

Exposure to general anaesthesia could increase the risk of dementia in elderly by 35 percent

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Exposure to general anaesthesia increases the risk of dementia in the elderly by 35%, says new research presented at Euroanaesthesia, the annual congress of the European Society of Anaesthesiology (ESA). The research is by Dr Francois Sztark, INSERM and University of Bordeaux, France, and colleagues.

Postoperative [cognitive dysfunction](#), or POCD, could be associated with dementia several years later. POCD is a common complication in elderly patients after [major surgery](#). It has been proposed that there is an association between POCD and the development of dementia due to a common pathological mechanism through the amyloid β peptide. Several experimental studies suggest that some [anaesthetics](#) could promote inflammation of neural tissues leading to POCD and/or Alzheimer's disease (AD) precursors including β -[amyloid plaques](#) and neurofibrillary tangles. But it remains uncertain whether POCD can be a precursor of dementia.

In this new study, the researchers analysed the risk of dementia associated with anaesthesia within a prospective population-based cohort of elderly patients (aged 65 years and over). The team used data from the Three-City study, designed to assess the risk of dementia and [cognitive decline](#) due to [vascular risk factors](#). Between 1999 and 2001, the 3C study included 9294 community-dwelling French people aged 65 years and over in three French cities (Bordeaux, Dijon and Montpellier).

Participants aged 65 years and over were interviewed at baseline and subsequently 2, 4, 7 and 10 years after. Each examination included a complete cognitive evaluation with systematic screening of dementia. From the 2-year follow-up, 7008 non-demented participants were asked at each follow-up whether they have had a history of anaesthesia (general anaesthesia (GA) or local/locoregional anaesthesia (LRA)) since the last follow-up. The data were adjusted to take account of potential confounders such as [socioeconomic status](#) and comorbidities.

The mean age of participants was 75 years and 62% were women. At the 2-year follow-up, 33% of the participants (n=2309) reported an anaesthesia over the 2 previous years, with 19% (n=1333) reporting a GA and 14% (n=948) a LRA. A total of 632 (9%) participants developed dementia over the 8 subsequent years of follow-up, among them 284 probable AD and 228 possible AD, and the remaining 120 non-Alzheimer's dementia. The researchers found that demented patients were more likely to have received anaesthesia (37%) than non-demented patients (32%). This difference in anaesthesia was due to difference in numbers receiving general anaesthetics, with 22% of demented patients reporting a GA compared with 19% of non-demented patients. After adjustment, participants with at least one GA over the follow-up had a 35% increased risk of developing a dementia compared with participants without anaesthesia.

Dr Sztark concludes: "These results are in favour of an increased risk for dementia several years after [general anaesthesia](#). Recognition of POCD is essential in the perioperative management of elderly patients. A long-term follow-up of these patients should be planned."

More information: Avidan et al. J Alzheimers Dis 2011; 24: 201-16.
(2) André D et al. Ann Fr Anesth Reanim 2011; 30: 37-46.

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