

# The physics of human aging

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## **Abstract**

We're all going to die, and our collective mortality rate increases exponentially with age. As we get older, we also become more frail — which explains much of the increased mortality rate. Frailty involves multiple interacting health deficits, but can be quantified by the frailty index (FI). This has been done with traditional studies of human aging using cohorts of up to 10 000 individuals, and with much larger cohorts using electronic health records. We have developed a computational model of individual aging using complex networks that can describe the health and mortality of large populations. We are using extensions of this model to predict individual health and mortality from cross-sectional data, and from longitudinal data.