

# Study finds association between blood levels of trace metals and risk of glaucoma

August 6 2015

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In an analysis that included a representative sample of the South Korean population, a lower blood manganese level and higher blood mercury level were associated with greater odds of a glaucoma diagnosis, according to a study published online by *JAMA Ophthalmology*.

Glaucoma is the leading cause of irreversible blindness worldwide and a growing public health concern because of an aging global population. Abnormal body levels of essential elements and exposure to toxic trace metals have been postulated to contribute to the pathogenesis of diseases affecting many organ systems, including the eye, according to background information in the article.

Shan C. Lin, M.D., of the University of California, San Francisco, and colleagues investigated the relationship between body levels of 5 trace metals ([manganese](#), mercury, lead, cadmium, and arsenic) and the prevalence of glaucoma. Blood or urine metallic element levels and information pertaining to ocular disease were available for 2,680 individuals (19 years and older) participating in the fourth Korea National Health and Nutrition Examination Survey between January 2008 and December 2009, the second and the third years of the survey (2007-2009).

After adjustment for potential confounders, analyses indicated that lower [blood](#) manganese levels and higher blood mercury levels were associated with greater glaucoma prevalence. No association was found between blood lead or cadmium levels or urine arsenic levels and a

diagnosis of glaucoma in the study population.

"Future prospective investigations will be necessary to confirm these associations and to explore the role of trace elements in the pathogenesis of glaucoma, as well as possible neuroprotective effects, which could lead to novel therapeutic targets in [glaucoma](#) management," the authors write.

**More information:** *JAMA Ophthalmol.* Published online August 6, 2015. [DOI: 10.1001/jamaophthalmol.2015.1440](https://doi.org/10.1001/jamaophthalmol.2015.1440)

Provided by The JAMA Network Journals

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