Childhood cognitive ability was assessed using a set of standardised tests at age 15. Linear regression models estimated the association between childhood cognitive ability and log-transformed balance at each age. Adjustments were made for sex, childhood socioeconomic position, current physical activity, height and weight. Analyses were performed using STATA v14.1.

Results Men had better median balance times than women at age 53 [Men: 5 (interquartile range: 3–10); Women: 4 (3–7)], 60–64 [M: 3.7 (2.5–5.6); W: 3.3 (2.3–4.8)], and 69 [M: 3.0 (2.0–5.0); W: 2.9 (1.9–4.3)], but a decline in median balance times with age was observed in both sexes. In sex-adjusted and fully-adjusted models, higher childhood cognitive ability was associated with better balance times, although this association weakened with increasing age. A one standard deviation increase in childhood cognitive ability was associated with fully-adjusted mean differences in log-balance times (ln(s)) of 0.12 (95% CI: 0.08–0.15), 0.05 (95% CI: 0.02–0.09) and 0.04 (95% CI: 0.001–0.08) at ages 53, 60–64 and 69, respectively.

Conclusion Balance performance decreased with age, and was consistently lower in women than men. Higher childhood cognitive ability was associated with better balance performance at all ages but the strength of this association weakened over time. Further research should examine how the associations of other neurodevelopmental factors with balance change with age. Interventions earlier in life may help to maintain balance performance from midlife.

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Background Links between childhood residential mobility and pernicious trajectories through to adult maturity are incompletely understood. We therefore carried out a comprehensive investigation of the relationships between residential relocation during upbringing across a broad range of later adverse outcomes.

Methods Using interlinked registers, a national cohort of n=1,475,030 persons born in Demark during 1971–1997 was followed up from 15th birthday to a maximum age of early 40 s for risks of psychiatric morbidity, substance misuse, violent criminality, and natural and unnatural mortality. All cross-municipality residential moves during each age-year between birth and 15th birthday were measured. Survival analyses (© SAS Institute Inc.) was used to estimate incidence rate ratios (IRRs) associated with relocation during each age-year of upbringing. Parental socioeconomic status was delineated according to income, educational attainment and employment status.

Results Elevated risks were observed for virtually all outcomes examined, with excess risk seen among those who experienced multiple versus single relocations in a year. For attempted suicide, violent offending, substance misuse, personality disorders and unnatural deaths, we observed especially sharp spikes in risk linked with multiple relocations in a year during early/mid-adolescence. For example, diagnosis for substance misuse from age 15 was over six times more likely among adolescents who moved two or more times at age 14 than for their peers (IRR 6.35; 95% CI 5.82, 6.92). With violent offending and attempted suicide, our two primary outcomes, we found a risk gradient with increasing age at exposure among higher as well as lower socioeconomic groups. A consistent pattern of markedly elevated risk was not seen among all psychiatric illnesses examined; thus, eating disorders and obsessive compulsive disorder were not strongly linked with residential mobility during upbringing.

Conclusion As with other register-based studies, potential for residential confounding is a limitation of this investigation. Nonetheless, whatever causal mechanisms are implicated, frequent residential change is a strong marker for serious familial adversities. Heightened vigilance is therefore indicated for relocated youths. Health, educational and social services should be mindful of the potential psychosocial needs of adolescents who have recently moved homes or who have relocated more than once over a short period, and effective risk management will require close cooperation between multiple public agencies. When addressing the vulnerabilities of troubled young people, the possible harmful impact of residential relocation during childhood should be considered for individuals from affluent or middle class backgrounds, as well as those who grew up in deprived families.

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Background A substantial body of research has pointed to an association between socioeconomic position (SEP) and the prevalence of type 2 diabetes (T2D), whereby those in lower social classes are disproportionately affected by the disease. However few studies have examined the contribution of SEP trajectories across the life course to the development of T2D. We investigate the independent and synergistic effects of childhood and adult SEP, as well as the effect of social mobility, on T2D risk in later life.

Methods Cross-sectional data from The Irish Longitudinal Study of Ageing (TILDA) (n=4998), a nationally representative probability sample of adults aged 50 and older, were analysed. Prevalent diabetes was defined using subjective (self-reported doctors diagnosis) and objective data (medications usage and glycated haemoglobin testing). SEP was classified as a three level variable (low, intermediate, high) based on fathers occupation in childhood (origin SEP) and respondents primary occupation in adulthood (destination SEP). A 5-level social mobility variable was created from cross-classification of origin and destination SEP ('Stable High' 'Stable Intermediate', 'Stable Low' 'Upwardly Mobile' and 'Downwardly Mobile'). Logistic regression was employed to assess the relationship between SEP variables and T2D. All analyses were adjusted for age and age^2, and stratified by sex.