

## The Long-Term Impact of Health Conditions on Social Mobility Outcomes: A Modelling Study

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**Abstract :** Background: Intra-generational social mobility (ISM) can be defined as the extent to which individuals change their socio-economic position over a period of time or during their entire life course. The relationship between poor health and ISM is established. Therefore, quantifying the impact that potential health policies have on ISM now and into the future would provide evidence for how social inequality could be reduced. This paper takes the condition of overweight and obesity as an example and estimates the mean earning change per individual if the UK were to introduce policies to effectively reduce overweight and obesity. Methods: The HealthLumen individual-based model was used to estimate the impact of obesity on social mobility measures, such as earnings, occupation, and wealth. The HL tool models each individual's probability of experiencing downward ISM as a result of their overweight and obesity status. For example, one outcome of interest was the cumulative mean earning per person of implementing a policy which would reduce adult overweight and obesity by 1% each year between 2020 and 2030 in the UK. Results: Preliminary analysis showed that by reducing adult overweight and obesity by 1% each year between 2020 and 2030, the cumulative additional mean earnings would be ~1,000 Euro per adult by 2030. Additional analysis will include other social mobility indicators. Conclusions: These projections are important for illustrating the role of health in social mobility and for providing evidence for how health policy can make a difference to social mobility outcomes and, in turn, help to reduce inequality.

**Keywords :** modelling, social mobility, obesity, health

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