

# Impact of Chronic Condition Development on Physical Function among Women from Mid- to Early Late-Life

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**Objective:** Chronic conditions are known to negatively impact physical function in late life, but little is known how the development of chronic conditions in midlife may impact physical function during the aging process. The purpose of this study was to quantify the change in perceived physical function in relation to the development of new chronic conditions as women transition from mid- to early late-life.

**Methods:** Participants were 2,283 initially midlife women from the Study of Women's Health Across the Nation (SWAN), a multicenter, multiethnic cohort study initially designed to understand health changes with the menopausal transition. Women were followed from an average age of  $50.0 \pm 2.7$  to  $64.0 \pm 3.7$  years in this analysis. Physical function was assessed using the Physical Functioning subscale of the Short Form Health Survey (SF-36). Scores range from 0-100 with higher scores indicating better physical function. We included 8 chronic conditions known to be associated with worse physical function among older adults: osteoarthritis, diabetes, stroke, hypertension, heart disease, cancer, osteoporosis, and depression, which were reported at each follow-up visit. Repeated-measures Poisson models estimated longitudinal change (expressed as percent difference) in physical function by number of chronic conditions. Change-points modeled physical function change coincident with the development of a new condition. Models were adjusted for relevant covariates, including age, race/ethnicity, education, marital status, financial strain, menopausal status, self-rated health, body mass index, smoking status, physical activity, bodily pain, fracture history, and cognitive function.

**Results:** Chronic conditions—both prevalent and incident—were common overall. Nearly half of the women had at least one baseline chronic condition and developed at least one more during follow-up ( $N=1,087$ ; 47.6% of sample). Only 66 women (7.3% of the sample) had no baseline conditions and remained free of chronic conditions throughout the study; while 513 women (22.5%) had no baseline chronic conditions and developed at least one during follow-up; and 517 (22.7%) had at least one baseline chronic condition but never developed another. At baseline, each additional chronic condition was associated with 4.0% worse initial physical function and faster annual physical function decline ( $-0.20\%$  additional decline year,  $p < 0.05$ ). Women with more baseline chronic conditions had a greater drop in physical function with a newly developed chronic condition ( $-1.90\%$  lower physical function per baseline condition when a new condition was identified); and annual decline when developing a new condition accelerated by  $-0.33\%$ /year per baseline condition.

**Conclusion:** Changes in physical function evident from mid- to early late-life with the development of a new chronic condition, and these changes were even more profound among women with existing chronic conditions. Preventing or delaying chronic disease progression in midlife may improve physical function trajectories into late life.