

## Does Depression Cause Physical Disability?

*Penninx BW, Leveille S, Ferrucci L, van Eijk JT, Guralnik JM. Exploring the effect of depression on physical disability: longitudinal evidence from the Established Populations for Epidemiologic Studies of the Elderly. Am J Public Health 1999;89:1346-52.*

### Study Overview

**Objective.** To examine the effect of depression on the incidence of physical disability and the role of confounding and explanatory variables in this relationship.

**Design.** Prospective cohort study.

**Setting and participants.** 6247 persons aged 65 years and older and free of disability at baseline. Subjects were participating in the Established Populations for Epidemiologic Studies of the Elderly and resided in East Boston, Massachusetts ( $n = 2254$ ), New Haven, Connecticut ( $n = 1713$ ), and 2 counties in Iowa ( $n = 2280$ ).

**Main outcome measures.** Incident (ie, occurring for the first time) disability in activities of daily living (ADL) and in mobility [1], measured annually over 6 years following baseline and adjusted for sociodemographic, social, and behavioral characteristics and baseline chronic conditions of participants. Baseline depression was assessed by the Center for Epidemiological Studies Depression scale (CES-D) [2].

**Main results.** Compared with the 5751 nondepressed subjects, the 496 depressed participants had a relative risk of 1.67 (95% confidence interval [CI], 1.44 to 1.95) for incident disability in ADL and a relative risk of 1.73 (95% CI, 1.54 to 1.94) for disability in mobility. Adjustments for sociodemographic characteristics and baseline chronic conditions reduced the risks to 1.39 (95% CI, 1.18 to 1.63) and 1.45 (95% CI, 1.29 to 1.93). Several chronic conditions (most notably arthritis and angina), less physical activity, and fewer social contacts further explained part of the increased risk for disability among depressed persons.

### Conclusion

Depression in initially nondisabled older persons may significantly increase the risk for incident disability in ADL and mobility. This finding was consistent across population subgroups.

### Commentary

Twelve percent to 20% of older persons residing in the community may exhibit symptoms of depression, and cross-

sectional studies have shown that depressed older people have higher levels of physical disability than their non-depressed counterparts [3,4]. Previous longitudinal studies also found an association between depression and physical disability but were unable to determine whether the depression led to the disability or the disability led to the depression. To better understand this association, Penninx and colleagues excluded subjects with baseline disability. Theirs is the first large-scale longitudinal study to suggest definitively that depression causes disability. Furthermore, the authors' use of a longitudinal design and thorough methods (multiple assessments of disability were made over time and a wide variety of potential explanatory and confounding variables were examined) strengthen this finding.

### Applications for Clinical Practice

Because depression in older patients can lead to increased levels of physical disability, physicians must be certain to properly evaluate and follow up with any older patients who exhibit symptoms of depression.

### References

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3. Broadhead WE, Blazer DG, George LK, Tse CK. Depression, disability days, and days lost from work in a prospective epidemiologic survey. *JAMA* 1990;264:2524-8.
4. Wells KB, Stewart A, Hays RD, Burnam MA, Rogers W, Daniels M, et al. The functioning and well-being of depressed patients. Results from the Medical Outcomes Study. *JAMA* 1989;262:914-9.

*"Outcomes Research in Review" is edited by Chris L. Pashos, PhD, Vice President and Executive Director of Pharmacoeconomics and Outcomes Research, Abt Associates Clinical Trials, Cambridge, MA, and Associate Editor, Health Policy, Journal of Clinical Outcomes Management. Dr. Pashos selects, summarizes, and provides the commentary on the studies that appear in this section.*

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