Why eating seaweed might help prevent Parkinson's disease

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Eating the seaweed Ecklonia cava may be able to slow down or prevent Parkinson's disease, according to a 2024 study.

Researchers found that antioxidants in the seaweed—which is often used in soups and salads in Asian cuisine—may protect our neurons from free radicals to prevent this debilitating disease.

Parkinson's is a condition that affects the nervous system, causing symptoms like shaking, stiffness and difficulty moving. It happens when neurons that produce dopamine—a chemical that helps control movement—start to die off in the brain. While Parkinson's is not itself fatal, it causes serious complications that can lead to death. Unfortunately, there is no cure yet.

But researchers have previously found links between dietary antioxidants and Parkinson's prevention. For example, research has found that resveratrol—which is in many plants and fruits including red grapes, berries and peanuts—protected the neurons producing dopamine in the brain from death in several mouse models of Parkinson's disease.

Ellagic acid, α-lipoic acid and myrtenal all improved learning and memory performance as well as neuromuscular coordination in mouse models of Parkinson's. Ellagic acid is found in many fruits and vegetables including grapes, pomegranates, berries and nuts.

Myrtenal is found in various plants, such as hyssop and sage. And α-lipoic acid is found in red meat, spinach and broccoli.

Several studies have suggested that drinking tea can help prevent Parkinson's disease. Although we don't really know how it works, some research suggests it is due to the antioxidants that tea contains.

Fighting free radicals

Our body produces harmful free radicals in response to environmental insults such as ultraviolet rays and air pollution. Free radicals are also a

natural byproduct of normal processes in cells.

Antioxidants are like bodyguards, protecting cells from the damage caused by free radicals. Our body naturally produces antioxidants but some foods, like Ecklonia cava, are rich in antioxidants and can supplement our naturally produced antioxidants to help our bodies battle free radical damage.

For the most recent study, based in Japan, researchers induced Parkinson's disease in mice using the pesticide rotenone. Rotenone kills the neurons that produce dopamine in the brain, which causes the mice to develop a disease that looks like Parkinson's, with similar symptoms, such as slower movement and impaired gastrointestinal motility (when there are problems moving food and waste through the digestive tract).

Once the researchers induced Parkinson's in the mice, they fed some with antioxidants from Ecklonia cava and some with a regular diet. They found that the neurons producing dopamine in the brain of the mice fed with antioxidants seemed to be protected. Also, those mice had fewer Parkinson's symptoms than the mice fed with the regular diet.

The researchers also looked at the effect of antioxidants in cells grown in a dish and exposed to rotenone. Rotenone increases the production of free radicals, killing the cells.

The researchers found that antioxidants decreased the production of free radicals induced by rotenone in the cells, preventing cell death. This research opens up the possibility of using Ecklonia cava polyphenols—plant compounds with antioxidant properties—to develop new treatments and prevention methods for Parkinson's.

Lost in translation?

Unfortunately, results from studies on animal models and cells are not always translatable to humans. For example, despite the protective action of another antioxidant, vitamin C, found in cells and animal models to protect against Parkinson's, it does not seem to have the same effect in humans.

This is because animal and cell models do not completely mimic Parkinson's disease in humans. Animals have different brain structures and functions compared to humans, which means the way the disease develops and progresses can be different. On the other hand, cell models, even if researchers use human cells, lack complexity.

Parkinson's disease affects the entire brain and body, involving many different types of cells and interactions. Cell models usually focus on a single type of cell, missing out on this complexity.

Parkinson's disease develops over many years, with symptoms changing over time. Cell and animal models cannot easily replicate this long-term progression. For example, the maximum lifespan of most laboratory mice is two years, whereas Parkinson's is thought to develop over decades.

In conclusion, robust large-scale clinical strials are needed to validate the efficacy of Ecklonia cava in preventing or slowing down Parkinson's. However, because Ecklonia cava is already available in food supplements, it probably does no harm to take it on a regular basis.

Will it prevent you from getting Parkinson's? Maybe, but so does regular exercise.

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