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## Body mass index and risk of dementia in two million people over two decades

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**Background:** Dementia and obesity are huge public health issues and it has been proposed that obesity in middle age may lead to dementia in old age.

**Objective:** To investigate the association between body mass index (BMI) and risk of dementia.

**Methods:** A retrospective cohort study using routine UK primary care data from the Clinical Practice Research Datalink. The study population included people aged 40 years or older with a first BMI recording between 1992 and 2007. Follow-up was from first eligible BMI reading until censoring at earliest of: practice's last data collection date, patient death/transfer out of practice or first record of dementia. People with a prior record of dementia were excluded. Incidence rates were calculated using Poisson regression.

**Results:** The study population included 1,958,191 people with mean baseline age of 56 years and median follow-up of 9.1 years. Dementia occurred in 45,507 people, a rate of 2.4 per 1,000 person years. Compared to normal weight people, those underweight (BMI < 20 kg/m<sup>2</sup>) had a 34% excess risk of dementia (95% CI 29%-38%). The dementia risk decreased for every increasing BMI category: from overweight (BMI 25-29.9 kg/m<sup>2</sup>) with 18% lower risk (95% CI 16%-20%) to the very obese (BMI > 40 kg/m<sup>2</sup>) with 29% lower risk (95% CI 22%-36%). These patterns persisted throughout two decades of follow-up, after adjustment for potential confounders and allowance for the J-shape of BMI with mortality.

**Conclusions:** Being underweight in middle and old age carries an increased risk of dementia over two decades. We contradict the hypothesis that obesity in middle age may increase the risk of dementia in old age. The reasons and public health consequences of these findings require further investigation.

### Biography

Nawab Qizilbash, MBCh, MRCP, BSc, MSc, DPhil (Oxon), was trained in Clinical Geriatrics and Epidemiology at Oxford University. He is the Head of Oxon Epidemiology Ltd., a scientific/operational full service provider of Pan-European observational studies and registries to the pharmaceutical industry, with offices in London and Madrid. He is also Honorary Senior Lecturer in Pharmaco Epidemiology, London School of Hygiene & Tropical Medicine and Member of the ENCePP Steering Group at the European Medicines Agency, London. Previously, he was Director of Epidemiology at GSK and Honorary Consultant Physician at the Radcliffe Infirmary, Oxford.

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