

## **The association between geriatric syndromes and survival.**

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**OBJECTIVES:** To ascertain the effect on survival of eight common geriatric syndromes (multiple comorbidities, cognitive impairment, frailty, disability, sarcopenia, malnutrition, homeostenosis, and chronic inflammation), identified by an expert panel of academic geriatricians.

**DESIGN:** A systematic literature review sought studies from a variety of sources to compare survival and life expectancy of individuals with geriatric syndromes with those of the general population.

**SETTING:** Studies used reflected the general population.

**PARTICIPANTS:** Community-dwelling persons aged 65 and older.

**MEASUREMENTS:** Eight geriatric syndromes (multiple definitions) and survival.

**RESULTS:** Two thousand three hundred seventy-four publications were retrieved, and 509 publications of 123 studies were included. Seven geriatric syndromes (multiple comorbidities, cognitive impairment, frailty, disability, malnutrition, impaired homeostasis, and chronic inflammation) were associated with poor survival. In each case, the prevalence of a syndrome was negatively associated with mortality. Malnutrition and impaired homeostasis exerted twice the influence of factors such as multiple comorbidities and frailty. From age 65 to 74, only those who are very ill or frail (e.g., impaired homeostasis, low body mass index, or advanced dementia) have a higher risk of mortality than average older adults. In the old-old, particularly aged 90 and older, the added value of predicting survival beyond 1 year is minimal.

**CONCLUSION:** Geriatric syndrome information is helpful to understanding survival for younger old persons but provides little information about survival for the very old. Complex survival models add comparatively little benefit to more simply measured and calculated models.

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**Geriatric syndromes: clinical, research, and policy implications of a core geriatric concept.**

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**Source**

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**Abstract**

**Geriatricians have embraced the term "geriatric syndrome," using it extensively to highlight the unique features of common health conditions in older people.**

**Geriatric syndromes, such as delirium, falls, incontinence, and frailty, are highly prevalent, multifactorial, and associated with substantial morbidity and poor outcomes. Nevertheless, this central geriatric concept has remained poorly defined.**

**Based on a review of the literature, four shared risk factors-older age, baseline cognitive impairment, baseline functional impairment, and impaired mobility-were identified across five common geriatric syndromes (pressure ulcers, incontinence, falls, functional decline, and delirium). Understanding basic mechanisms involved in geriatric syndromes will be critical to advancing research and developing targeted therapeutic options, although given the complexity of these multifactorial conditions, attempts to define relevant mechanisms will need to incorporate more-complex models, including a focus on synergistic interactions between different risk factors**

**Table 1. Risk Factors for Pressure Ulcers Based on a Systematic Literature Review**

Reference	Age*	Length of Stay	Incontinence	Impaired Mobility*	Low Weight	Nutrition	Diabetes Mellitus	Cognitive Impairment*†	Functional Impairment*	Other
13				X				X		Previous pressure ulcers
14	X	X		X				X		Cardiovascular disease or sepsis
15		X				X	X			Anemia
16	X		X	X				X		
17	X				X	X			X	Female
18	X	X								Surgery
19				X		X		X		Male, moisture, friction
20			X	X	X					White, fecal incontinence, admitted from hospital
21	X			X	X	X			X	Male, poor physical condition
22	X					X	X	X		Medical conditions
23	X			X		X				Emergent admission
24				X	X					Nonblanchable erythema, dry skin, lymphopenia
25	X			X		X		X		Hypotension, fever

*Note:* Literature review from January 1990 through December 2005.

\* Shared risk factors across geriatric syndromes.

† Includes decreased sensory perception.

## **Geriatric syndromes and incident disability in older women: results from the women's health initiative observational study.**

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**OBJECTIVES:** To determine how the number of geriatric syndromes is associated with incident disability in community-based populations of older adults.

**DESIGN:** Longitudinal analysis from the Women's Health Initiative Observational Study (WHI-OS).

**SETTING:** Community.

**PARTICIPANTS:** Twenty-nine thousand five hundred forty-four women aged 65 and older enrolled in the WHI-OS and free of disability in activities of daily living (ADLs) at baseline.

**MEASUREMENTS:** Geriatric syndromes (high depressive symptoms, dizziness, falls, hearing or visual impairment, osteoporosis, polypharmacy, syncope, sleep disturbance, and urinary incontinence) were self-reported at baseline and 3-year follow-up. Disability was defined as dependence in any ADL and was assessed at baseline and follow-up. Chronic diseases were measured according to a modified Charlson Index.

**RESULTS:** Geriatric syndromes were common in this population of women; 76.3% had at least one syndrome at baseline. Greater number of geriatric syndromes at baseline was significantly associated with greater risk of incident ADL disability at follow-up ( $P \leq .001$ ). Adjusted risk ratios were 1.21 (95% confidence interval (CI) = 0.78-1.87) for a single syndrome and 6.64 (95% CI = 4.15-10.62) for five or more syndromes compared with no syndromes. These results were only slightly attenuated after adjustment for number of chronic diseases or pain.

**CONCLUSION:** Geriatric syndromes are significantly associated with onset of disability in older women; this association is not simply a result of chronic disease or pain. A better understanding of how these conditions contribute to disablement is needed. Geriatric syndrome assessment should be considered along with chronic disease management in the prevention of disability in older women.