

Smoking Cessation, Weight Change, and Risk of Dementia

Hui Chen, Jingjing Wang, Sirui Lai, Guoping Peng, Geng Zong, Changzheng Yuan, Benyan Luo

First Affiliated Hospital of Zhejiang University School of Medicine; Fudan University; Harvard T.H. Chan School of Public Health

① Introduction

Smoking cessation is universally prioritized for the prevention of cardiovascular disease and cancer, but **its impact on dementia** risk remains uncertain. We aimed to evaluate the associations of smoking cessation and **post-cessation weight gain** with long-term risk of dementia and cognitive trajectories.

② Study Design



Participants:

32,802 dementia-free adults from the U.S. Health and Retirement Study (1995–2020)



Exposures:

Smoking status and body weight assessed biennially.



Outcomes:

- Incident dementia identified using the Langa-Weir algorithm
- Cognitive function trajectories measured on a 27-point scale



Key limitations:

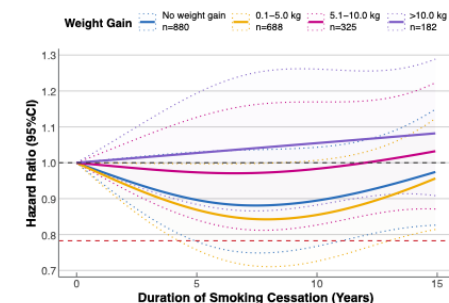
- Observational design – not establishing causal effects
- Self-reported smoking and weight data.

③ Findings

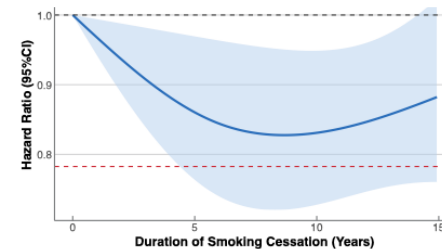
Compared with current smokers, individuals who **quit during follow-up** had a **lower dementia risk** after quitting (**Hazard Ratio: 0.84**).

Current smokers	Quitters, before baseline	Quitters, during follow-up	Never smokers
1 (Ref.)	0.79 (0.72-0.87)	0.84 (0.73-0.95)	0.75 (0.69-0.83)

Dementia risk **decreased with longer time since quitting**, and the risk approached those of never smokers and **plateaued at around 7 years post-cessation**.

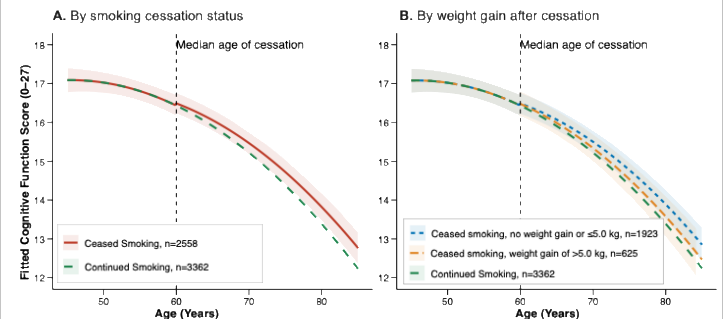


Cox proportional hazard model stratified by age (5-year groups) and study wave and adjusted for gender, marital status, highest education attainment, race, physical activity, BMI category, alcohol drinking status, and the prevalence of hypertension, diabetes, heart diseases, and stroke.



The benefits of cessation were largely **limited to participants with no or modest 2-year post-cessation weight gain** (≤ 5 kg). By contrast, the association of quitting accompanied by >10 kg weight gain was not statistically significant (1.33, 0.87 to 1.82).

Cessation was associated with **long-term slower cognitive decline** (0.19 pts/decade) but no transient cognitive change, especially among those with **minor weight gain** (0.23/decade).



④ Key takeaways

- Smoking cessation was associated with a **sustained lower dementia risk and slower cognitive decline**.
- Post-cessation weight gain** may attenuate these advantages, highlighting the need for weight management in cessation programs