



*Weekly News from Berry Science*

# *April is Cancer Awareness Month!*

## *Reducing Risk of Cancer with Berries*

***Part 1 of 3***

"Fight cancer: unity is strength,  
knowledge is power and attitude is everything."

*Live Strong !*

***Lance Armstrong Foundation***

*click!*

American Cancer Society  
*Prevention and Early Detection*

*Add Fruits and Vegetables to Your Diet!*

*If you live in the Pacific Northwest, join*

*The Great Ride to Conquer Cancer*

June 20-21, 2009

*Cycling from Vancouver to Seattle*



*click!*

Other regions in Canada, *click!*

Follow the [Wikipedia](#) links

## *Berries and Cancer*

Let's have a look at recent research developments showing the potential for lowering your risk against cancer by having berries in your diet!

Seeram NP. University of Rhode Island

**Berry fruits for cancer prevention:  
current status and future prospects.**

*click for the research abstract!*

J Agric Food Chem. 2008 Feb 13;56(3):630-5.

"...the anticancer effects of berry bioactives are partially mediated through their abilities to counteract, reduce, and also repair damage resulting from **oxidative stress** and **inflammation**."

### Other Possible Effects of Berries and Disease Markers in Cancer Research (Seeram, 2008)

- regulate metabolizing enzymes important for cancer onset
- inhibit **growth factors**
- inhibit inflammatory **cytokines**
- inhibit cancer cell proliferation
- stimulate cancer cell **apoptosis**, causing the cells to die faster
- inhibit tumor **angiogenesis** (growth of new blood vessels supporting the tumor)
- may also potentially sensitize tumor cells to chemotherapeutic agents by inhibiting pathways that lead to treatment resistance
- may provide protection from therapy-associated toxicities



Cranberries (*Vaccinium macrocarpum* L.)

### Cranberries in Research on Cancer *(click links below for project summaries)*

[Note: the studies below have not yet been sufficiently confirmed in humans. Cranberry products have not been approved by the FDA for treating or preventing cancer]

- **Anticancer activities of cranberry phytochemicals**

*"...a potential role for cranberry as a dietary **chemopreventive**"*

- **In vitro evidence for anticancer activity of cranberries**

*"...extracts and compounds isolated from cranberry fruit (*Vaccinium macrocarpon*) inhibit the growth and proliferation of several types of tumor including breast, colon, prostate, and lung."*

- **Effect of cranberry juice concentrate on chemically-induced urinary bladder cancers**

*"...components of cranberries may be effective in preventing urinary bladder **carcinogenesis**"*



### Red Grapes in Research on Cancer *(click links below for project summaries)*

[Note: the studies below have not yet been sufficiently confirmed in humans. Grape products have not been approved by the FDA for treating or preventing cancer]

- **Anticancer effect of grape resveratrol on human breast cancer cells**

*"... resveratrol has a variety of biological and pharmacological activities including pronounced anticancer properties.*

*These effects are observed despite its extremely low bioavailability and rapid clearance from the circulation."*

- **Chemoprevention by resveratrol: molecular mechanisms and therapeutic potential**

*"Modulation of cell signaling pathway by resveratrol explains its diverse bioactivities related with human health.*

*Resveratrol also potentiates the apoptotic effects of cytokines, chemotherapeutic agents and gamma-radiation."*

**Resveratrol: leading berry phytochemical  
of 2008 research! [click!](#)**

Bottom Line?



*click on the image*

*US Centers for Disease Control and Prevention*

*Campaign to Encourage Increasing  
Dietary Intake of Whole Fruits & Vegetables*

*Next!*

- More research evidence for the anticancer effects of other berries!

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