

# Childhood obesity could increase the risk of multiple sclerosis

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Childhood and adolescent obesity is projected to contribute up to 14 percent of overall risk of Multiple Sclerosis (MS) in 2035, according to research led by Queen Mary University of London.

Previous studies have estimated that 53 percent of MS risk is directly attributable to [environmental factors](#), and that up to one in five MS cases could be attributable to smoking. Smoking and high body mass index (BMI) are leading global drivers of many non-communicable diseases and cause significant premature morbidity and mortality.

The study, part-funded by Barts Charity and involving researchers from Queen Mary University of London, Barts Health NHS Trust and the University of Oxford, used published literature from the UK, U.S., Russia and Australia, to estimate and project the proportion of MS incidence that could be attributed to two [modifiable risk factors](#): smoking, and childhood and adolescent high BMI.

The study, published in the *International Journal of Epidemiology*, found that, in 2015, approximately 10 percent of the population risk of MS could be attributed to smoking, but that this will decrease in response to the drop in smoking rates. Conversely, the potential contribution of [early life](#) obesity to MS incidence is increasing, because an increasing proportion of the population in the countries studied are obese. Whilst the proportions vary between countries, the same patterns can be seen worldwide.

In 2015, early life high BMI was associated with a higher risk than smoking in the U.S. and Australia, and an equivalent level in the UK. The risk for high early life BMI is highest in the U.S. (11 percent) and estimated to increase to 14 percent by 2035. In the UK, high early life BMI will account for 10 percent of the population risk of MS in 2035.

If these observations are confirmed to be causal, the authors say that reducing the prevalence of these modifiable lifestyle risk factors is likely to have an important impact on MS incidence, as well as other [non-communicable diseases](#).

Corresponding author Dr. Ruth Dobson from Queen Mary University of London said: "Our findings highlight the potential to reduce the incidence of MS worldwide with targeted public health strategies. It is not only cancer and [heart disease](#) that are influenced by smoking and obesity—shifting the focus to diseases with onset in early adulthood, such as MS, may resonate more with younger people whose lifestyle choices will have an impact on their risk of future illness."

A limitation of the study is that it is an observational analysis of data, and has not determined the probability of direct causation of [smoking](#) or high BMI on incidence of MS.

**More information:** Julia Pakpoor et al, Estimated and projected burden of multiple sclerosis attributable to smoking and childhood and adolescent high body-mass index: a comparative risk assessment, *International Journal of Epidemiology* (2020). [DOI: 10.1093/ije/dyaa151](https://doi.org/10.1093/ije/dyaa151)

Provided by Queen Mary, University of London

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