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

Is Resveratrol a Magic Bullet?

Scientific review published in Advances in Nutrition finds resveratrol has potential therapeutic properties, but more research and development is needed

Resveratrol, a naturally occurring compound, has recently received a great deal of attention for its many health claims, including preventing heart disease, neurodegeneration, and diabetes. It is produced by certain plants and found in such foods as grapes, apples, raspberries, blueberries, plums, and peanuts. In particular, resveratrol is found in high concentrations in red wine, convincing many people that regular red wine consumption should play an important role in adult health maintenance.

The authors of "Resveratrol: How Much Wine Do You Have to Drink to Stay Healthy?," published in the July 2016 issue of *Advances in Nutrition*, set out to review the scientific literature to determine whether or not there was merit to the health claims surrounding resveratrol. According to the authors, resveratrol does have a large variety of "potential therapeutic properties." However, they caution that "it is not possible to absorb the recommended therapeutic doses of resveratrol by drinking wine or through dietary sources."
A key challenge with resveratrol is its low bioavailability. Very little of the resveratrol in foods that we eat is absorbed into the bloodstream and reaches its target (e.g., the brain, liver, cardiovascular system).

Many people attribute the "French Paradox," the observation that the French have a relatively low incidence of heart disease despite a diet high in saturated fats, to the resveratrol in the wine the French drink. However, due to its low bioavailability, this is unlikely to be true. According to the authors, the average consumption of wine in French translates into an amount of resveratrol that is 5,000 times lower than the proposed therapeutic dose (i.e., a dose that would have an observable beneficial health effect). One would need to drink hundreds of liters a day to reach the therapeutic dose. Supplements can provide much higher doses of resveratrol. These are readily available in health food stores and via online retailers, and their manufacturers make a broad range of health claims. These supplements are not standardized, however, and their formulations can vary greatly from one manufacturer to another. Moreover, the authors found that "the published evidence is not sufficiently strong to justify a recommendation for the administration of resveratrol to humans."

Most of the beneficial health effects of resveratrol have only been established in preclinical studies. These studies do not involve human subjects. One of the major challenges in resveratrol research is to determine whether the observed health-promoting effects in non-human studies are transferable to humans. The authors note that these clinical trials must be conducted with standardized resveratrol formulations in order to compare results.

Is resveratrol a "magic bullet?" Probably not, but researchers are working on ways to harness its health promoting effects. Until then, consumers should approach resveratrol with a certain amount of skepticism and drink wine in moderation.

Can Poor Diet and Sleep Lead to Alzheimer's Disease?

Scientific review published in Advances in Nutrition explores possible interconnected causes of Alzheimer's disease

An estimated 5.4 million Americans have Alzheimer's disease, including one out of every nine adults over the age of 65. That number is growing. By 2050, the number of people age 65 and older with Alzheimer's disease may nearly triple to a projected

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13.8 million, barring any medical breakthroughs to prevent or cure the disease. In addition, the cost of caring for Alzheimer's patients in the U.S. is estimated to be $236 billion in 2016. This figure will rise substantially as the number of Alzheimer's patients rises.

Published in the July 2016 issue of *Advances in Nutrition*, "Associations between Sleep, Cortisol Regulation, and Diet: Possible Implications for the Risk of Alzheimer Disease," critically reviews and evaluates important research studies that provide valuable clues into the multiple, interconnected causes of Alzheimer's disease. These clues may also help researchers develop strategies to prevent or delay the onset of Alzheimer's disease, or possibly to slow the progression of the disease.

According to the authors' findings, diets characterized by high intakes of refined sugars, salt, animal proteins, and animal fats as well as by low intakes of fruit and vegetables are associated with a higher risk of Alzheimer's disease. Moreover, these nutrient-poor diets, which are typical of many Western diets, can disturb the body's ability to properly regulate the secretion of cortisol.

Cortisol is a hormone manufactured by the body that plays a role in regulating many of the body's core functions, including sleep. Independent of diet, sleep disorders and poor sleep quality have been found to be associated with a higher risk of Alzheimer's disease. For this reason, some researchers believe that diets and nutritional interventions aimed at restoring normal cortisol concentrations may also reduce the risk of Alzheimer's disease.

More research is needed to understand how diet, sleep, and cortisol regulation may be connected to the development and progression of Alzheimer's disease. In the meantime, consumers, particularly those who have a higher risk of developing Alzheimer's disease, may want to reevaluate their diets, increasing their intake of fruits and vegetables in place of refined sugars, salt, and animal proteins and fats where possible. Moreover, if your sleep quality is regularly poor, you may want to consult with a health care professional for possible solutions. These steps may help delay or prevent the onset of Alzheimer's disease.