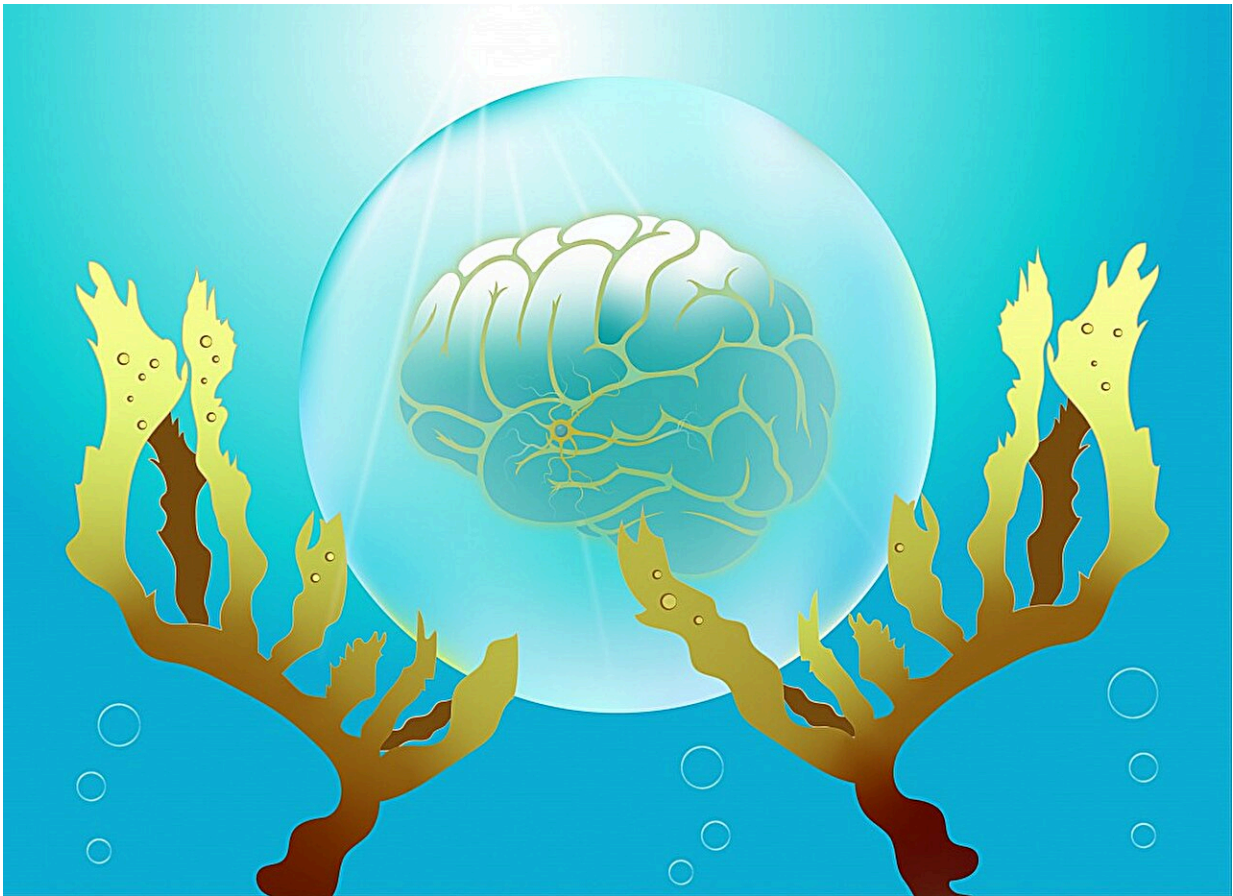


# Answer to preventing Parkinson's disease may lie in seaweed antioxidants

August 5 2024

---



Anti-Parkinson's seaweed: *Ecklonia cava* is a seaweed that may hold the key to Parkinson's disease prevention. Credit: Osaka Metropolitan University

Parkinson's disease is a neurodegenerative disease caused by the loss of

neurons that produce dopamine, a neurotransmitter involved in motor control and cognitive function. As the global population ages, the number of Parkinson's disease patients is rapidly increasing. Parkinson's disease is induced by neuronal damage due to excessive production of reactive oxygen species.

Suppression of reactive oxygen species generation is essential because it is fatal to [dopaminergic neurons](#) that manage dopamine neurotransmitters. Currently, only symptomatic treatment is available, so the development of treatment regimens and prevention methods is necessary.

Associate Professor Akiko Kojima-Yuasa of Osaka Metropolitan University's Graduate School of Human Life and Ecology led a research group that has verified the physiological effect of Ecklonia cava polyphenols, seaweed antioxidants, on the prevention of Parkinson's disease. The study is [published](#) in *Nutrients*.

In this study, two types of [motor function](#) tests were conducted using Parkinson's disease model mice that were orally fed the antioxidants daily for one week and then administered rotenone. Results showed that motor function, which was decreased by rotenone, was restored. There was also improvement in intestinal motor function and the colon mucosa structure, a special tissue that covers the colon.

Further, cellular experiments using Parkinson's disease model cells verified the biochemical interaction of the preventive effect of Ecklonia cava. Validation results showed that the antioxidants activate the AMPK enzyme (adenosine monophosphate-activated protein kinase), an intracellular energy sensor, and inhibit the production of reactive oxygen species that cause neuronal cell death.

"This study suggests that Ecklonia cava antioxidants may reduce

[neuronal damage](#) by AMPK activation and inhibiting intracellular reactive oxygen species production," stated Professor Kojima-Yuasa. "It is hoped that Ecklonia cava will be an effective ingredient in the prevention of Parkinson's disease."

**More information:** Yuri Yasuda et al, Ecklonia cava Polyphenols Have a Preventive Effect on Parkinson's Disease through the Activation of the Nrf2-ARE Pathway, *Nutrients* (2024). [DOI: 10.3390/nu16132076](https://doi.org/10.3390/nu16132076)

Provided by Osaka Metropolitan University

Citation: Answer to preventing Parkinson's disease may lie in seaweed antioxidants (2024, August 5) retrieved 7 August 2024 from <https://medicalxpress.com/news/2024-08-parkinson-disease-seaweed-antioxidants.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.