

# Medical Update Memo

July 28, 2009

## Study Adds Evidence that Smoking Worsens MS, and Quitting May Help

### Summary

Harvard researchers report results of a new study comparing 1465 smokers, ex-smokers and never-smokers, all of whom had multiple sclerosis. After tracking the group for an average of over three years, the investigators found that MS disability progressed more quickly in smokers, and this difference was also noted in MRI measures of disease activity. For several measures, ex-smokers did not differ substantially from never-smokers, suggesting that quitting may delay MS progression. **Arch Neurol. 2009 Jul;66(7):858-64**

### Details

The Harvard team set out to evaluate whether MS progresses faster in smokers than in non-smokers by taking smoking histories and tracking disease progression using several disease severity scales (EDSS and MSSS) and MRI measures of brain lesions (damaged areas) and brain atrophy (shrinkage). The study involved 1465 people who visited the Partners MS Center at Brigham and Women's Hospital in Boston and were tracked for an average of over three years. At baseline, 257 were current smokers, 428 were ex-smokers and 780 were never-smokers.

The team evaluated whether smoking history was related to MS severity at the beginning of the study, then looked at whether baseline smoking history related to future disease progression over the course of the study. At baseline, they found that current smokers had significantly worse clinical disability scores than ex-smokers or never-smokers, and that smokers were more likely to have a primary progressive course of MS (in which disease shows progressive worsening from onset, without the ups and downs experienced by those with the relapsing-remitting course). Smokers also had more MRI-detected indicators of disease severity at baseline than ex-smokers or never-smokers, including lower brain parenchymal fractions, a measure of brain volume that indicates atrophy.

The investigators asked the question of whether smoking contributed to the conversion from relapsing-remitting course of MS to the secondary-progressive course (in which disability steadily worsens with few flare-ups or remissions). Tracking a sub-group of 891 participants (154 smokers, 237 ex-smokers, 500 never-smokers) for an average of over three years, the investigators found that converting from relapsing-remitting to secondary progressive MS occurred faster in smokers than in ex- or never-smokers. They did not find a significant difference in the likelihood of smokers to show clinical progression of disability over two years, but did find that smokers were more likely to show increased volumes of brain lesions and greater decrease in brain parenchymal fraction than ex-smokers or never-smokers.

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**With information from the National MS Society (USA)**

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