



CRANBERRY HEALTH NEWS

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Cranberry: Beyond Urinary Tract Health

Leading cranberry health researcher, Amy Howell, Ph.D., from the Marucci Center for Blueberry Cranberry Research at Rutgers University, recently presented evidence of the health benefits of cranberries to registered dietitians attending the American Dietetic Association's annual meeting. Howell reviewed the nutritional profile of the cranberry – including its unique phytonutrient profile – and provided an in-depth review of the anti-adhesion potential and mechanisms. She reviewed the major studies supporting the health benefits of cranberry in urinary tract, oral cavity, gastrointestinal, cardiovascular and anti-cancer benefits.

Here is a snapshot of the information that the dietitians took home from Dr. Howell's in-depth cranberry presentation:

Anti-Adhesion Properties

- Proanthocyanidins (PACs) have been identified as the active anti-adhesion compound in cranberry.
- Cranberry's anti-adhesion mechanism interferes with the initial step in the infection process – it does not kill bacteria or treat like an antibiotic, it prevents infection.

Urinary Tract Health

- Clinical studies have found reductions in bacterial adhesion forces in the urine after consuming cranberry juice cocktail.

Oral Health

- The anti-adhesion properties of cranberry PACs have been shown to prevent or reduce dental caries in a rodent model, and may have potential benefits for periodontal health in humans.

Gastrointestinal Health

- PACs have been shown to prevent *H. pylori* adhesion to both the mucus and gastric cells, and inhibits bacterial growth, thereby helping to protect against stomach ulcers, a leading cause of stomach cancers.

Cardiovascular Health

- Cranberry helps to maintain cardiovascular health by decreasing inflexibility of the arteries, LDL oxidation and inflammation.

Cancer

- Cranberry may help inhibit cancer cell growth in the breast, colon and esophagus, as well as induce apoptosis and increase the effectiveness of chemotherapy for ovarian cancer treatment.

For more information on cranberries and health benefits, visit the Health Research Library on <http://www.cranberryinstitute.org/>.

Amy B. Howell, PhD presents the benefits of cranberries at the Dietitian's in Integrative and Functional Medicine Session at the American Dietetic Association Food & Nutrition Conference & Expo, September, 2011.

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New Cranberry Health Research

The Cranberry Institute tracks and funds cranberry health research around the globe. The CI also partners with industry organizations such as the Wisconsin Cranberry Board and Canadian Cranberry Growers Coalition, to fund research on the health benefits of the cranberry.

Cranberry Possesses Anti-Cancer Properties

Berries, including cranberries, have been recognized as functional foods that may help protect against several chronic diseases, including certain cancers. Two recently published papers looked at the cranberry and cancer connection.

It's well known that cranberries contain hundreds of bioactive compounds, and preliminary laboratory and animal research suggests that some of these phytonutrients may provide anti-cancer properties. A laboratory study conducted by researchers at the Women and Infants Hospital in Rhode Island, reported that cranberry proanthocyanidin treated ovarian cancer cells experienced greater cell death versus untreated cells. The researchers identified several mechanisms by which cranberry PACs promote tumor cell death.

In the second paper, researchers at the University of Massachusetts, Dartmouth, reviewed studies that reveal when whole cranberry or cranberry juice is consumed, phytonutrients in cranberries may act synergistically to provide anti-cancer properties. There are a variety of proposed mechanisms of action whereby cranberry may provide chemopreventive properties, including promoting tumor cell death and proliferation, as well as antioxidant and anti-inflammatory properties.

Bottom line: Preliminary lab and animal studies are promising for cranberry's cancer-fighting properties. There are strong *in vitro* data in colon, prostate and breast cancer cell lines but currently, data from human clinical trials are needed prior to drawing any conclusions about cranberry and human cancer.

References: Kim KK, et al. Anti-angiogenic activity of cranberry proanthocyanidins and cytotoxic properties in ovarian cancer cells. *Int J Oncol*. 2011 Sep 12. [Epub ahead of print]

Neto CC. Cranberries: ripe for more cancer research? *J Sci Food Agric*. 2011 Oct;91(13):2303-7. Epub 2011 Aug 30.

Cranberry Procyanidins May Reduce Risk for Type 2 Diabetes

Human studies suggest that cranberry flavonoids, anthocyanins and PACs may help blunt the glycemic response of carbohydrate-containing foods and beverages, including cranberry juice cocktail. A recently published study found that cranberry phytonutrients inhibit the glycation of hemoglobin and albumin—two biomarkers associated with increased risk of type 2 diabetes.

Researchers at the University of Florida prepared a cranberry phytonutrient extract and attempted to evaluate cranberry phytonutrients and their effect on human glycation by measuring various assays, including glycated human hemoglobin (HbA1c). Their results showed that cranberry procyanidins appeared to be the major active compounds of cranberries in this *in vitro* study.

Reference: Liu H, et al. Cranberry phytochemicals inhibit glycation of human hemoglobin and serum albumin by scavenging reactive carbonyls. *Food Funct*. 2011 Aug;2(8):475-82. Epub 2011 Aug 8.

Cranberry Miscellany: Fresh Cranberry Know How

'Tis the season...to stock up on fresh cranberries. Fresh cranberries are available from October through January so buy what you need now and freeze a bag or two for later. Frozen cranberries will retain their freshness for nine months. Here's the Cranberry Institute's Whole Berry Facts:

- A 12-ounce bag of fresh cranberries contains about three cups of berries.
- Place fresh berries directly into the freezer in their original bags.
- Do not wash before freezing, but wash thoroughly before using in recipes.
- Pick out any leaves, stems or bruised berries before using.
- An equal amount of frozen berries can be used in place of fresh in your favorite cranberry recipes

Meet Bill Cutts, a Third-Generation Cranberry Farmer

from New Jersey

One of the largest cranberry farming operations in North America isn't located where you may expect—Massachusetts or Wisconsin—rather it's in New Jersey. As the Principal of Cutts Brothers, LLC and Wading River Cranberries, LLC, Bill Cutts is a third-generation cranberry farmer, who harvested some 120-acres in the New Jersey Pinelands this fall. As part of the Ocean Spray grower cooperative, their fruit is used primarily for the company's juice products and Craisins®.

Cutts has been farming in New Jersey for about 25 years, after working in law (he holds a J.D. from Rutgers University School of Law) for several years while his father and his three brothers managed the cranberry and blueberry farms that the Cutts Brothers had at that time. "When I was growing up, I always wanted to be in farming, but it wasn't a strong industry at the time, so I figured I better find something else to make a living." But after several years, his father consolidated the business so that he and his brother and father could own and operate the family business.

As a farmer advocate for cranberry farming and research, Cutts is involved with many state agriculture committees and Rutgers University Agriculture Research Center manages research plots on his land, where they're studying new varieties with improved production and color. He's also served on the Cranberry Institute's Board of Directors for 15 years and has served as Chairman of the Board.

"Unlike practicing law, I love that cranberry farming has allowed me to be with my family more and share my love for farming with my children. The only thing *not* to like about growing cranberries is frost—it keeps us up all night!"



Cooking with Cranberry

Sweet-Tart Cranberry Chutney

This great tasting chutney is versatile enough to go with most main courses—from turkey and chicken to ham or pork tenderloin.

Ingredients:

- 1 (12-ounce) bag fresh or frozen cranberries*
- 3 Granny Smith apples, peeled, cored, and quartered
- 3 blood oranges or navel oranges, scrubbed, quartered, and any seeds removed
- 1 pineapple, peeled, cored, and cut into large chunks
- 1 cup sugar
- 1 cup chopped pecans
- ½ cup dried cranberries
- ½ cup dried cherries
- ½ cup dried strawberries

*Wash uncooked cranberries thoroughly before using.

Directions:

1. Place all of the ingredients into a food processor and pulse to combine a few times until everything is very finely chopped. (NOTE: If your food processor is not large enough to hold all of the ingredients, then make the chutney in two batches.)



2. Refrigerate overnight and serve the next day or the following day.

Yield: 6 cups

Cranberry Almond Bread

Use this recipe to make a fast and festive loaf or a dozen muffins for your next family brunch or holiday gathering.

Ingredients:

2 cups all-purpose flour
½ cup sugar
2 teaspoons baking powder
1 teaspoon salt
1 egg
¼ cup milk
½ cup butter
2 teaspoons almond extract
1 ½ cups fresh or frozen cranberries
¼ cup sliced almonds

Directions:

Preheat oven to 375° F.

Butter an 8 ½ x 4 ½ x 2 ½ loaf pan and set aside.

Combine flour, sugar, baking powder, and salt in a medium mixing bowl. Combine egg, milk, butter, and almond extract in a separate mixing bowl. Add wet ingredients to dry ingredients, mixing just until moist. Stir in cranberries.

Spread batter in the buttered loaf pan. Sprinkle with almonds. Bake for 45 minutes at 375° F.

Reduce heat to 350° F. Bake for an additional 30 minutes or until a toothpick inserted into the center comes out clean.

Yield: 1 loaf or 12 standard muffins

Recipes all courtesy of the Cranberry Marketing Committee, and are available at <http://www.uscranberries.com/recipes/default.aspx>.



Health and Research Professionals:

The Cranberry Health Newsletter is designed to bring the latest research about cranberry and health to practitioners concerned about the health and well being of patients.

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