

# Statins do not increase risk of polyneuropathy

## A case-control study and literature review

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### Study objective and summary result

This study examined whether statin usage is associated with chronic polyneuropathy, and it found that statin usage does not increase the risk of chronic polyneuropathy.

### Classification of evidence

Class III.

### What is known and what this paper adds

Past investigations into whether statin usage is associated with chronic polyneuropathy have reported conflicting results. This study provides evidence against an association.

### Participants and setting

This study included 333 patients with cryptogenic axonal polyneuropathy (CAP; 71% male; mean age, 66 ± 9 years) who were recruited to a prospective study through the University Medical Center Utrecht between October 2008 and July 2012. This study also included 283 healthy controls (HCs; 63% male; mean age, 64 ± 9 years) who participated in a prospective study of amyotrophic lateral sclerosis (ALS) in the Netherlands. In addition, they reviewed 13 previous studies (total participants, 409,627) that examined whether statin usage is associated with chronic polyneuropathy.

### Design, size, and duration

The patients with CAP and the HCs completed questionnaires that asked about statin usage; only usage before onset of symptoms was included. A binary logistic regression model was used to analyze the relationship between statin usage and CAP, odds ratios were adjusted for possible confounders such as age, sex, cardiovascular history and metabolic syndrome. This study also examined the results of analogous analyses in the 13 previous studies.

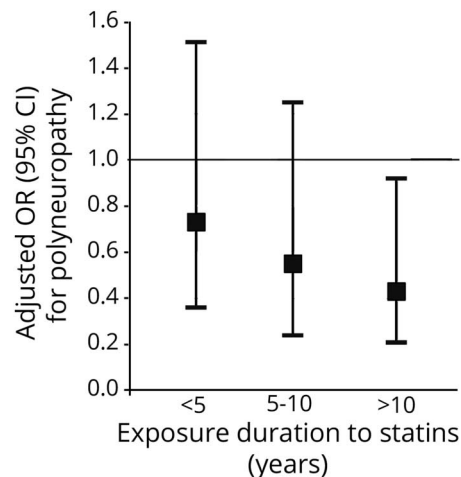
### Primary outcome measures

The primary outcome was the comparison of this study's CAP and HC groups in terms of statin usage prior to symptom onset.

### Main results and the role of chance

Statin usage was not associated with an increased risk of CAP in the case-control analysis (adjusted odds ratio, 0.56; 95% confidence interval, 0.34–0.95;  $p = 0.03$ ). Previous studies reported inconsistent results (odds ratio range, 0.66–14.2).

**Figure** Associations between statin usage and CAP given different durations of statin therapy



CI = confidence interval; OR = odds ratio.

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

There is a risk of recall bias for date of symptom onset and starting date of statins for the case-control study. Studies included in the literature review often did not correct for important potential confounders, did not exclude or correct for all possible causes of polyneuropathy, or did not adequately establish whether exposure to statins was prior to symptom onset.

### Generalizability to other populations

This study's reliance on case-control data from the Netherlands may limit the generalizability of the results.

### Study funding/potential competing interests

This study was funded by Prinses Beatrix Spierfonds. Dr. van den Berg reports receiving advisory committee appointments and educational grants from various healthcare companies, serving on various journals' editorial boards, and receiving research support from the Netherlands ALS Foundation and the EU and Dutch governments. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The authors of the full-length article and the journal editors edited and approved the final version.

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