Economic hardship over twenty-two consecutive years of adult life and markers of early ageing

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Background:
The authors examined the associations between annual measures of economic hardship (EH) across 22 years of adulthood and objective measures of early ageing in a Danish late-middle aged population.

Methods:
A linkage of longitudinal register data from Statistics Denmark covering the period 1987-2008 and cross-sectional survey data from the Copenhagen Ageing and Midlife Biobank collected in 2009-11 (N = 5,575). EH was defined as < 60% of the National median equivalized household disposable income and two exposures were calculated: 1) a categorical measure of total number if years in EH, and 2) trajectories of the probability of EH being low, declining, rising or high. Early ageing outcomes included four measures of physical capability, three inflammatory markers and one cognitive test. Associations were analyzed using linear regression models adjusted for sex, age, cohort, education, baseline income and long-term parental unemployment/financial problems.

Results:
Four or more years in EH (reference = null years in EH) was related to poorer physical capability (chair rise: -1.49 counts/30 seconds [95% confidence interval (CI) -2.36, -0.61], hand grip strength: -1.22 kg [95% CI -2.38, -0.07], jump height: -1.67 cm [95% CI -2.44, -0.91] and balance: 18% [95% CI 9, 28]), poorer cognitive function (Intelligenz-Struktur-Test: -1.50 points [95% CI -2.89, -0.12]) and higher inflammatory levels (C-reactive protein: 22% [95% CI 4, 44], and Interleukin-6: 23% [95% CI 10, 39]). Comparing the four EH trajectories, people with a high vs. low probability of EH over time had poorer physical capability (chair rise: -1.70 counts/30 seconds [95% CI -3.38, -0.01], grip: -4.33 kg [95% CI -6.50, -2.16], jump: -1.68 cm [95% CI -3.12, -0.25], and balance: 31% [95% CI 12, 52]). No associations were observed with Tumor necrosis factor α.

Conclusions:
This study suggests that sustained EH across adulthood may lead to early ageing.

Key messages:
- Sustained economic hardship in adulthood may lead to early ageing.
- Being in economic hardship for a few years is not associated with early ageing.