Understanding risk factors for dementia: data sources

This interactive tool has been created to illustrate the effect of some known risk factors for dementia. The data is based on the current estimates of the number of people living with dementia in the UK\(^1\) and published evidence on the effect size of each risk factor. The numbers given are only an approximation due to the limitations of combining prevalence data and risk ratios to do these calculations.

Data sources:

**Age:** Age-specific prevalence rates are taken from the Dementia UK report\(^1\). Percentages were converted to dementia cases out of 100 people and rounded to the nearest person for ease of understanding.

**ApoE4 gene:** The hazard ratio for developing dementia with one or two copies of the ApoE4 gene was estimated for four independent cohorts in a paper published in 2017\(^2\). Relative to having no copies of the ApoE4 gene, the average hazard ratio across the four studies was 1.75 for one copy of ApoE4 and 3.07 for two copies of ApoE4. The risk of ApoE4 gene on Alzheimer's disease alone is expected to be higher but for ease of understanding we have used dementia throughout the tool.

**Smoking:** A systematic review conducted for the World Alzheimer's Report 2014\(^3\) found smokers had a 45% increased risk of dementia relative to people who had never smoked and that ex-smokers had the same risk as those who had never smoked.

**Diabetes:** A 2016 meta-analysis of studies involving 2.3 million people reported a risk ratio for dementia of 1.6 for people with type 2 diabetes\(^4\).

**Proximity to busy roads:** In a Canadian cohort study, the hazard ratio of dementia was 1.07 for people living less than 50m from a major road and 1.04 for those living within 50–100 m, relative to those living further than 300m away\(^5\).

Limitations of using prevalence data:

Incidence data should have been used to turn relative risks into changes in the number of people developing dementia for each risk factor. However, we found that people struggled with the concept of incidence rates. To make the tool as accessible as possible we opted to use prevalence data instead. This approach does introduce some errors, but because the baseline prevalence of dementia in the selected reference group (those aged 75-79) is low, we determined this approach would give an acceptable approximation of the numbers.

References:


