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Could Supplements Derived from Foods Prevent or Treat Symptoms of Neurodegenerative Diseases and Disorders?

As the population continues to age, neurodegenerative diseases and disorders have grown as a cause of both disability and death. The authors of "[Supplemental Substances Derived from Foods as Adjunctive Therapeutic Agents for Treatment of Neurodegenerative Diseases and Disorders](#)," published in the July 2014 issue of *Advances in Nutrition*, have analyzed the most recent research findings on dietary and nutritional supplements that have demonstrated encouraging preventive or therapeutic effects on chronic neurodegenerative diseases such as Alzheimer's and Parkinson's disease. Moreover, these authors assessed the results of studies examining the effects of supplements on neurodegeneration resulting from acute events such as traumatic brain injury.

Rosmarinic acid, found in common herbs such as rosemary and sage, was among the supplemental substances reviewed. The authors pointed to a number of studies in which rosmarinic acid proved to ameliorate symptoms of neurodegenerative disease. In one study, for example, daily administration of rosmarinic acid markedly improved cognitive and behavioral function among older adults diagnosed with moderate Alzheimer's disease. While research is limited, there is also evidence that rosmarinic acid may be beneficial in treating victims of traumatic brain injury by reducing oxidative stress, neuronal cell death, and inflammatory responses.

DHA (docosahexaenoic acid), an omega-3 fatty acid found in cold-water oceanic fish oils, is another promising supplement. Studies have shown that populations with high dietary intake of DHA exhibit a lower risk of cognitive impairment and Alzheimer's disease. Results of clinical studies examining the therapeutic benefits of DHA supplementation, however, have been mixed. Some studies have demonstrated that DHA may delay the onset of age-related cognitive decline, but not in individuals who have already been diagnosed with Alzheimer's disease.

Major advancements in our understanding of neurodegenerative diseases and traumatic brain injury have revealed common underlying pathologic features and mechanisms. This suggests that a single therapeutic approach may be used to treat multiple conditions. As a result, the supplements discussed in this review have the potential to prevent or treat a broad range of neurodegenerative diseases and brain injuries.

In summary, the authors noted that "the ability of dietary substances to confer therapeutic effects to neurodegenerative conditions still needs to be critically explored." In particular, they have called for more research to study the possible therapeutic effects of combining various supplements.

What is a Sustainable Diet?

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Review in latest issue of Advances in Nutrition points to many hurdles on the road to implementing a sustainable system that provides everyone with access to healthy food

An article published in the July 2014 issue of *Advances in Nutrition*, "[Understanding Sustainable Diets: A Descriptive Analysis of the Determinants and Processes that Influence Diets and Their Impact on Health, Food Security, and Environmental Sustainability](#)," underscores the need for the development and implementation of sustainable diets around the world. The concept of sustainable diets presents an opportunity to not only advance environmentally friendly development, but also the elimination or reduction of poverty, hunger, and many chronic diseases such as heart disease and diabetes.

Global dietary patterns have changed dramatically in the past 50 years, presenting both a boom and a threat to the health and well-being of populations everywhere. Increased incomes, particularly in the developing world of late, have been accompanied by increased consumption of diets high in meat, dairy, oil, salt and processed foods, leading to a rise in obesity and other diet-related diseases. Yet, at the same time that obesity has reached epidemic proportions, 868 million people around the world suffer from hunger, with another 2 billion suffering from micronutrient deficiencies.

The globalization of our food system has enabled our current dietary patterns by generally lowering food prices; however, the focus has been on facilitating high caloric diets that are low in variety and important nutrients. Moreover, our current food production system has greatly contributed to environmental degradation and biodiversity loss.

According to the article's authors, "[T]he alarming pace of biodiversity loss and ecosystem degradation concomitant with their negative impact on farming systems, livelihoods, and health make a compelling case for re-examining food systems and diets from a sustainability and public health perspective." Moreover, the authors note that global population growth projections, alongside the challenges imposed by climate change and the rising appetite for environmentally costly animal source foods, highlight the urgency for improving the environmental sustainability of our food system.

The *Advances in Nutrition* article examines the complex interrelationships and stakeholders among the five major determinants of sustainable diets: agriculture, health, sociocultural factors, environment, and socioeconomics. While there has been much discussion of sustainable diets in the past several years, the authors note that there has been little progress in implementing food production systems that are environmentally sustainable and ensure access to a healthy food supply to the world's population.

Most notably, there is no general agreement on what a sustainable or unsustainable diet translates to in practice. The authors therefore have called for the need to develop a set of guidelines to clearly define what a sustainable diet is as well as measurement tools to assess progress.

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