

**Common gut microbe might curb MS risk—at least in women**

*Helicobacter pylori* might prove 'hygiene hypothesis' for multiple sclerosis

**[*Helicobacter pylori* infection as a protective factor against multiple sclerosis in females  
Online First doi 10.1136/jnnp-2014-309495]**

**[Editorial commentary: *Helicobacter pylori* infection might prove the hygiene hypothesis in  
multiple sclerosis Online First doi 10.1136/jnnp-2014-309759]**

A common gut microbe might curb the risk of developing multiple sclerosis—at least in women—suggests the largest study of its kind published online in the **Journal of Neurology Neurosurgery & Psychiatry**.

If confirmed in other studies, this might prove the hygiene hypothesis, the premise of which is that childhood infections help to prime and regulate the immune system and ward off autoimmune and allergic diseases in later life, say the researchers.

The prevalence of multiple sclerosis (MS) has increased worldwide, in tandem with other autoimmune disease, but the reasons behind this rise are unclear. Some studies have suggested a link between early childhood infection and reduced MS risk, but they have all been small.

The researchers therefore tested 550 people with confirmed MS and a comparison group of 299 healthy people, matched for age and sex, for the presence of antibodies to *Helicobacter pylori*. The tests were done between 2007 and 2011.

*H pylori* is usually acquired before the age of 2, and lasts for life in the stomach, unless treated. Around half the world's population is infected with it, most of whom live in the developing world, where hygiene standards and antibiotic prescribing rates tend to be lower than they are in developed countries.

The results showed that the prevalence of the infection was significantly lower in those with MS than in the comparison group, but only among women, in whom it was around 30% lower.

Furthermore, after taking account of influential factors, such as age at diagnosis, year of birth, and duration of symptoms, those women with MS who tested positive for *H pylori* seemed to be less disabled by their condition than those who tested negative for the infection.

The reverse was true in men, among whom a positive test result was linked to higher rates of disability.

There was no evidence of any link between the presence of the infection and relapse rate.

There's no obvious explanation for the gender disparity, which definitely warrants further study, say the researchers. Rates of MS are higher in women than they are in men, with most of the increased prevalence of MS in recent years, occurring in women.

In a linked editorial, Professor Jun-ichi Kira, of the Neurological Institute at Kyushu University, Fukuoka, Japan, points out that the lower disability scores reported by the women with MS who tested positive for *H pylori*, suggests that the infection might be protective.

"Collectively, such an inverse correlation of *H pylori* infection with MS in developing countries where MS and allergic disorders have increased, may support the 'hygiene hypothesis,' he writes.

“Although why the protective effects of H pylori against MS were observed only in women remains to be elucidated, but might explain the recent increase in female to male ratio of MS in developed countries,” he adds.