

Antioxidants & Supplements: The Good, The Bad and The Ugly



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The Good...



Antioxidants



- ☞ Substances or nutrients that may protect your cells against oxidative damage.
- ☞ When your cells use oxygen they naturally produce “free radicals” (by products) which can cause damage.
- ☞ Antioxidants act like “free radical scavengers”.

- ☞ Examples
 - ☞ Vitamin A
 - ☞ Vitamin C
 - ☞ Vitamin E
 - ☞ Beta-carotene
 - ☞ Selenium
 - ☞ Lycopene

Antioxidants



- ❧ Plant foods contain these disease fighting compounds.
 - ❧ Substances that work together in complex ways
 - ❧ Not found in a pill, powder, drink, or bar
 - ❧ Isolated substances in supplements may perform differently in your body
- ❧ Plant based diet + regular exercise + avoiding tobacco use = most protection.
- ❧ More is not better with supplements.

Antioxidants



Cantaloupe, mangoes, papaya,
pumpkin, peppers, spinach, kale,
squash, sweet potatoes, apricots

Oranges, grapefruit, broccoli, leafy
green vegetables, tomatoes,
potatoes, strawberries

Walnuts, peanuts, almonds, seeds,
olives, avocado, wheat germ, liver



Dietary Supplements



Definition

- ☞ A product taken by mouth that contains a "dietary ingredient" intended to supplement the diet.

Dietary Ingredient

- ☞ a vitamin
- ☞ a mineral
- ☞ an herb or other botanical
- ☞ an amino acid
- ☞ enzymes or tissues from organs or glands, metabolite, constituent or extract

Supplements Can Be Useful



- ⌘ Those at higher risk for nutritional deficiencies
 - ⌘ People >50 yrs – vitamin B12
 - ⌘ Vegans – vitamin B12, Calcium, Vitamin D
 - ⌘ Pregnant women – folic acid
 - ⌘ Individuals on low calorie diets (<1200 kcal)
 - ⌘ High risk for osteoporosis – calcium
 - ⌘ Lactose intolerance – vitamin D, calcium

The Bad...



Dietary Supplements



- ❧ Cancer patients and survivors take more multiple vitamin and mineral supplements than the general population.
- ❧ Unclear if supplements can reduce treatment related symptoms.
 - ❧ Guidelines are conflicting
- ❧ American Cancer Society
 - ❧ Use during treatment is controversial and potentially harmful
 - ❧ Taking a general multivitamin when unable to consume a healthy diet may be beneficial

Dietary Supplements



- ❧ High doses of vitamins, minerals, herbs are not recommended.
- ❧ Excess amounts of some supplements can increase cancer risk.
- ❧ The National Cancer Institute
 - ❧ Avoid multiple vitamin mineral supplements during treatment or take supplements only when recommended by physician.

Dietary Supplements



- ❧ Not obligated to follow strict government regulations.
- ❧ FDA approval not needed.
- ❧ FDA does not analyze contents.
- ❧ Herbal supplements prone to variation.
- ❧ Independent organizations offer a “seal of approval”
 - ❧ Contents are the ingredients listed and does not contain harmful levels of contaminants

Dietary Supplements



- ⌘ Based on currently available science...
 - ⌘ Individuals with cancer should avoid using high doses of supplements during treatment
 - ⌘ Rather, rely on dietary source of nutrients



The ugly...



Dietary Supplements



❧ The long-term effect of large doses of these nutrients has not been proven.

Dietary Supplement



- ❧ Some herbal supplements may interact with other medications.
- ❧ Many cancer medications have a very small 'window' in which they work.
- ❧ In other words...
 - ❧ You have to have *just the right amount* of these medications in your body in order for them to fight the cancer most effectively.

In other words...



- ❧ Think of the cells in your body as containing *little chemical systems*.
- ❧ The body uses many different 'chemical systems' to process medications
- ❧ You can think of these systems as '*medication processing factories*'.
- ❧ These *factories* allow your body to get rid of the medications once they have done their job.
- ❧ So that medications don't build up to toxic levels.

In other words...



- ❧ Now, here is the tricky part. Sometimes, the medications that you take AND herbs that you take are processed by the same *factory*.
- ❧ If this is true, this can affect how *both* the medication and the herb work.

Dietary Supplements



❧ *Medications May Not Work Properly*

❧ If this happens, your medications may not do what they should do to fight your cancer.

❧ Also, your medications may not do what they should do to manage your symptoms.

Dietary Supplements



❧ *Medications May Be Processed Too Quickly*

❧ If this happens, you may not have enough of your medication in your body to do the job of fighting your cancer.

Dietary Supplements



- ❧ *Medications May Be Processed Too Slowly*
- ❧ If this happens, you may end up with too much medication in your body.
- ❧ This could be toxic or cause damage to your liver or other organs.

Dietary Supplements



❧ *Other Concerns*

- ❧ Herbs can change how your body absorbs and moves around the medications from place to place in the body.
- ❧ Interactions between different substances in the body can be very complex.

Dietary Supplements



- ❧ *Keep in mind that if you are taking medications to treat cancer, talk to your health care team about ALL other medications, dietary supplements, herbs, vitamins, and minerals.*
- ❧ Do not take the advice of a health store clerk, a well-meaning friend or neighbor, or anyone who isn't a qualified health care provider.

Bottom Line



Bottom Line



- ❧ If taking supplements...
- ❧ Talk with your physician to ensure safety
- ❧ Be Informed

Bottom Line



- ❧ Other chemicals and substances found in food may also be responsible for the beneficial effects.
- ❧ Eat 5-8 servings of fruits and vegetables daily.
- ❧ Eat whole grains and beans.

References



- ❧ <http://www.caring4cancer.com/go/cancer/nutrition/questions/can-dietary-supplements-interfere-with-cancer-treatment.htm>
- ❧ Marian, M., & Roberts, S. (2010). Clinical Nutrition for Oncology Patients. In M. Maria (Ed.), *Integrative Oncology* (pp.409-438). Sudbury, MA: Jones and Bartlett



Q&A Session