



An Apple A Day

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

RESEARCH NEWS

Research Reports Apples, Juice May Aid Brain Health

Want to keep your brain on its toes? Then you may want to keep in mind that old adage about “an apple a day.” New research from the University of Massachusetts Lowell suggests that apple juice may protect against oxidative damage that contributes to age-related brain disorders such as Alzheimer’s disease, and may help to maintain brain performance – indicating that eating apples and drinking apple juice may impact our brain’s health and mental acuity throughout life.

“This is incredible food for thought,” says lead researcher Thomas B. Shea, Ph.D., director of the University of Massachusetts Lowell’s Center for Cellular Neurobiology and Neurodegeneration Research, whose work on mice was just published in the February issue of the *Journal of Nutrition, Health and Aging*.

While he cautions his findings in animals are preliminary and more research is needed, Shea characterizes these results

as very encouraging news about brain health for apple and apple juice fans of all ages who are interested in staying mentally sharp.

Shea and his colleagues assessed whether the consumption of apple juice was protective against oxidative brain damage

that results from normal metabolism, dietary insufficiencies or genetic deficiencies.

“Our results suggest that something in apple juice appears to protect the brain against oxidative damage, and improves cognitive performance in these animals, even when we impose dietary or genetic challenges,” said Dr. Shea. “We think that this ‘something’ is the apple’s naturally high level of antioxidants.”

The researchers evalu-

ated normal adult mice as well as mice that carry a gene associated with diseases like Alzheimer’s. Groups of both types of mice were exposed to either a “complete” diet including known antioxidants, or a “deficient” diet that is thought to increase oxidative

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New research suggests eating apples and drinking apple juice today may promote memory and learning – and protect brain health tomorrow. (Photo source: Getty Images)

RESEARCH NEWS

Fruit Fiber May Lower Heart Disease Risk

Eating a couple of apples a day may significantly cut heart disease risk, according to a new study of the health benefits of fiber consumption – suggesting that such high-fiber carbohydrates should be embraced, not avoided, experts say.

To estimate the association between dietary fiber intake and risk of coronary heart disease, researchers evaluated data from 10 prospective cohort studies in the United States and Europe involving 91,058 men and 245,186 women that measured the amount of fiber in participants’ diets over a period of 6-10 years. Nine of the 10 studies reported an inverse association between fiber consumption and heart disease risk.

For every 10 grams of fiber consumed per day, the risk of developing heart disease decreased 14 percent, and the risk of dying from heart disease decreased 27 percent. Fiber from fruits such as apples appeared to be slightly more protective than cereal fiber, lowering the risk of coronary disease death by 30 percent. Results were similar for men and women.

“Our results suggest that dietary fiber intake during adulthood is inversely associated with coronary heart disease risk,” authors wrote in the February edition of the *Archives of Internal Medicine*. “Coronary risk was 10 to 30 percent lower for each 10-gram per day increment.”

(Source: *Arch Int Med*, vol. 164, no.

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Get On Your Way to 5 A Day The Color Way With Apples

From the Produce for Better Health Foundation

Color is a fun and easy concept people can use to help improve their health by eating a variety of fruits and vegetables. And the Produce for Better Health Foundation's (PBH) new "5 A Day The Color Way" campaign has all the tools and information you need to promote the color concept!

Here's the science behind it: The vibrant colors of fruits and vegetables result from many of the phytochemicals and other plant compounds they contain. Phytochemicals have the potential to help reduce the risk of many chronic diseases. They, like the nutrients found in fruits and vegetables, are present in varying amounts in each color group: blue/purple, green, white, yellow/orange, and red.

The best way to reap all of the health benefits they offer is to get daily variety both within and between the color groups. How wonderful that apples fall into three of the five color categories — what a great start to achieving 5 to 9 servings of colorful fruits and vegetables every day!

PBH's accordion-fold Color Way Guide is the perfect tool to edu-

cate consumers about "5 A Day the Color Way" and the role apples can play in a Color Way diet. It provides important nutrition and health definitions, as well as serving sizes, lists of fruits and vegetables in each color group, and explains the health benefits associated with eating a colorful variety of fruits and veggies.

Apples are listed in three color groups: green, yellow/orange and red.

The accordion guide is user-friendly, convenient, pocket-sized format is ideal for referencing

while grocery shopping. It can't get any easier than that!

So, let apples and The Color Way Guide show you the way to better health. To order, visit PBH's online catalog, www.shop5adaycatalog.org. To arrange custom printing or large volume discounts, contact PBH's Steve Wilcox at (302) 894-1066 or via email at swilcox@5aday.org. ■



What's a Serving?

- 1 154-gram apple (the size of a tennis ball)
- 6 oz. 100% apple juice/cider
- 1/2 cup slices, dices, sauce
- 1/4 cup dried apples

PBH's new "5 A Day The Color Way" accordion guide introduces consumers to the concept of eating your colors, for better health — including red, yellow and green apples.



Thanks, AgroFresh!

AgroFresh, Inc. has donated \$20,000 to the U.S. Apple Association's (USApple) nutrition research and consumer education program. USApple will utilize this first-of-its-kind donation to fund research of apple health benefits, and apple-specific consumer nutrition education activities.

"AgroFresh's generous support allows USApple to extend our research program to sponsor apple-specific studies that would otherwise not be conducted, and to expand the growing evidence that apples and apple products may provide a 'whole body' range of health benefits," said USApple President and CEO Nancy E. Foster. "We appreciate AgroFresh's decision to support the research progress of the U.S. apple industry through sponsorship of this vital project."

USApple's nutrition research and consumer education program sponsors apple-specific research, and educates consumers on health and lifestyle benefits of apples and apple products.

"AgroFresh's support of USApple's nutrition research fits with our overall mission to grow consumption of apples and apple products," said AgroFresh President Gray Wirth. "Through the discovery of new apple health benefits and SmartFresh's ability to help deliver a better eating experience, we are working to increase the demand for U.S. apples and apple products for the betterment of the entire industry." ■



Celebrate This Father's Day In Good Health

Father's Day is right around the corner, presenting a great opportunity to show the special man in your life how important their good health is to you – with apples front and center, of course!

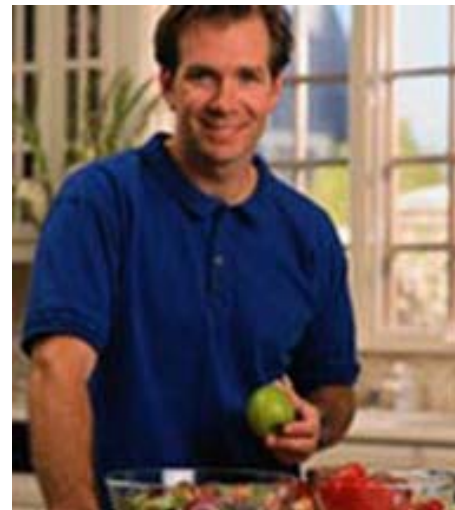
We count on Dad for so much throughout our lives, from soothing our childhood bumps and scrapes to teaching us the rules of the road as teens, to providing adult moral support disguised as a golf partner. We owe it to Dad to return the favor, and encourage him to eat for better health.

And Dad *does* need to be eating better. According to federal dietary guidelines, men should be eating nine or more servings of fruits and vegetables a day, for their better health. However, the

average man eats only about four and a half servings per day, and only 4 percent of men meet the 9 a day target.

Why? Men are significantly less likely than their fairer counterparts to know about the role fruits and veggies can play in promoting health, including reducing the risk of major chronic diseases including heart disease, high blood pressure and diabetes. Yet men have higher rates of cardiovascular disease and cancer – and more than two-thirds of men are overweight or obese.

So this Father's Day, let Dad know how important his health is to you, and what he can do about it: eat more fruits and vegetables, including delicious, nutritious,



Show Dad he's the apple of your eye this Father's Day. (Photo source: National Cancer Institute)

versatile apples and foods made from them. Here are some great grilling recipes for a Father's Day celebration to get you started! And for more information, visit the National Cancer Institute's healthy eating website for men, www.5aday.gov/9aday. ■

RECIPE BOX

Father's Day Apple-cue

Apple Halibut Kabobs

- 1/2c dry white wine, or chicken broth
- 4t olive oil
- 2T lime juice
- 2T finely chopped onion
- 1/2t salt
- 1/2t dried thyme, crushed
- 1/4 t pepper
- 1 baking apple, cored and cut in 1" cubes
- 1 medium green or sweet red pepper, cut in 1" squares
- 1 small onion, cut in 1" squares
- 1 lb. halibut, cut in 1 to 1½" cubes



This is an official 5 A Day recipe!

Combine first seven ingredients; mix well. Marinate remaining ingredients in mixture 1-2 hours. Thread apple, pepper, onion and halibut on four 12" or longer metal or bamboo skewers. Broil or grill 4-5 inches from heat 6-8 minutes or until fish flakes when tested with fork. Serve warm or cold.

Makes 4 servings.

Approximate Nutritional Analy-

sis (per serving): calories, 198; fat, 6 g; cholesterol, 60 mg; sodium, 365 mg; fiber, 2 g; percent calories from fat, 28%.

Applesauce Ambrosia

- 1 can (16 oz.) applesauce
- 2 bananas, sliced
- 1 can (11 oz.) mandarin oranges
- 1/2c toasted slivered almonds
- 1/2c flaked coconut
- 32 oz. low-fat vanilla yogurt



This is an official 5 A Day recipe!

Whip yogurt with a wire whisk. Add applesauce. Gently fold in remaining ingredients. Chill and serve. Serves 6.

Peach Baked Apples

- 6 medium baking apples
- 1/4c peach preserves
- 1/4t cinnamon
- 1/4c apple cider or apple juice
- 3/4c crumbled chewy oatmeal cookies

Cut apples in half and core. Place in 13 x 9 x 2-inch baking pan, cut side up. Combine preserves, cinnamon and apple juice or cider. Drizzle over cut sides of apples. Cover pan tightly with foil. Bake in 350°F oven about 35 minutes or until apples are just tender. Sprinkle crumbled cookies over cut surface of apples and drizzle with preserve mixture in bottom of pan. Bake 5 minutes longer, uncovered. Serve warm or cold. Can be topped with whipped topping or frozen vanilla yogurt, if desired. Makes 6 servings.

Approximate Nutritional Analysis (per serving): calories, 215; fat, 5 g; cholesterol, 0 mg; sodium, 105 mg; fiber, 5 g; percent calories from fat, 19%.

Apple Cooler

- 8 oz. sparkling apple cider
- 2 splashes grenadine
- 1 splash lime juice

Fill a highball glass with ice, add all ingredients and garnish with a cherry and a slice of lemon. Makes one drink. ■

Study: Apples Food for Thought

RESEARCH (from page 1)

damage. Some mice in each group then received apple juice concentrate in concentrations of 0.1, 0.5 or 1.0 percent in their drinking water. Other mice received sugar water to approximate the concentrate's natural sugar and energy content.

After one month on the test diets, the animals were put through two different well-established maze tests to determine their memory and learning capabilities. Mice who consumed the diets augmented with apple juice tended to perform better on the maze tests and all had less oxidative brain damage than control mice. In fact, adding apple juice to the diet completely protected the normal mice from the oxidative damage caused by the deficient diet – and protected the genetically-deficient mice from both their genetic predisposition and the deficient diet, allowing them to perform at the same level as normal mice being

fed the complete diet.

Although the UMass Lowell researchers did not study what components in apples were responsible for the neuroprotective effects demonstrated, they ruled out sugar and energy content, suggesting that the antioxidant potential of apple juice was responsible.

The results obtained were from moderate amounts of apple juice – comparable to drinking a couple of good-sized glasses of apple juice or eating a couple of apples a day. The findings also suggest that apple juice was most helpful in the framework of an overall healthy diet.

Speaking at a March 4 press conference, Dr. Shea called his latest findings about apples and brain health “dramatic.”

Research has shown that apples are a rich source of antioxidants; Cornell University researchers reported in the journal *Nature* in 2000 that one apple packs more cancer-fighting antioxidant capability than a 1,500-milligram dose of vitamin C.

“This research suggests that eating apples and drinking apple juice, in conjunction with a balanced diet, can protect the brain from the effects of stress – and that we should eat such antioxidant-rich foods,” said Shea.

This study was sponsored through an unrestricted grant by the U.S. Apple Association and the Apple Products Research and Education Council. The study confirms and expands upon an earlier study (Ortiz and Shea) accepted for publication in the *Journal of Alzheimer's Disease*.

More information and complete text of the published article can be found on www.uml.edu/dept/Biology/tshea/index.htm. ■

Fiber Health Benefits Touted

FRUIT FIBER (from page 1)

4, Feb. 23, 2004; pp 370-376.)

Researchers did not identify a specific protective mechanism, although fiber has been shown to reduce heart disease risk many ways, such as improving blood lipid profiles, lowering blood pressure and improving insulin sensitivity, the study noted.

Soluble fiber appeared to be slightly more protective than insoluble fiber, although the researchers cautioned those findings should be interpreted cautiously because not all studies estimated soluble vs. insoluble fiber intake.

Apples are one of the richest sources of fruit fiber. One medium, tennis ball-sized apple contains 5 grams of fiber, of both soluble and insoluble types; one slice of whole-wheat bread contains 2 grams of fiber.

All Carbs Not Equal

These findings make the case for increasing consumption of high-fiber apples and other foods for better health, joining previous research findings about high-fiber foods, the authors noted – and challenging the long-term health of diets that discourage eating high-fiber carbohydrates.

“The recommendations to consume a diet that includes an abundance of fiber-rich foods to prevent coronary heart disease are based on a wealth of consistent scientific evidence,” Pereira and his colleagues wrote.

“Quality of carbohydrates is important,” said Dr. Dianne Hyson, R.D., a professor at Sacramento State University who is considered the nation's leading authority on apple health benefits research. “These findings indicate that consumers should embrace, not avoid, fiber- and phytonutrient-rich fruits like apples for their better health.” ■

Spread the Word!

We hope you enjoyed this issue of *An Apple A Day* so much that you will share it with your friends! Persons interested in subscribing can contact USApple to get your own free e-mail subscription! Here's how:



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