

# Long sleep and high blood copper levels go hand in hand

September 14 2015

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Credit: Vera Kratochvil/public domain

Persons sleeping less than 6 hours or more than 10 hours suffer from low-

grade inflammation more often than persons sleeping 7-8 hours per night. This was observed in a University of Eastern Finland study focusing on the health and lifestyle habits among middle-aged men.

"Earlier studies have found a relation between reduced sleep and low-grade inflammation," says Maria Luojus, MHS, one of the study researchers.

Furthermore, low-grade inflammation occurs in overweight, depression and diabetes.

The study is the first to analyse the association between sleep duration and serum micronutrient concentrations in a large sample, and it found a link between high serum copper concentration and long sleep duration. Serum micronutrient concentrations are affected by many factors, including an individual's general health and diet.

"Based on this study, however, it is impossible to say whether sleeping long results in high serum copper concentrations or vice versa," Luojus says.

It has been suggested that high serum copper concentration associates with pro-oxidative stress.

"Pro-oxidative stress is found in many chronic diseases, such as [coronary artery disease](#). Nevertheless, when the study participants' cardiovascular diseases were taken account for, our results remained unchanged. The association between serum copper concentration and [sleep duration](#) persisted independently of cardiovascular diseases," Luojus says.

In addition to, the study participants' age, cumulative smoking history, alcohol consumption, depressive symptoms, physical activity and metabolic syndrome were taken into account in the data analysis.

The study involved 2,682 men living in Eastern Finland, participating the Kuopio Ischemic Heart Disease Risk Factor (KIHD) study. The KIHD study has been ongoing at the University of Eastern Finland in the Institute of Public Health and Clinical Nutrition since 1984.

**More information:** "Serum copper, zinc and high-sensitivity C-reactive protein in short and long sleep duration in ageing men." *Journal of Trace Elements in Medicine and Biology* 32:177-82. [DOI: 10.1016/j.jtemb.2015.07.008](https://doi.org/10.1016/j.jtemb.2015.07.008)

Provided by University of Eastern Finland

Citation: Long sleep and high blood copper levels go hand in hand (2015, September 14)  
retrieved 26 April 2024 from <https://medicalxpress.com/news/2015-09-high-blood-copper.html>

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