

Green Tea May Protect Brain Cells Against Parkinson's Disease

ScienceDaily (Dec. 14, 2007) — Does the consumption of green tea, widely touted to have beneficial effects on health, also protect brain cells? Authors of a new study being published in the December 15th issue of *Biological Psychiatry* share new data that indicates this may be the case.

The authors investigated the effects of green tea polyphenols, a group of naturally occurring chemical substances found in plants that have antioxidant properties, in an animal model of Parkinson's disease.

Parkinson's disease is a progressive, degenerative disorder of the central nervous system, resulting from the loss of dopamine-producing brain cells, and there is presently no cure. According to Dr. Baolu Zhao, corresponding and senior author on this article, current treatments for Parkinson's are associated with serious and important side effects. Their previous research has indicated that green tea possesses neuroprotective effects, leading Guo and colleagues to examine its effects specifically in Parkinson's. The authors discovered that green tea polyphenols protect dopamine neurons that increases with the amount consumed. They also show that this protective effect is mediated by inhibition of the ROS-NO pathway, a pathway that may contribute to cell death in Parkinson's.

Considering the popularity of green tea beverages worldwide, there is enormous public interest in the health effects of its consumption. John H. Krystal, M.D., Editor of *Biological Psychiatry* and affiliated with both Yale University School of Medicine and the VA Connecticut Healthcare System, reminds us that "many health-related claims have been made for a wide variety of naturally-occurring substances and many of these claims, as in the case of St. John's Wort and Ginko Biloba, have not held up in rigorous clinical studies. Thus, it is extremely important to identify the putative neuroprotective mechanisms in animal models, as Guo and colleagues have begun to do for Parkinson's disease."

Dr. Zhao's hope is that eventually "green tea polyphenols may be developed into a safe and easily administrable drug for Parkinson's disease." Dr. Krystal agrees, that "if green tea consumption can be shown to have meaningful neuroprotective actions in patients, this would be an extremely important advance."

The article is "Protective Effects of Green Tea Polyphenols in the 6-OHDA Rat Model of Parkinson's Disease Through Inhibition of ROS-NO Pathway" by Shuhong Guo, Jingqi Yan, Tangbin Yang, Xianqiang Yang, Erwan Bezdard and Baolu Zhao. Drs. Guo, Yan, and Zhao are affiliated with State Key Laboratory of Brain & Cognitive Science, Institute of Biophysics, Academia Sinica in Beijing, China. Dr. Yan is also with the Graduate School of Chinese Academy of Sciences in Beijing, China. Dr. Zhao is also with the E-Institutes of Shanghai Municipal Education Commission, China. Dr. T. Yang is from the Space Cell and Molecular Biology Laboratory, Institute of Space and Medico-Engineering, Beijing, China. Dr. X. Yang is affiliated with the Department of Tea Science, Zhejiang University in Hangzhou, China. Dr. Bezdard is with the National Center for Scientific Research (The Centre National de la Recherche Scientifique) in Bordeaux, France. The article appears in *Biological Psychiatry*, Volume 62, Issue 12 (December 15, 2007), published by Elsevier.

Adapted from materials provided by [Elsevier](#), via [EurekAlert!](#), a service of AAAS.