, providing actuaries with novel new data sources and the means to develop new innovative products in health and life insurance.

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