

# From childhood adversity to dementia risk: the associations between adverse childhood experiences, anxiety, and later-life functional impairment in dementia-free community-dwelling older adults

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## Background

- **Adverse Childhood Experiences (ACEs)** – abuse, neglect, household dysfunction [1]
  - Disrupt critical periods of brain development [1]
  - Associated with greater anxiety [2] → impaired daily functioning in adulthood [3]
- **Functional Impairment** = core criterion for dementia diagnosis [4]
  - Mild changes = early marker of dementia risk [4]

## Objectives

- Examining the association between ACEs and later-life functional impairment
  - Whether anxious distress modifies this relationship
- Exploratory: 1) associations between ACEs and functional impairment domains; 2) associations between ACEs domains and functional impairment

## Methods

- **Sample:** Cross-sectional baseline data analysed from the **CAN-PROTECT study** [5]
  - **1513** community dwelling, dementia free adults, aged ≥50
- **Exposure:** Self-reported history of ACEs measured by the Childhood Trauma Screener (**CTS-5**; standardized total severity score, 0-20) [6]
- **Moderator:** Self-reported anxious distress measured by the Calgary Anxious-Distress Inventory (**CADI**; standardized total severity score, 0-15) [7]
- **Outcome:** Functional impairment measured by the Standard Assessment of Global Everyday Activities scale (**SAGEA**; total impairment score, 0-59) [8]
- **Modelling:** Negative binomial regression
  - **Interaction:** ACEs × Anxious distress
- **Covariates:** age, sex, ethnicity, years of education, neuropsychological test scores, depressive symptoms and functionally impairing comorbid conditions (e.g. stroke, physical injury, sensory loss)
- \*Coefficients were exponentiated for interpretation, reported as **count ratios (CR)**

**Adverse childhood experiences are associated with poorer daily function in older adults, a potential early marker of dementia risk.**

**Table 1.** Estimates of the adjusted negative binomial, ACEs\*anxious distress interaction term

| Effect                | Count Ratio (CR) | 95% Confidence Interval (CI) | p-value |
|-----------------------|------------------|------------------------------|---------|
| ACEs*anxious distress | 0.98             | 0.94–1.02                    | 0.186   |

\*Anxious distress was included as a covariate in the final model

Every **1-SD** increase in ACEs Score (controlling for covariates)

**6% higher SAGEA total score** (CR=1.06, 95%CI:1.00–1.12, **p=0.035**)

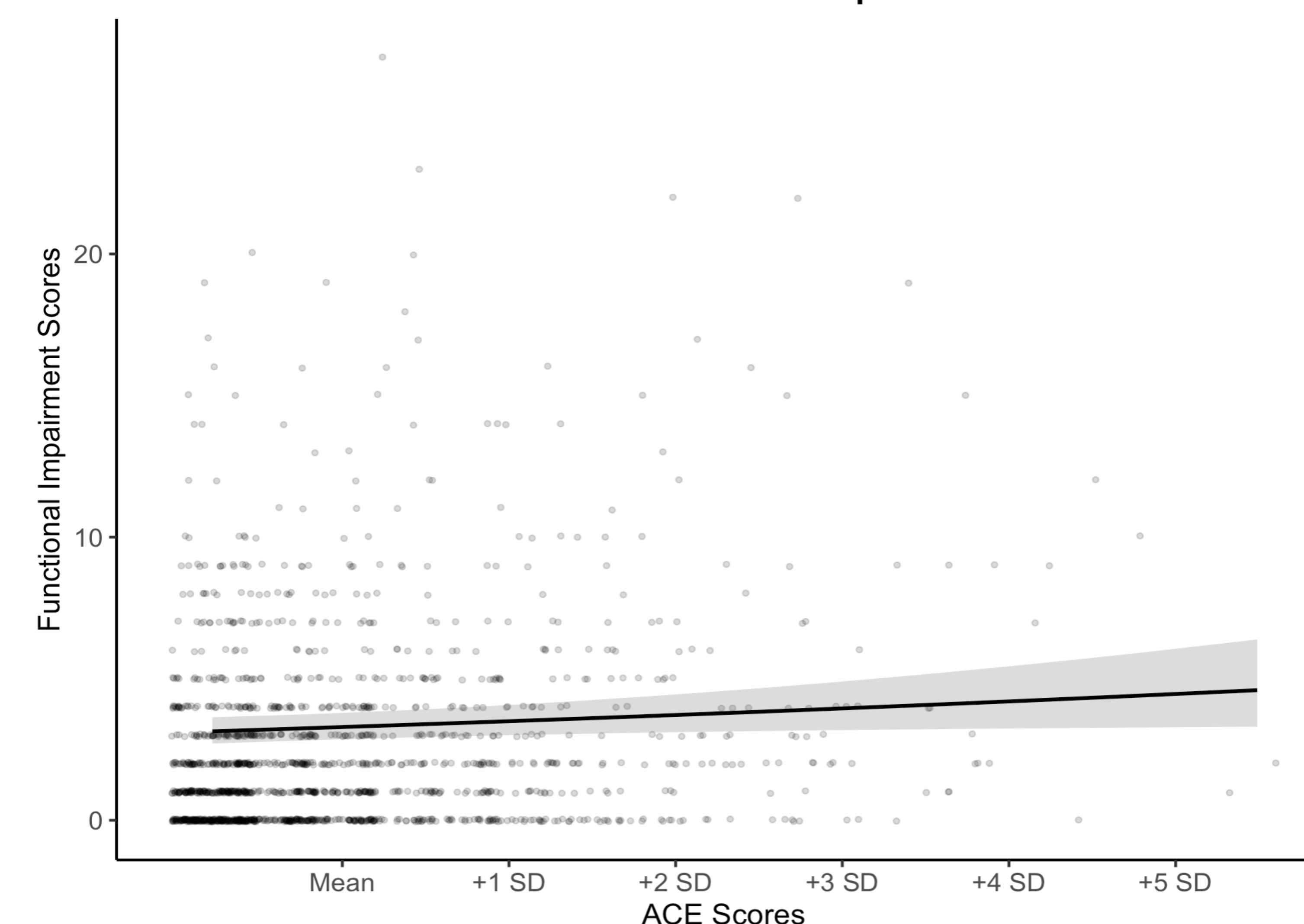
## Implications

Findings highlight the importance of identifying and supporting individuals affected by ACEs to potentially mitigate negative functional outcomes in later life.

## Results

**Figure 1:** Scatterplot representing the final adjusted negative binomial model. Points represent observed values; the line represents predicted functional impairment scores, and the shaded area represents the 95% confidence intervals.

**Association Between ACEs and Functional Impairment**



**Table 2:** Exploratory analyses of the ACEs-functional impairment association in each domain of functional impairment, respectively. ADL represents activities of daily living.

| Domain                | ACEs Count Ratio (CR) | 95% Confidence Intervals (CI) | Raw p-value  |
|-----------------------|-----------------------|-------------------------------|--------------|
| Cognitive ADL         | 1.07                  | 1.01–1.13                     | <b>0.014</b> |
| Applied Cognitive ADL | 1.03                  | 0.96–1.11                     | 0.331        |
| Instrumental ADL      | 1.10                  | 0.97–1.23                     | 0.115        |
| Basic ADL             | 0.97                  | 0.83–1.13                     | 0.669        |
| Mobility              | 1.09                  | 0.97–1.22                     | 0.128        |

**Table 3:** Exploratory analyses of the ACEs-functional impairment association in each item of the CTS-5, respectively.

| Item            | Item Count Ratio (CR) | 95% Confidence Interval (CI) | Raw p-value  |
|-----------------|-----------------------|------------------------------|--------------|
| Feeling loved   | 1.05                  | 0.99–1.11                    | 0.087        |
| Physical abuse  | 1.03                  | 0.96–1.10                    | 0.392        |
| Emotional abuse | 1.04                  | 0.98–1.10                    | 0.196        |
| Sexual abuse    | 1.08                  | 1.01–1.16                    | <b>0.024</b> |
| Neglect         | 1.04                  | 0.94–1.15                    | 0.428        |

## References & Additional Information

