

New tool predicts your risk of death

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Credit: Peter Griffin/public domain

Researchers from Uppsala University have studied the risk of dying over the next five years. They have developed a unique health-risk calculator by using one of the world's largest study material, UK Biobank, containing data from nearly half a million people. The results are expected to have large areas of application both in the clinical setting, public health policy and in research.

'We show that, using a few simple questions, one can predict the risk of

dying within five years with greater reliability than in any other way we know today. We think our study and the associated risk calculator will become an important tool for a wide range of researchers, but also for doctors, decision-makers and the public,' says Erik Ingelsson, a professor at Uppsala University who headed the study that has now been published in *The Lancet*.

UK Biobank contains data on as many as 655 variables, collected from around half a million British people aged 40–70. Studies of the associations between one or a few risk factors and future [mortality risk](#) have been carried out previously in smaller studies, but none has been based on such extensive data material. Erik Ingelsson and his colleague Andrea Ganna at Karolinska Institute made a series of interesting discoveries:

1. The variables with the best capacity to predict the risk of dying were, surprisingly enough, not primarily biological measured values but self-rated factors, like self-reported health status or walking speed. The risk of dying in the next five years was, for example, 3.7 times higher for subjects with low than with normal walking speed; and the risk of dying was clearly elevated for those who did not possess a car, which is interpreted as being due to socioeconomic causes.
2. The variables that best predicted risk were not the same in men and women, and the reliability of the prediction was generally greater for men.
3. When healthy individuals only were studied, smoking was found to be the strongest predictor of death within five years.
4. The risk of dying from external causes, such as suicide or accidents (data on causes of death were also collected), was best predicted by means of socioeconomic and psychological factors.
5. Prediction was generally less reliable for older than for younger people.

The researchers proceeded by using a computer algorithm to pick out the combination of questionnaire items with the highest accuracy. The outcome was 13 questions for men and 11 for women, and on the basis of the replies to these questions a person's 'Ubbles age' can be calculated. If this is lower than the actual age, it means that the person's risk of dying is lower than the average for people of the same sex and age, and vice versa. The researchers have been working with web technicians and designers to develop a simple, user-friendly tool for visualizing all results, and enabling five-year mortality risk and Ubbles age to be calculated.

'We see a large number of people who may find this useful. Researchers can use it to arrive at hypotheses for follow-up studies, doctors for identifying high-risk patients, decision-makers for making the right health investments, and the public for learning more about health,' says the other author of the study, Andrea Ganna.

The authors emphasises, however, that the study shows only statistical associations, and underlines the fact that this is not a matter of whether the different variables cause death. One should also be careful to avoid drawing sweeping conclusions about individuals, since what the results show is average risk and prediction results like these are never deterministic. But the large scale of the study is important not least in the light of all the alarming reports about health risks based on studies of associations, which are usually too small to yield reliable information.

This tool can no doubt be useful for journalists in assessing the news value of a new piece of research, since it enables them to compare the results with a large set of data material. The hope is that small studies will thus be discarded from the news flow, instead of unnecessarily causing concern.

More information: Test yourself with the Ubbles (UK Longevity

Explorer) health tool: www.ubble.co.uk

Provided by Uppsala University

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