

# What You Need to Know about Antioxidants and your Radiation Therapy

PMH

## Key points:

- Taking large amounts of antioxidant supplements (such as pills) can reduce the effects of your radiation treatment on cancer cells.
- Taking small amounts of antioxidants, like those found in food and some multivitamins is allowed.
- Do not take large amounts of antioxidant supplements during your radiation treatment and 1 week after your last treatment.
- If you normally take large amounts of antioxidant supplements, and if time allows, you should stop 1 week before your first radiation treatment.

*This information is to be used for informational purposes only and is not intended as a substitute for professional medical advice, diagnosis or treatment. Please consult your health care provider for advice about a specific medical condition. A single copy of these materials may be reprinted for non-commercial personal use only.*

© 2010 University Health Network. All rights reserved.

**Author: Developed by Oncology Dietitians, Registered Nurses, Pharmacists, Radiation Therapists and Radiation Oncologists of University Health Network with the support of the Patient Education Program**

**Created: 09/2004**

**Form: D-5021 (08/2010)**



## 1) What are antioxidants?

Antioxidants are nutrients which can be found naturally in some foods. They can also be found in supplements such as pills. Antioxidants protect your cells from damage caused by free radicals. These free radicals can cause cell damage that could lead to cancer. Antioxidants can protect cells by cancelling out the damage caused by free radicals. Antioxidants are good for normal cells because they can prevent the cells from being damaged, or help the cells to recover from damage.

Examples of common antioxidants are:

- Vitamin C    -Beta carotene
- Vitamin E    -Selenium

Please note the antioxidant supplements in this pamphlet refer to vitamin and mineral supplements (usually as pills) and NOT nutritional supplements such as Ensure® or Boost®.

## 2) What is the effect of taking large amounts of antioxidant supplements on my radiation treatment?

During radiation therapy, free radicals are produced that help to cause damage to the cancer cells. In the same way that antioxidants can protect normal cells, they can also protect cancer cells. This means that taking large amounts (i.e. above the daily recommended amount) of antioxidant supplements may reduce the effect of your radiation treatment on cancer cells.

Do not take large amounts of antioxidant supplements:

- For 1 week before your first radiation treatment if time allows
- During your radiation treatment
- For 1 week after your last treatment

Taking small amounts of antioxidants, like those found in food and some multivitamins, will not affect your radiation treatment. You can continue to eat foods that contain antioxidants as a part of your diet.

If you take a multivitamin, check your multivitamin bottle to make sure the amount of antioxidants does not go over the daily recommended amounts for adults using the table below:

Antioxidant	Daily Amount
Vitamin C	90 mg. for men 75 mg. for women
Vitamin E natural vitamin E (d-alpha-tocopherol) synthetic vitamin E (dl-alpha-tocopherol)	22 I.U. 33 I.U.
Selenium	55 mcg
Beta-carotene	no established level

*\*This table represents the daily recommended amounts from Health Canada.*

### **3) What if I am taking other vitamin and mineral supplements? Do I have to stop taking them too?**

Not all vitamin and mineral supplements are antioxidants. Not all other vitamin and mineral supplements need to be stopped. Talk to your doctor or pharmacist about what you can continue to take during your treatment.

### **4) I understand that I can continue to get antioxidants from food during my treatment. What are some good food sources of antioxidants?**

Many foods have antioxidants. It is OK to keep eating these foods, as they do NOT contain large amounts of antioxidants. You can get the nutrients your body needs by eating a variety of foods. The list below has examples of good sources of antioxidants.

#### **Vitamin C is found in:**

broccoli	cranberry juice	mango
Brussels sprouts	guava	papaya
cantaloupe	kiwi fruit	red peppers
citrus fruits	lychee nuts	strawberries
citrus juices		

#### **Vitamin E is found in:**

brown rice	nuts and seeds
whole wheat	green leafy vegetables
vegetable oils	wheat germ

**Beta-carotene is found in:**

apricots	carrots	sweet potatoes
broccoli	papaya	winter squash
cantaloupe	spinach	

**Selenium is found in:**

Brazil nuts	seafood	tuna
beef	organ meats	turkey
whole grains		

**5) If I have questions about antioxidants and my treatment, where can I go for help?**

If you have questions about antioxidants and your treatment, speak to a member of your health care team. Please bring your antioxidant supplement bottle(s) with you.

**References:**

J. National Cancer Institute 2008: 100:773-783 (Lawenda, Kelly, Ladas et al.)  
Cancer Treatment Review 2010 May; 36(3) 230-4 (Tabassum, Bristow, Venkateswaran)