

How coffee protects against Parkinson's

11 July 2014

A specific genetic variation discovered by researchers at Linköping University in Sweden protects against Parkinson's Disease – especially for those who drink a lot of coffee.

The study is published in the scientific journal *PLOS One*.

Hereditary and environmental factors interact with one another in the emergence of diseases, and research is often focussed on identifying genes and exposures that increase the risk for contracting diseases. But there are also genetic variations – mutations – and environmental factors that protect against the emergence of certain diseases.

Neurodegenerative diseases such as Parkinson's have a complicated background where both genetic factors and exposure to [environmental factors](#) are involved. In a study of a million genetic malformations, the research team identified a variant of the GRIN2A gene as a protective factor against Parkinson's. The corresponding protein is part of a complex that is thought to play a role in several [neurodegenerative diseases](#).

An epidemiological study of Parkinson's patients from two counties in south east Sweden examined a combination of a previously known protective factor – caffeine – and the genetic variant in GRIN2A. The findings show that individuals with this combination run a significantly lower risk of developing the disease.

The study gives a molecular explanation to the protective effects that increased [caffeine intake](#) has on the development of Parkinson's. Caffeine integrates with a dopamine receptor that regulates the flow of calcium into the cell. As dopamine is part of the human reward system, and the interaction of caffeine with it, it has been speculated that individuals with certain genetic variations are not "rewarded" to the same extent by a cup of coffee, and therefore would not enjoy the same protective effect as others. The newly published study shows that GRIN2A can be a part

of such a genetic predisposition.

The study was conducted with financial support from the Foundation for Parkinson's Research at Linköping University.

More information: Naomi Yamada-Fowler, Mats Fredrikson och Peter Söderkvist (2014) "Caffeine Interaction with Glutamate Receptor Gene GRIN2A: Parkinson's Disease in Swedish Population." *PLoS ONE* 9(6): e99294. [DOI: 10.1371/journal.pone.0099294](#)

Provided by Linköping University

APA citation: How coffee protects against Parkinson's (2014, July 11) retrieved 15 June 2022 from <https://medicalxpress.com/news/2014-07-coffee-parkinson.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.