

## Theory

This is a 1-page guide to measuring perceived uncontrollable mortality risk (previously referred to as “extrinsic” mortality risk). For more details on the theory behind the measure and its relationship with health behaviour, see the following papers:

Nettle, D. (2010). Why Are There Social Gradients in Preventative Health Behavior? A Perspective from Behavioral Ecology. *PLoS ONE*, 5(10). [LINK](#)

Pepper, G. V., & Nettle, D. (2014). Perceived Extrinsic Mortality Risk and Reported Effort in Looking after Health: Testing a Behavioral Ecological Prediction. *Human Nature*, 25(3), 378–392. [LINK](#)

Pepper, G. V., & Nettle, D. (2014). Socioeconomic Disparities in Health Behaviour: An Evolutionary Perspective. In M. A. Gibson & D. W. Lawson (Eds.), *Applied Evolutionary Anthropology* (pp. 225–243). Springer New York. [LINK](#)

Brown, R. D., & Pepper, G. V. (2023, January 10). The Uncontrollable Mortality Risk Hypothesis of Health Behaviour: A Position Paper. [LINK](#)

## Questions

The measure requires responses two questions, in which we recommend replacing “X” with the average life expectancy for the population you’re studying. The questions should be presented with a scale/slider (0-100):

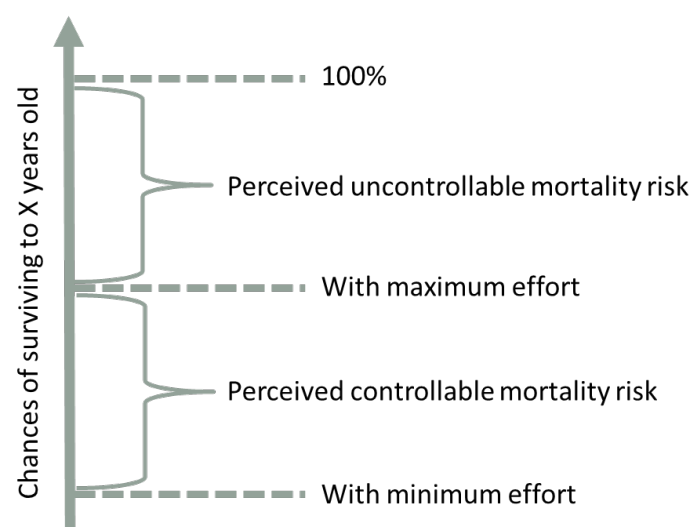
Q1. “If you made the maximum effort you could make to look after your health and ensure your safety, what do you think the chances would be that you would live to be X or more? 0 is ‘no chance’ and 100 is ‘definitely.’”

Q2. “If you made no effort at all to look after your health and ensure your safety, what do you think the chances would be that you would live to be X or more? Again, 0 is ‘no chance’ and 100 is ‘definitely.’”

## Calculation

**100 – Q1 response = perceived uncontrollable mortality risk**

**Q1 response – Q2 response = perceived controllable mortality risk**



**Fig 1.** Schematic of our measures of perceived uncontrollable and controllable mortality risk. The perceived uncontrollable risk is the difference between 100% and the perceived chances of surviving to age X with maximum effort in looking after health. It is the portion of perceived mortality risk that the individual believes they cannot reduce by their behaviour. The perceived intrinsic risk is the difference between the perceived chances of living to X with maximum effort in looking after health, and with minimum effort in looking after health. It is the portion of perceived mortality risk which the individual believes they can reduce via health effort.