

# Disability worsening among persons with multiple sclerosis and depression

## A Swedish cohort study

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### Study objective and summary result

This study examined whether comorbid depression is associated with the risk of worsening disability levels in patients with multiple sclerosis (MS), and it found that patients with MS and medically-recognized depression progress significantly faster than patients with MS without depression.

### What is known and what this paper adds

Comorbid depression in patients with MS is associated with increased risks of suicide, greater socioeconomic burdens, and high subsequent disability in women over a 10 years follow-up. This investigation shows that there is a significant impact of depression on risk of disability worsening in both males and females.

### Participants and setting

The investigators used data from the Swedish MS Register to retrospectively construct a cohort containing all 5,875 patients registered between 2001 and 2014.

### Design, size, and duration

The data for these analyses were obtained from the Swedish MS Register, the Swedish National Patient Register, and the Prescribed Drug Register. The investigators used diagnostic codes to identify patients with comorbid depression or a prescription for antidepressant. Disability progression was assessed with the EDSS (Expanded Disability Status Scale), on which higher scores indicate greater disability levels, and the milestones of interest were EDSS scores of 3.0, 4.0, and 6.0. Cox regression models were used for data analysis.

### Primary outcome measures

The primary outcomes were associations between comorbid depression and disability progression

### Main results and the role of chance

Comorbid depression was detected for 502 patients (8.5%). Comorbid depression was associated with an increased risk of reaching each disability milestone.

**Table** Associations between comorbid depression and disability milestones

EDSS score milestone	Hazard ratio (95% CI) for reaching milestone in patients with comorbid depression vs patients without comorbid depression
3.0	1.50 (1.20–1.87)
4.0	1.79 (1.40–2.29)
6.0	1.89 (1.38–2.57)
EDSS score milestone	Hazard ratio (95% CI) for reaching milestone in patients exposed to antidepressants vs patients not exposed to antidepressants
3.0	1.37 (1.18–1.60)
4.0	1.93 (1.61–2.31)
6.0	1.86 (1.45–2.40)

### Bias, confounding, and other reasons for caution

The investigators lacked access to primary care data, so some cases of relatively mild depression were probably missed. Depression severities could not be assessed with the available data.

### Generalizability to other populations

The present study's reliance on data from Sweden may limit the generalizability of the results to dissimilar countries.

### Study funding/potential competing interests

This study was funded by the Swedish Research Council and the Swedish Brain Foundation. Some authors report receiving lecture honoraria, consulting fees, travel grants, committee appointments, and funding from healthcare companies; receiving funding from the European Committee for Treatment and Research in Multiple Sclerosis, the Canadian government, and the Karolinska Institute; and serving as investigators on industry-sponsored studies. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

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