

# Association Between Adverse Childhood Experiences And Dementia Risk, Neuroimaging And Cognitive Outcome: Mediation By Depression

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Higher adverse childhood experience was associated with increased dementia risk.  
ACEs were associated with lower grey matter volume, greater WMH volume and worse function across multiple cognitive domains.  
Current depressive symptoms partially mediated ACEs and dementia association, and recurrent depression contributed to selected neuroimaging and cognitive outcomes.

INTRODUCTION

**Adverse childhood experiences (ACEs)** refer to early-life exposure to abuse and neglect.

ACEs may increase dementia risk through depression-related pathways. Whether different depressive phenotypes mediate this link remains unclear.

We examined associations of ACEs with incident dementia, neuroimaging and cognition outcomes, and assessed mediation by depressive phenotypes

METHODS

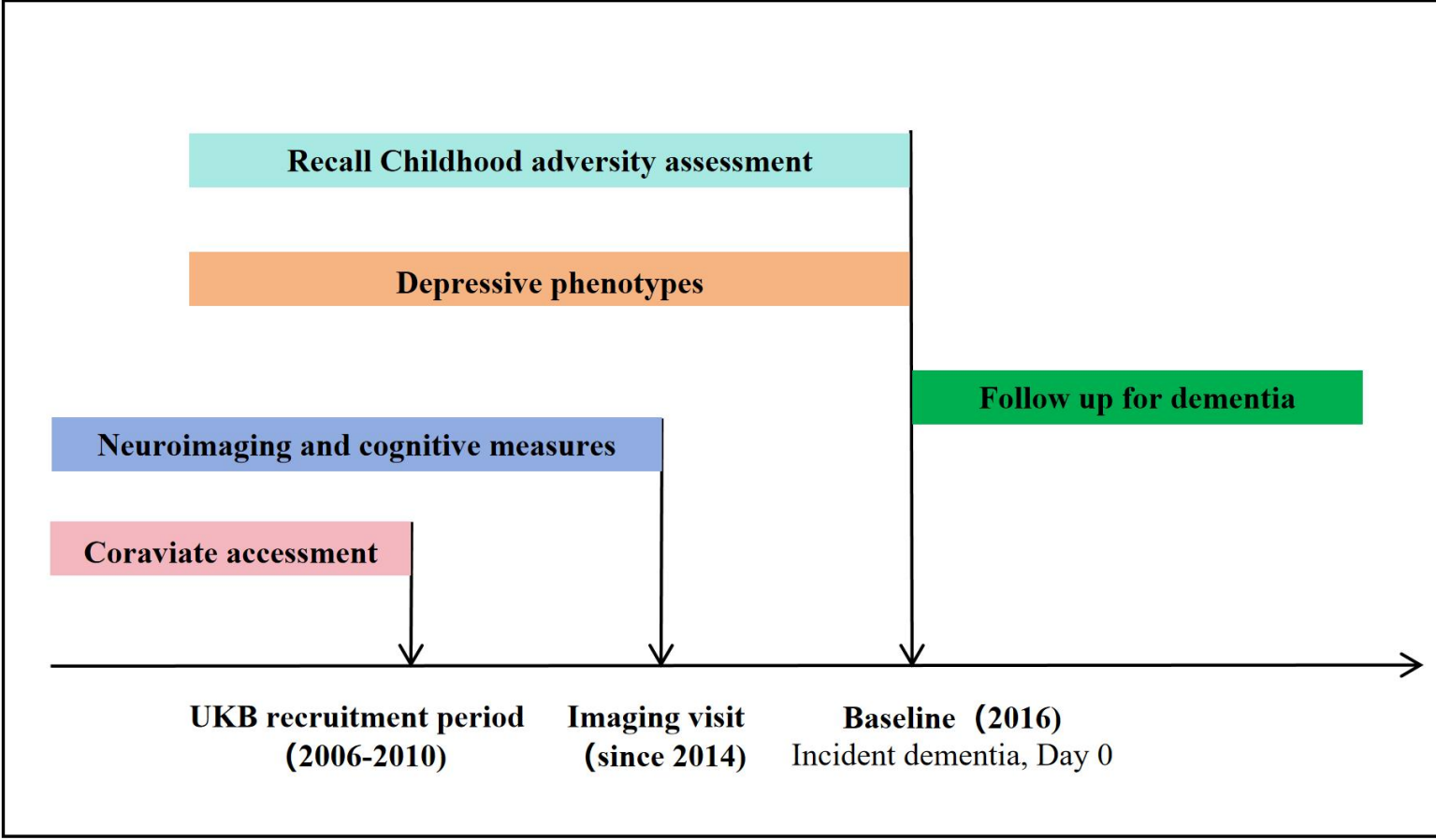
**Study population:**153,099 dementia-free from UKB.

**Exposure:** ACEs assessed by the Childhood Trauma Screener and summarized as a 0-5 score.

**Outcomes:** Incident dementia over a median 6.6-year follow-up; brain imaging and cognitive outcomes in **45,672** participants.

**Analysis:** Cox models for dementia risk; mediation analyses for depressive phenotypes.

Figure 1.Time frames for exposure, outcome and covariate



CONCLUSION

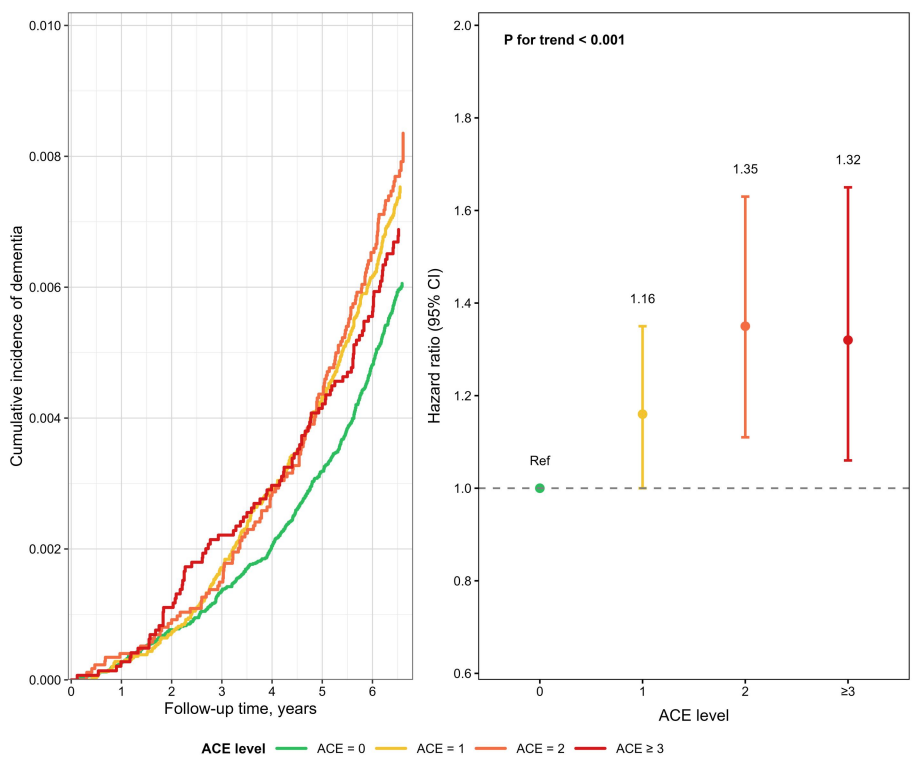
ACEs may increase dementia risk partly through current depressive symptoms.

Recurrent depression may contribute to specific neurocognitive alterations.

Single-episode depression showed no mediating role.

RESULTS

Figure 2. Incident all-cause dementia by ACE





Each 1-point increase in ACE score → **10% higher** risk of dementia.



Higher ACE burden was linked to **lower** grey matter volume, **greater** WMH volume, and **poorer** cognition.



Current depressive symptoms mediated **12.7%** ACE-related dementia risk.



Recurrent depression partly explained ACE-related higher WMH volume and poorer cognition (**7.8%–10.1%**).

Figure 3. Associations between the ACE and neuroimaging outcomes

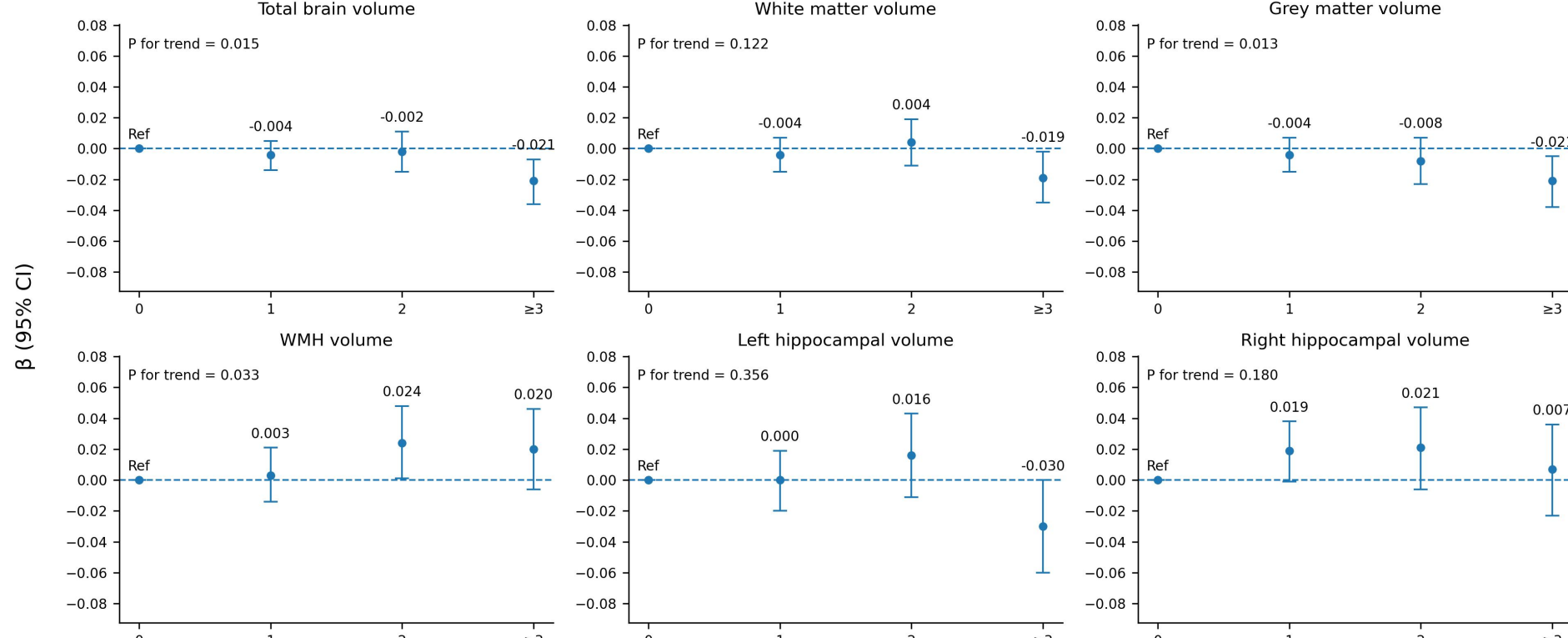


Figure 4. Associations between the ACE and cognitive outcomes

