What's New In 2012 Blueberry Health Research

We all know blueberries are a healthy fruit ...

but just how good they are for us is the subject of ongoing scientific research. Only 80 calories per cup, blueberries are virtually fat-free and a good source of fiber and vitamin C. In addition, studies continue to provide us with promising clues to the many different ways blueberries may help keep us healthy.

Because blueberries contain substances that have antioxidant properties, blueberry researchers have focused on the conditions known to be linked to oxidation and inflammation – diseases like cancer, cardiovascular disease, diabetes, impairment of brain function and other age-related conditions. Investigators are currently pursuing four tracks to better understand the role that blueberries may play in promoting good health – cardiovascular health, insulin response, brain health and cancer risk reduction.

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Cardiovascular Health

Cardiovascular disease is a major public health concern in the United States, and currently the leading cause of death for both men and women.[1] Conditions that in combination significantly increase an individual's risk for developing cardiovascular disease include high blood sugar, high blood pressure, obesity, and high blood lipid levels. The name given to this cluster of symptoms is metabolic syndrome.[2]

In a recent study of 48 obese human subjects with metabolic syndrome, those who consumed a blueberry beverage over an eight week period experienced a decrease in their systolic and diastolic blood pressure compared to those who consumed a placebo beverage. During the study, participants maintained their usual diets and physical activity patterns, but were asked to avoid consuming flavonoid-rich foods such as any other berries, green tea, cocoa and soy.[3] The results warrant further investigation and provide some evidence for including blueberries as part of healthy dietary practices.

In laboratory studies on rats conducted at the National Institute on Aging, researchers found that a diet enriched with blueberries protected the cardiac muscle (myocardium) from damage caused by reduced blood supply during a heart attack. In addition, repair of the damaged heart muscle was more efficient in those on a blueberry-supplemented diet than those on the control diet.[4]

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Insulin Response

Insulin resistance is a condition in which cells do not fully respond to the action of insulin, a hormone that regulates blood glucose. As a result, cellular uptake of glucose is impaired and blood glucose levels become abnormally high. Insulin resistance is commonly seen in obese individuals and can lead to type 2 or adult onset diabetes, the most common form of diabetes in the United States which continues to rise at a rapid rate.[6]

While more research is needed, studies with animals suggest that blueberries may have an effect on the way insulin does its job. In one animal study conducted at the USDA research center at Tufts University, obese mice were given high fat diets with or without blueberries for 8 weeks. The results yielded an improved insulin response with lower blood glucose levels in response to insulin in the blueberry fed mice than in the controls.[7]

In another study at the University of Michigan, researchers gave obese rats either a low or high fat diet supplemented with 2% blueberries and tested the effects against the control group. After 90 days, the rats that received the blueberry enriched diet had increased insulin sensitivity, decreased blood lipid levels and less measured abdominal fat. These results were also seen in the group that received the low fat diet supplemented with blueberries.[8]

In a human clinical trial, 32 individuals who were already diagnosed with metabolic syndrome were given similarly tasting smoothies, either with or without blueberries twice daily for 6 weeks. The researchers found that those who consumed blueberries were more able to lower their blood glucose in response to insulin than those who were not given blueberries.[9] While the study is not conclusive, it strongly suggests that more research is needed to evaluate blueberries and their potential role in improving insulin sensitivity in an insulin resistant population.

Brain Health

Scientists at the USDA research center at Tufts University have been studying the beneficial effects of blueberries on brain function in animal models for over a decade. In a recent study, researchers there found that object memory loss that occurs normally with age can be not only prevented but actually reversed by feeding blueberries to older rats. Moreover, the improvement persisted for at least a month after they put the animals back on a standard diet.[10]

In a study with 9 human subjects, Robert Krikorian and his team at the University of Cincinnati found that older adults who were given blueberry juice scored higher on memory tests than those receiving a placebo. This study establishes a basis for human research of blueberry supplementation as a preventive intervention for cognitive aging.[11] These researchers are currently conducting a similar study with older subjects who already show some signs of cognitive impairment.

Cancer

Scientists are just beginning to understand the complicated relationship between diet and cancer. According to researchers at the City of Hope National Medical Center, blueberries may have an effect on breast cancer cell growth. Two studies have demonstrated that breast tumor growth can be reduced in blueberry-supplemented mice.[12,13] In in-vitro studies with colon cancer cell cultures, phenolic extracts from blueberries were shown to induce cell death, and cut down on cancer cell growth and spreading.[14] While more research is needed, blueberry intake could be an important part of dietary cancer prevention strategies.

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