

## JOURNAL OF NEUROLOGY NEUROSURGERY & PSYCHIATRY

### High daily coffee consumption may lower MS risk

*Caffeine's neuroprotective and anti-inflammatory properties may explain link*

Drinking a lot of coffee every day—more than 900 ml (30 fluid ounces) or around six cups—is linked to a reduced risk of multiple sclerosis (MS), finds research published online in the *Journal of Neurology Neurosurgery & Psychiatry*.

Caffeine, a central nervous system stimulant, has neuroprotective properties and can suppress the production of chemicals involved in the inflammatory response, which may explain the association found, suggest the researchers.

While it remains to be seen whether coffee drinking could ward off the development of MS, cautions a linked editorial, the findings add to the growing body of evidence indicating that coffee may be good for our health, it suggests.

The researchers base their findings on two representative population studies—one in Sweden comprising 1620 adults with MS and a comparison group of 2788, matched for age and sex—and a US study comprising 1159 people with MS and 1172 healthy people.

In both studies, participants were quizzed about their coffee drinking. In the Swedish study participants were asked to quantify how many cups they usually drank every day, and across different time periods, starting with consumption when they were aged 15-19 until they were 40+.

In the US study, participants were asked about their maximum daily consumption, and those who said they drank one or more servings (cups) were asked to recall how old they were when they started drinking coffee regularly.

The researchers then used this information to estimate coffee consumption at and before the start of MS symptoms in those with the condition and compared this tally with that in the healthy groups.

The results showed that the risk of MS was consistently higher among those drinking fewer cups of coffee every day in both studies, even after taking account of potentially important influential factors, such as smoking, and weight during the teenage years.

In the Swedish study, coffee consumption was associated with a reduced risk of MS both at the start of symptoms and 5 and 10 years beforehand, with a 28-30% lower risk among those drinking more than six cups (900 ml +) every day.

Similar results were found in the US study, with a 26-31% lower risk among those drinking more than 948 ml daily at least five years beforehand and at the start of symptoms compared with those who never drank coffee.

The higher the quantity of coffee drunk, the lower the risk of MS, the results showed.

This is an observational study, so no firm conclusions can be drawn about cause and effect, added to which changes in coffee consumption between an MS diagnosis and data collection could have influenced the results, while inaccurate recall of coffee consumption can't be ruled out, say the researchers.

But the results back up animal studies of MS, they say, and point to the evidence in favour of caffeine's protective effects against neurodegenerative diseases such as Alzheimer's and Parkinson's.

But some other chemical component of coffee rather than caffeine may be responsible for the association, they say, and further research is needed to get to the bottom of that.

In a linked editorial, Drs Elaine Kingwell and José Maria Andreas Wijnands, of the Faculty of Medicine, University of British Columbia, Vancouver, Canada, point out that the results of previous studies looking at this issue have been inconsistent.

"Given the well known challenges that exist in untangling the nature of associations between dietary factors and disease risk, these inconsistencies are perhaps not surprising," they write.

"Although it remains to be shown whether drinking coffee can prevent the development of MS, the results of these thorough analyses add to the growing evidence for the beneficial health effects of coffee," they continue.

"The intriguing findings indicate that the role of coffee in the development of MS clearly warrants further investigation, as do the mechanisms that underlie the relationship. In turn, this could potentially contribute to a better understanding of MS aetiology and the development of novel MS therapies," they conclude.

**Notes for editors:**

**Research:** High consumption of coffee is associated with decreased multiple sclerosis risk: results from two independent studies doi 10.1136/jnnp-2015-312176

**Editorial commentary:** Time to wake up and smell the coffee? Coffee consumption and multiple sclerosis doi 10.1136/jnnp-2015-312431