

SYNOPSIS

Thinking about life insurance through a genetic lens

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Key words: Genetics, Life insurance, Trauma Insurance, Product Design, Underwriting, Ethics, Risk genes, Genetic mutation, Genetic variant, Premium rating

Purpose of your paper: A summary of the state of genetics research, a vision of where it is headed in the near-term future, and ideas on how these advances could impact life insurance and its product design.

Synopsis:

“The Economist asks: How has DNA shaped the human race?¹” We ask “How will DNA shape life insurance?”

Modern-day genetic research has uncovered thousands of genetic mutations that are associated with greater risk of many common human diseases, such as cancer, diabetes, Alzheimer's and heart disease. These mutations are generally fairly common throughout the population, with all individuals carrying at least some of the 'high risk' genetic variants. With direct-to-consumer genetic testing now cheaply available, provided by companies such as 23andMe, this potentially provides more insightful health information, while at the same time increasing adverse selection risks for insurance companies. We ask:

- What implications do these discoveries actually have on our knowledge of diseases and our ability to predict risk? How strongly predictive are these genetic tests?
- Should we use these discoveries and tests as part of pricing and designing insurance? How can we do this optimally? Does this give rise to any ethical concerns?
- How can the product and pricing design process and governance procedures adequately allow for current and future ongoing genetic advances?

We tackle all of these questions in our presentation.

We present an overview, for a general audience, of the latest genetics research. We then explain the types of discoveries that are being made and put them in context to what was previously known. In particular, we assess the risk factors of these discoveries and consider how they aid our ability to actually predict risk for individuals. We also consider the importance of modifiable lifestyle factors such as diet and exercise, compared to genetic variants.

We then turn to the latest developments in research and present the current best thinking on how these are likely to affect insurance. We propose a few ideas on how insurers can think differently to respond to the challenges and also take advantage of new opportunities that are likely to arise.
