

Over-the-counter drug may reverse chronic vision damage caused by multiple sclerosis

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A common antihistamine used to treat symptoms of allergies and the common cold, called clemastine fumarate, partially reversed damage to the visual system in people with multiple sclerosis (MS) in a preliminary study released today that will be presented today at the American Academy of Neurology's 68th Annual Meeting in Vancouver, Canada, April 15 to 21, 2016.

The study involved people with MS and optic neuropathy, which is damage to the nerve that sends information from the eye to the brain. In people with MS, the immune system destroys myelin, the [protective coating](#) around the nerves, which then leads to damage along the nerves, slowing signals to and from the brain. Optic nerve damage is a common consequence of the disease.

"This study is exciting because it is the first to demonstrate possible repair of that protective coating in people with chronic demyelination from MS," said study author Ari Green, MD, of the Multiple Sclerosis Center at UC San Francisco, and a member of the American Academy of Neurology. "This was done using a drug that was identified at UCSF only two-and-a-half years ago as an agent with the potential to help with brain repair."

The five-month study involved 50 people with an average age of 40 who had MS for an average of five years and had mild disability. They all had evidence of a stable chronic optic neuropathy, meaning that they were not recovering from a recent optic neuritis.

Participants performed vision tests at the start and end of the study. For one test, called a visual evoked potential, the time for transmission of signal from the retina to the visual cortex was recorded. To be included in the study, participants had to have a delay in transmission time beyond 118 milliseconds in at least one eye and had to have evidence that they had an adequate number of nerve fibers to reinsulate. An improvement in the delay in transmission is considered a biomarker of myelin repair.

For the first three months of the study, people were given either the antihistamine clemastine fumarate or a placebo. For the second two months, those initially given the drug received the placebo and vice versa.

During the study, delays were reduced by an average of slightly less than two milliseconds in each eye per patient among those who received the antihistamine.

"While the improvement in vision appears modest, this study is promising because it is the first time a drug has been shown to possibly reverse the damage done by MS," said Green. "Findings are preliminary, but this study provides a framework for future MS repair studies and will hopefully herald discoveries that will enhance the brain's innate capacity for repair."

Study participants did report a modest increase in fatigue while taking the drug.

Green cautioned that more research with larger numbers of people is needed before doctors can recommend clemastine fumarate for people with MS, and that newer medications capable of even more powerful effects are in development, including efforts intended to improve the targeting and reduce side effects from these drugs.

Provided by American Academy of Neurology

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