



# Cranberry Health News

A Quarterly Publication of the Cranberry Institute

VOLUME 3, ISSUE 2

## In This Issue

Resveratrol Identified as  
an Anti-Cancer  
Compound

*page one*

Family Physicians:  
Cranberries for UTI  
Prevention

*page two*

Finding Cranberry Oral  
Health Products

*page two*

Antioxidants'  
Relationship with  
Memory Explored for a  
Brain-Smart Diet

*page three*

Calendar of Events

*page three*



[www.cranberryinstitute.org](http://www.cranberryinstitute.org)

## RESVERATROL IDENTIFIED AS AN ANTI-CANCER COMPOUND

New research suggests the importance of foods like cranberries that naturally contain resveratrol, an anti-cancer compound. A research team led by Dr. Bharat Aggarwal at the University of Texas M.D. Anderson Cancer Center, in conjunction with Dr. Navindra Seeram of the UCLA Center for Human Nutrition, David Geffen School of Medicine, published their review article, citing more than 70 previous studies, in the journal *Anticancer Research*.

### Antiproliferation

The authors reviewed studies examining resveratrol's ability to suppress proliferation of a wide variety of tumor cells, including lymphoid and myeloid cancers; cancers of the breast, colon, pancreas, stomach, prostate, head and neck, ovary, liver, lung and cervical cancers; melanoma; and muscles. Some studies indicate antiproliferative effects at certain dose ranges but not others, indicating further need for systemic research to test a range of resveratrol concentrations *in vitro* and then apply those doses *in vivo* to the different types of tumors.

### Apoptosis

Besides inhibiting proliferation, resveratrol was also shown to induce apoptosis through one of two pathways (inducing Fas-dependent apoptosis in some cell lines, and Fas-independent apoptosis in others) in b-cell and t-cell lymphomas; myeloid leukemia; breast, colon, pancreas, stomach, prostate, thyroid and head and neck, ovary, liver, lung, and cervical cancers; and melanoma. Most studies indicate resveratrol does not induce apoptosis in normal cells.

*In vitro* and animal studies comprised the majority of the research reviewed, though several of the leukemia studies were *in vivo*. The research points to anti-inflammatory and antioxidant effects of resveratrol as well. Good sources of resveratrol include grapes, peanuts, cranberries and other berries.

The researchers conclude that resveratrol holds great potential in cancer prevention and therapy. *In vivo* studies clearly showed that resveratrol is pharmacologically safe. Its ability to radiosensitize and chemosensitize suggest additional opportunities. With a simple structure and the presence of hydroxyl groups, resveratrol would also be well suited for structure-activity relationship studies to improve biopotency and bioavailability.

**Reference:** Aggarwal, BB. Role of Resveratrol in Prevention and Therapy of Cancer: Preclinical and Clinical Studies. *Anticancer Research* 2004;24:2783-2840.

## Finding Cranberry Oral Health Products

Our fall newsletter described the oral health benefits of cranberries, which possess an antiadhesion mechanism that may prevent bacteria from adhering to teeth and gums.

Many dietitians have expressed interest in learning about specific products they can refer to their patients and clients. While the Cranberry Institute cannot endorse any product, we offer the following list for informational purposes:

**Product:** BGSE Mint Toothpaste Gel

**Web Site:**  
[www.holisticbeauty.net](http://www.holisticbeauty.net)

**Product:** Grace Fibro-Smile Toothpaste in Cranberry

**Web Site:**  
[www.immunesupport.com](http://www.immunesupport.com)

**Product:** Grace Fibro-Smile Mouthwash in Cranberry

**Web Site:**  
[www.immunesupport.com](http://www.immunesupport.com)

**Product:** RADIUS Cranberry Coated Floss

**Web Site:**  
[www.radius toothbrush.com](http://www.radius toothbrush.com)

## FAMILY PHYSICIANS: CRANBERRIES FOR UTI PREVENTION

The December 2004 issue of *American Family Physician* provides an assessment by Dr. Darren Lynch of Beth Israel Medical Center (New York) of cranberries' ability to prevent urinary tract infections (UTIs). This overview may be particularly of interest for family physicians considering recommending consumption to their patients.

As described in previous issues of *Cranberry Health News*, current scientific research holds that the mechanism by which cranberries may prevent UTIs is antiadhesion, not acidification. The antiadhesion property prevents bacterial binding to the host cell surface membranes, inhibiting hemagglutination of *E. coli* and other gram-negative uropathogens by expression of types 1 and P adhesion through the component compounds fructose and proanthocyanidins.

Dr. Lynch notes that two good-quality trials with suitable sample sizes have been published since 2001. The first, a trial of 150 women, compared cranberry/lingonberry juice, probiotic supplementation with Lactobacillus GG drink and no intervention for 12 months. The study observed a statistically significant 20 percent reduction in absolute risk of infection in women receiving cranberry. A randomized, placebo-controlled trial, again tracking 150 women over a 12-month period, determined that cranberry juice and cranberry extract tablets significantly decreased the number of patients having at least one symptomatic UTI per year.

As for dosage, while each study has used different doses and formulations of cranberry products, Dr. Lynch's recommended dosing (based on the most current trial) is one tablet of concentrated cranberry extract (300 to 400 mg) twice daily or eight ounces of pure unsweetened cranberry juice three times daily. The Cranberry Institute notes that a grant from the National Institutes of Health supporting many cranberry studies -- all using the same cranberry formulation -- may help standardize and refine dosing advice in the near future. Other research suggests that even a single daily glass of cranberry juice cocktail can be a helpful preventative.

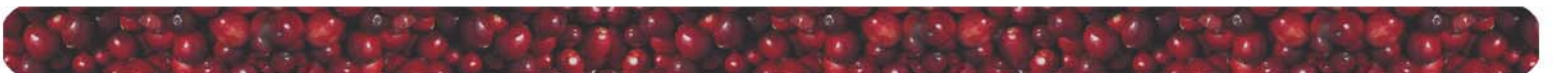
Dr. Lynch's analysis concludes that cranberries are a safe botanical medicine, effective in UTI prophylaxis. No significant herb-drug reactions with cranberries have been reported. Cranberries and cranberry products offer an effective, safe and cost-efficient method of preventing UTIs for the general population.

### Reference:

Lynch, DM. Cranberry for Prevention of Urinary Tract Infections. *American Family Physician* 2004;70:2175-2177.

Kontiokari, T. Randomised trial of cranberry-lingonberry juice and Lactobacillus CG drink for the prevention of urinary tract infections in women. *BMJ* 2001;322:1571.

Stothers, L. A randomized trial to evaluate the effectiveness and cost effectiveness of naturopathic cranberry products as prophylaxis against urinary tract infection in women. *Can J Urol* 2002;9:1558-1562.



## Calendar of Events

**Wisconsin Dietetic Association Annual Meeting – Visit the CI Booth**, April 27-29, 2005, Eau Claire, WI. For more information, visit [www.eatrightwisc.org](http://www.eatrightwisc.org)

**New York State Dietetic Association Annual Meeting – Attend the cranberry presentation**, May 6-7, 2005, Saratoga Springs, NY. For more information, visit [www.eatrightny.org](http://www.eatrightny.org)

**American Association of Nurse Practitioners Annual Meeting – Visit the CI Booth**, June 17-21, 2005, Ft. Lauderdale, FL. For more information, visit [www.aanp.org](http://www.aanp.org)

**American Dental Hygienists' Association Annual Meeting**, June 22-29, 2005, Henderson, NV. For more information, visit [www.adha.org](http://www.adha.org)

**School Nutrition Association Annual Meeting – Visit the Cranberry Marketing Committee booth**, July 17-20, 2005, Baltimore, MD. For more information, visit [www.asfsa.org](http://www.asfsa.org)

## ANTIOXIDANTS' RELATIONSHIP WITH MEMORY EXPLORED FOR A BRAIN-SMART DIET

Researchers in the field of Alzheimer's and other forms of age-related memory loss have begun to establish a link between nutrition and memory.

### Nutrition's Role in Countering Oxidation and Inflammation

The aging brain loses its ability to protect itself from inflammation and oxidation caused by a buildup of amyloid plaque. As a result, some brain cells die while others cease communicating with each other, thus preventing the brain from processing thoughts, retaining short-term memory and generating new cells.

Scientists now believe that dietary choices may decrease the brain's sensitivity to oxidation and inflammation, as well as improve neurons' ability to communicate with each other. Antioxidants – found in cranberries, grapes and other berries – appear to play a protective role. Foods rich in B vitamins such as niacin and folic acid or omega-3 fatty acids, as well as the Indian curry spice curcumin also appear to have memory-enhancing properties, and a human clinical trial is underway at UCLA on curcumin.

### Effect of Antioxidants

One animal study from the Institute for Brain Aging and Dementia at the University of California, Irvine, found that older dogs fed a diet rich in antioxidants over several years were able to perform tasks far better than those fed a standard diet. MRI scans later revealed structural changes in the brains of the dogs on the antioxidant diet, including a decrease in the amyloid plaque burden.

Another animal study from Neuroscience Lab at the Human Nutrition Research Center on Aging at Tufts University used aging mice genetically engineered to develop Alzheimer's. An antioxidant diet improved cognitive function including better memory and motor skills in a maze. The mice also exhibited fewer signs of damage from oxidation and inflammation in their brain tissue than mice fed a standard diet. They also had higher levels of chemicals necessary for brain cells to regenerate and communicate.

Researchers do not yet know exactly how the results of animal studies translate for humans, but they do believe that the antioxidants found in different fruits and vegetables, including cranberries, work synergistically, thus pointing to increased benefit from obtaining the antioxidants via foods rather than supplements.

### References:

Milgram NW. Dietary enrichment counteracts age-associated cognitive dysfunction in canines. *Neurobiol Aging* 2002;23:737-745.

Joseph, JA. Blueberry Supplementation Enhances Signaling and Prevents Behavioral Deficits in an Alzheimer Disease Model. *Nutritional Neuroscience* 2003;6:153-162.

Lim, G. The Curry Spice Curcumin Reduces Oxidative Damage and Amyloid Pathology in an Alzheimer Transgenic Mouse. *J. Neurosci.* 2001;21:8370-8377.

**On the Web:** <http://www.msnbc.msn.com/id/6560710/>