



An Apple A Day

A Quarterly Health Education Newsletter from the U.S. Apple Association

HEALTH NEWS

Apples Offer Antioxidants

Apples and apple products are a healthy source of antioxidants—naturally occurring chemical compounds found in many fruits and vegetables. Extensive research supports the role of antioxidants in promoting health and preventing disease by protecting the body's cells from the damaging effects of oxidation. Oxidation is a naturally occurring process in the body that can contribute to the onset of diseases such as cancer and cardiovascular disease. Based on preliminary evidence from several laboratory studies, apples have been shown to inhibit this process and may contribute to the prevention of

disease.

Much of the biological activity of apples has been attributed to substances known as phytonutrients, which are found primarily in the skin of apples. Phytonutrients are another category of plant-derived substances that may contain disease-fighting compounds, and are found in high levels in apples. A major role of phytonutrients is to protect against oxidation; therefore they are sometimes classified as antioxidants. Various phytonutrients have been found to possess a range of functions¹.

Caffeic acid and ferulic acid,

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FOCUS ON CONSUMERS

Mothers Views on Apples

Mothers are key influencers for the apple industry, as they traditionally make the food purchasing decisions for themselves and their families. Today's moms are also striving to live a fast lifestyle, with convenience and healthy food options going hand-in-hand. This creates a challenge for the food industry to come up with solutions to meet their needs. USApple held two focus groups earlier this year to better understand the attitudes of today's mothers towards apples and why they feel as they do.

Two groups, held in Chicago and Baltimore, featured a mix of mothers who worked outside of the home and stay-at-home moms with different ethnic backgrounds and a range in the number and ages of their children. These moms were all apple purchasers.

The results suggest that mothers have a favorable impression about apples. This can make it much easier for them to accept health research and benefits linked with eating apples. In fact, the mothers expressed an eagerness to learn more about the health benefits of apples in simple and easy-to-understand messages. Most moms know apples are good for them, but do not know why, and to what extent they are good. Many were interested in learning more about apples' possible link to cancer prevention, heart health, brain health, lung health and weight management. The strength of consumer interest in these messages strongly supports continued investment in re-

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Celebrate Summer with U.S. Apples



When the temperature is rising, crisp apples are a great way to beat the heat. U.S. apples offer great taste and important health benefits.

FUNFACTS

The Interesting World of Apples

Apples are more than just great taste and good health -- they are also a lot of fun! Below are some fun apple facts for you to know and share with others. Hopefully they will help keep the conversation interesting.

- ◆ One apple has five grams of fiber
- ◆ Apples are fat, sodium, and cholesterol free
- ◆ The world's largest apple peel was 172 feet, 4 inches long
- ◆ The largest apple picked weighed three pounds
- ◆ Apples are a member of the rose family
- ◆ Two-thirds of the fiber and many of the antioxidants are found in the apple peel
- ◆ It takes the energy from 50 leaves to produce one apple
- ◆ Americans eat an average of 50.4 pounds of apples and apple products in a year
- ◆ The seed pocket in an apple is called the "carpel"
- ◆ Apples ripen six to ten times faster at room temperature than refrigerated
- ◆ Red Delicious Golden Delicious, Granny Smith, Gala and Fuji are the five most commonly consumed apple in the U.S.
- ◆ Fresh apples float

Apples & Antioxidants: A Healthy Fit

ANTIOXIDANTS (from page 1)

two types of phytonutrients present in apples, have been found to elicit several biological effects. These biological effects include maintenance of healthy vision, heart health, and antioxidant defenses.

Another major class of phytonutrients found commonly in fruits and vegetables are the flavonoids. Apples are a leading source of these phytonutrients, and studies have found a relationship between the flavonoids in apples and the reduction of numerous diseases. Most recently, scientists have suggested that flavonoids may play role in the prevention of cancer.

There are several types of flavonoids - quercetin, procyanidins, flavonols, and proanthocyanidins - found in high concentrations in apples and apple products. Researchers have suggested that quercetin may decrease lung cancer risk and prevent the growth of human prostate cells. According to a study conducted at Cornell University, this flavonoid may also protect against neurodegenerative diseases such as Alzheimer's.

Scientists have also demonstrated a protective effect for procyanidins. Researchers at the French National Institute for Health and Medical

Research found that procyanidins might reduce the risk of colon cancer.

Additionally, this type of flavonoid, along with proanthocyanidins, may help maintain heart health, while promising research states that flavonols may neutralize free radicals and boost cellular antioxidant defenses.

Based on encouraging evidence from numerous scientific studies, apples and apple products contain a variety of beneficial antioxidants and phytonutrients, each with a unique role in the maintenance of good health and protection against disease. While great progress has been made in identifying the important biological compounds present in apples, continuing research will likely uncover additional health benefits associated with apples. Clearly, antioxidants are a valuable component of apples and apple products, and their association with disease prevention provides further support for increased apple consumption.



Sources for Information on Apples and Antioxidants:

www.USApple.org

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Mothers' Views on Eating Apples

MOTHERS (from page 1)

search to discover more nutrition benefits of apples, and communications to begin to shape a new consumer conversation about apples and personal health.

But despite their interest in a variety of health benefits, most of the mothers in the discussion groups noted that they were not in a hurry to try new varieties of apples. They are content with their relationship with apples and expected to buy and use apples as they always have. They are not willing to "risk" themselves, their own time or money to learn about, or experiment with different varieties. They are also not likely to increase their purchase routine without strong reasons, such as added health benefits. However, participants did state that in-store description signs and sampling might help them experiment with new varieties.

Overall, mothers want to be educated on how and why healthy foods can fit into their busy lifestyles. USApple will continue to analyze the information collected to further strengthen its ability to effectively reach out to consumers.

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Buzzing Through the Orchard



A bee stops by an apple blossom to pick up some nectar, and as a result, the flower will become a Granny Smith apple. Bees are a vital piece of the apple industry as they pollinate the blooms so they can grow into apples.



Apples Demonstrate Protective Effect Against Cellular Damage

Earlier studies have shown that distinctive nutrients in apples and apple products can contribute to better health and protect against disease.

Now, UC-Davis researchers are recognizing flavonoids—a particular type of antioxidant found in apples—for their ability to protect the body from cellular damage. Dr. Eric Gershwin and Dr. Carl Keen from the University of California at Davis found that apples and apple products promote cellular communication and fight off damage that would otherwise harm or kill cells in the body.

Dr. Gershwin compares the apple components to a “spam filter,” by which “the good emails get through and the bad emails get stopped.”

In the study, Gershwin and his colleagues exposed human

cells to an extract of apple mash made from different apple varieties. The apple extract was able to interfere with the pathway that would normally cause lethal damage to the cells.

Without the protection conferred by apples and apple products, this damage to the cells could result in an increased risk of heart disease and certain types of cancer. This study further substantiates the role of apples and apple products in contributing to better health and enhances our understanding of their function at the cellular level.

Gershwin is hopeful that further research will identify additional mechanisms by which the nutrients in apples and apple products can protect against disease.

Apples May Have Positive Effect on Type II Diabetes

Including apples as part of a meal may have a beneficial response on glucose response in Type II diabetic patients, according to research conducted at the School of Nutrition Sciences and Food Technology in Tehran, Iran. Foods with a low glycemic index (G.I.), such as apples, were shown to have a beneficial effect on blood glucose levels compared to higher G.I. foods. The current study examined the effect of apples on the glycemic response of Type II diabetic patients, when eaten as part of their normal breakfast.

On the first day, Type II diabetes subjects first consumed their regular breakfast, which included tea, bread, cheese, tomato, and cucumber. The following week, they replaced half of the bread in their regular breakfast with an equal carbohydrate serving of apple (1 medium apple). There was a significant reduction in glycemic response when subjects consumed the breakfast containing apples, in comparison with their regular breakfast. Peak glucose levels were also significantly lower in the breakfast containing apples. These findings suggest that incorporating apples into a meal, in exchange for a higher G.I. food, may reduce glucose response in type 2 diabetic subjects.

APPLE RECIPES

Iced Apple Tea

3 cups apple juice or cider
3 cups boiling water
6 tea bags
1/3 cup honey
1 tsp. allspice
Apple slices, cut in circles, to garnish (optional)

Add tea bags to boiling water. Let stand 15 minutes. Remove and add allspice, honey and apple juice. Simmer over low heat until honey is blended, about one minute. Chill. Serve over ice with lemon slices.

Servings: 5 -- Prep and cook time: 40 minutes -- Source: U.S. Apple Association



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