

# ASN Publications

The following reviews are published in the September 2016 issue of *Advances in Nutrition*.

## **Can Diet Improve Cognitive Function or Ward Off Dementia?**

*Scientific review published in Advances in Nutrition finds evidence that the Mediterranean diet may support healthy brain function*

With the aging of the population, the incidence of dementia is increasing. The most common type of dementia, Alzheimer's disease, accounts for more than 60% of all dementia cases. According to current estimates, nearly 36 million people worldwide suffer from Alzheimer's disease, with evidence suggesting that more than 115 million people will be affected with Alzheimer's disease by the year 2050, unless there are medical breakthroughs to prevent or cure the disease.

In addition to pharmacological approaches to manage dementia, researchers are also looking at modifiable lifestyle factors such as diet. In particular, much research has been conducted over the past few years to assess how the Mediterranean diet might affect cognitive function and dementia. Recently, the authors of "[Mediterranean Diet, Cognitive Function, and Dementia: A Systematic Review of the Evidence](#)," published in the September 2016 issue of *Advances in Nutrition*, critically examined the current body of scientific evidence to determine what conclusions, if any, could be drawn.

The Mediterranean diet is characterized by high consumption of unrefined cereals, fruit, vegetables, legumes, and olive oil. Moreover, it features moderate consumption of dairy products and alcohol as well as limited meat intake. Among other benefits, adhering to the Mediterranean diet has been linked to a lower risk of various chronic conditions, including cardiovascular disease and type 2 diabetes.

Overall, the authors reviewed 32 studies that examined the effect of the Mediterranean diet on cognitive function, cognitive impairment, and dementia.

Despite some inconsistencies among the studies' findings, the majority of studies showed that the Mediterranean diet may contribute to better cognitive performance and may be protective against cognitive impairment and dementia. The authors cautioned that much of the research they reviewed showed an association between adherence to Mediterranean diet and better cognitive function; however, they noted, "because the majority of studies were observational, a causal link cannot be assumed."

The authors also noted that it is not fully clear whether the Mediterranean diet exerts its effects because of the diet as a whole or through the action of individual components of the diet. Research findings do suggest that some components may be more important than others. For example, monounsaturated fatty acids and polyunsaturated fatty acids, both abundant in the Mediterranean diet, have been associated with improved cognitive performance and a decreased risk of age-related cognitive decline. Similarly, micronutrients abundant in the Mediterranean diet such as vitamin C, vitamin B-12, flavonoids, and carotenes also have been linked to a decreased risk of cognitive decline.

In their conclusion, the authors recommended that "more random control trials and large epidemiologic studies with a posteriori approaches be conducted in order to provide empirical evidence for the role of the Mediterranean diet in cognitive function and to understand the significance of individual components, as well as their synergistic effects when put together."

## **Are Energy Drinks Safe?**

*Scientific review published in Advances in Nutrition calls for more research, especially among higher-risk populations*

## Upcoming Events

**September 16.** Big Data, Consumer Technology, and the Obesity Epidemic: Emerging Science and Ethical Considerations. The New York Academy of Science in New York City.

**September 27.** Driving Action and Progress on Obesity Prevention and Treatment. National Academy of Sciences, Washington, D.C.

**September 28-29.** National Institutes of Health Iron Workshop. Natcher Conference Center, National Institutes of Health, Bethesda, MD

**September 29-30.** 11th Annual Obesity Summit. InterContinental Hotel, Cleveland, OH

**October 3-4.** The Probiotics Congress USA. San Diego Marriott La Jolla

**October 3-4.** The 4th Microbiome R&D and Business Collaboration Forum. San Diego Marriott La Jolla

**November 11-12.** International Symposium: Prevention Models of Obesity and Cardiovascular Diseases. Vienna, Austria

**November 14-16.** AICR 2016 Research Conference on Nutrition, Physical Activity, Obesity, and Cancer. North Bethesda, MD  
Contact: [research@aicr.org](mailto:research@aicr.org)

**November 29-December 2.** Nutrition Society of Australia 40th Annual Scientific Meeting. Crown Melbourne, Australia

## Journal Links

[The American Journal of Clinical Nutrition](#)

[The Journal of Nutrition](#)

Despite reported health concerns, the popularity of energy drinks is steadily climbing. Between 2008 and 2012, for example, energy drink sales jumped by 60% in the United States. By 2017, annual energy drink sales in the U.S. are expected to exceed \$21 billion.

Caffeine is the major ingredient in most energy drinks: some may contain up to 500 mg of caffeine, as much caffeine as in four or five cups of coffee. Energy drinks may also contain sugar, guarana, taurine, ginseng, vitamins, glucuronolactone, and other ingredients. These drinks are widely promoted as products that increase alertness and enhance physical and mental performance. Marketing energy drinks to young people has been quite effective. For example, almost one-third of teens drink them regularly.

With the growing popularity of energy drinks, researchers and public health professionals are increasingly concerned about their possible negative health impacts, in particular their effects on cardiovascular health. A review article published in the September 2016 issue of *Advances in Nutrition*, "[Energy Drinks and Their Impact on the Cardiovascular System: Potential Mechanisms](#)," evaluates the research findings, with an emphasis on how energy drinks affect blood pressure and heart rate.

According to the article's authors, the most recent research suggests that energy drink consumption can lead to "an acute adverse hemodynamic profile." In other words, energy drinks force the heart to work harder to pump blood throughout the body, which can potentially lead to heart attack or stroke. Recent studies that used heart beat-to-beat measurements, for example, showed that the ingestion of just one can of a sugar-sweetened energy drink resulted in an augmented workload to the heart as evidenced by elevated blood pressure, heart rate, and cardiac output.

The cardiovascular responses to the ingestion of energy drinks are best explained by the actions of caffeine and sugar, with little influence from other ingredients. However, a role for other active ingredients such as taurine and glucuronolactone cannot be ruled out.

The authors note that the cardiovascular changes in response to energy drinks have only been broadly studied in healthy young humans. They have, therefore, called for more research on the cardiovascular effects of energy drinks in people with a higher risk for heart disease or those with pre-existing hypertension or impaired cerebral circulation.

In conclusion, the authors note, "given their global popularity and estimated market value of more than \$40 billion, accurately assessing the potential adverse effects of energy drinks has important implications for the prevention and management of obesity, type 2 diabetes, and cardiovascular disease."

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