High-salt diet linked to MS

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AFP

High-salt diets A high-salt diet may be a risk factor for autoimmune diseases like multiple sclerosis, a trio of papers released today say.

Two of the studies, all published in *Nature* (http://dx.doi.org/10.1038/nature11981) show salt can induce the production of aggressive cells involved in autoimmune disease development in mice and humans, while a third indicates that mice on high-salt diets develop a type of disease similar to human MS.

The international teams involved in the work caution these are early results that warrant further investigation.

"It's premature to say: 'You shouldn't eat salt because you'll get an autoimmune disease'," says one of the study authors, Dr Aviv Regev from the Massachusetts Institute of Technology (http://www.mit.edu) .

"We're putting forth an interesting hypothesis - a connection between salt and autoimmunity - that must now be tested through careful epidemiological studies in humans."

In two studies in mice and human cells, scientists show salt boosted the development of a type of immune cell known as T helper 17, or Th17, that has been implicated in diseases like MS, psoriasis and rheumatoid arthritis.

Further investigation: Reduced salt diet trials are approved to start on patients with MS *(Source: iStockphoto)*

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Reducing salt doesn't lower risk: study (/science/articles/2011/07/06/3262781.htm) , Science Online, 10 Jul 2011

Lack of sunshine triggers 'faulty' MS gene (/science/articles/2009/02/05/2483112.htm) , Science Online, 05 Feb 2009

Autoimmune diseases develop when the immune system attacks rather than protects the host.

Other researchers found they could induce more severe forms of autoimmune diseases, and at higher rates, in mice fed a diet higher in salt than others.

Other factors

"It's not just salt, of course," says author Dr Vijay Kuchroo, co-director of the Centre for Infection and Immunity at the Brigham and Women's Hospital (http://www.brighamandwomens.org) in Boston.

"We have this genetic architecture - genes that have been linked to various forms of autoimmune diseases and predispose a person to developing autoimmune diseases.

"But we also suspect that environmental factors - infection, smoking and lack of sunlight and Vitamin D may play a role," Kuchroo says in a joint statement.

"Salt could be one more thing on the list of predisposing environmental factors that may promote the development of autoimmunity."

Dr David Hafler, a professor of immunobiology at Yale University (http://www.yale.edu/) and senior author of one of the three papers, says the findings now need to be studied in people.

He has already received permission to test the effects of lowering the salt intake in the diets of individuals with multiple sclerosis to see if their symptoms improve.

In a comment on the three companion papers, Dr John O'Shea, scientific director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (http://www.niams.nih.gov) in the US and Assistant Professor Russell Jones of McGill University (http://www.mcgill.ca) in Canada, call the findings "exciting and provocative".

But they reiterate it is premature to state that salt could cause autoimmune disease.

"This work should spur investigation of tangible links between diet and autoimmune disease in people," they write.

"In doing so, it will be essential to conduct formal, controlled clinical trials. Fortunately, the risks of limited dietary salt intake are not great, so it is likely that several such trials will be starting soon."

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