

Nutrition & The Cancer Connection



This cancer prevention packet was designed by the Polk County School Board Wellness Team to encourage your active participation in personal health. The guidelines presented will help you lower your risk of various cancers and other medical conditions, empower you to make healthier lifestyle choices, and improve your quality of life. These guidelines are not intended to replace the advice of your medical provider.



ABCs of Health

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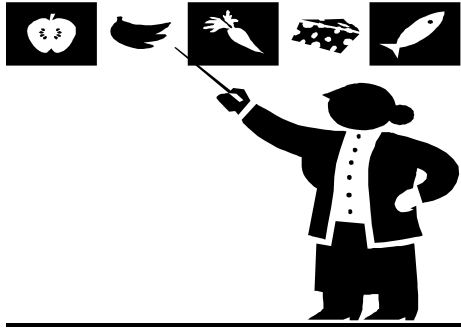
Table of Contents

<u>Topic</u>	<u>Page Number</u>
Cancer definition	3
Fruits and Vegetables	4-5
Whole Grains	6-7
Meat	8
Obesity and Overweight	8
Physical Activity	8-9
Alcohol Intake	9
Fat Intake	10
Salt and Sodium	10-11
Food Safety	12
Skin Cancer	12
Smoking and Tobacco	13
Complementary and Alternative Medicine	13-14
Resources Used	15

This information was developed by the Polk County School Board Wellness Team utilizing the latest guidelines and evidence based research. If you have concerns that are not answered in the booklet or have further questions please feel free to call one of your Wellness Team members listed below at (863) 648-3057.

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Nutrition and the Cancer Connection



What is Cancer?

Cancer is a term used to classify more than 100 diseases. Cancer is generally characterized by an uncontrolled growth and potential spread of abnormal cells.¹

Cancer is a disease that can affect anyone. Approximately 1.4 million new cases of cancer are expected to be diagnosed in 2007. This figure does not include an additional one million new cases of skin cancer for 2007.²

What Causes Cancer?

Cancer can be caused by both genetic and environmental factors. Some can be prevented and some cannot. According to the American Cancer Society (ACS), about one-third of the cancer related deaths in 2007 will be related to overweight or obesity, physical inactivity, and poor nutrition. Many more cancer related deaths will be due to tobacco and smoking, including cigars, pipes, smokeless tobacco and cigarettes. For confidential assistance kicking the habit, call the QUITLINE at 1-877-U-CAN-NOW (1-877-822-6669) or visit www.tobaccofreeflorida.com.

Cancer Prevention

Behaviors such as avoiding exposure to tobacco products, maintaining a healthy weight, staying physically active throughout life, and consuming a healthy diet can substantially reduce one's lifetime risk of developing cancer. The Wellness Program has developed this guide as a tool to help you reduce your risk of cancer.



1. Choose a diet rich in a variety of plant-based foods, including fruits, vegetables, and whole grains. Limit consumption of processed and red meats.

Fruits and Vegetables in Cancer Prevention

Fruits and vegetables provide essential vitamins, minerals, and fiber, along with phytochemicals (fi-to-KEM-ih-kuls) or natural plant substances, and polyphenols (pol-e-FE-nols) that have antioxidant activity. These antioxidants give fruits and vegetables the potential to hinder disease-promoting molecules known as free radicals and prevent or repair their damaging effects.

Deeply colored vegetables and fruits are generally highest in antioxidants.

Antioxidants (an-te-OK-sih-dunts) are your cell's protectors. They include:

Vitamin A found in carrots, greens, broccoli, spinach, bok choy, sweet potatoes, acorn squash, pumpkin, apricots, and cantaloupe and gives some fruits and vegetables their orange or red color.

Vitamin E found in oils, nuts, and whole grains.

Vitamin C found in citrus fruits, mangoes, kiwi, berries, melon, cabbage, tomatoes, broccoli, potatoes, and peppers.

Vegetables (including legumes) and fruits are complex foods; they contain many bioactive substances that protect us on different cellular levels.

<i>Bioactive substances</i>	<i>Food sources</i>
Lycopene	Tomatoes and tomato based products (especially cooked tomato products), guava, red grapefruit and red bell pepper.
Flavonoids (Fla-vuh-noids)	Array of chemicals found in fruits (berries), vegetables, wine, coffee and tea.
Isoflavones (I-so-Fla-vones)	Soybeans and soy products.
Lignans ('lig-"nan)	Flax, sesame, and sunflower seeds, broccoli. ³
Organo sulfur compounds	Allium family which includes garlic, onion, leeks, chives and Shallots.
Monoterpenes (mah-noh-TER-peens)	Citrus, peppermint and caraway seeds.
Saponins	A family of carbohydrates, asparagus, oats, soybeans and other legumes and herbs.
Resveratrol (rehz-VEHR-uh-trahl)	Red grapes, grape juice, berries and peanuts.

What are legumes?

The term legume (LEG-yoom) refers to beans, lentils, chickpeas, lima beans, black-eyed peas and split peas. These foods are very adaptable, easy to prepare and good sources of fiber and iron.

Choose a variety of fruits and vegetables, at least 2-½ to 4 cups daily including legumes such as:

- Cruciferous (kroo-SIF-ur-us) vegetables (e.g. cabbage, broccoli, cauliflower, and Brussels sprouts, bok choy and kale).
- Citrus fruits and juices (oranges, lemons, limes and grapefruits).
- Dark green leafy vegetables (lettuce, spinach, Swiss chard, mustard/collard/turnip greens).
- Dark yellow/orange/red fruits and vegetables.

A good rule:

- Eat at least 3 different colors of fruits and vegetables every day (yellow/orange, red, blue/purple, green).
- Include high-fiber legumes (dried beans and peas) at least twice a week.
- Include fresh fruits (fresh, frozen or dried instead of juice) often.
- Eat a variety of vegetables.
- Limit French fries, chips, and other fried vegetable products.
- Choose 100 percent juice if you drink vegetable or fruit juices. If weight loss is a concern, be mindful of the caloric content of juices.



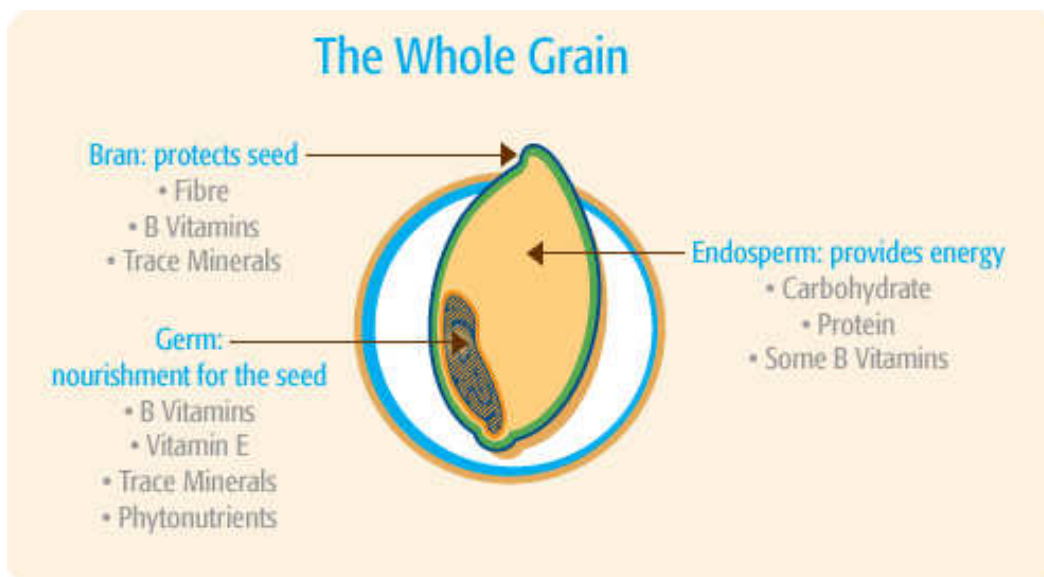
Whole Grains and Cancer Prevention

Whole grain foods are made from the entire grain, which includes the outer shell (bran), the endosperm with complex carbohydrates and protein, and the germ. Many of the potentially beneficial nutrients, including fiber and phytochemicals, occur in the bran and the germ. Fiber moves cancer-causing compounds out of the body before they can create harm. It is also thought to dilute potential carcinogens, and may affect hormone production, thus lowering the incidence of hormone-related cancers like breast and prostate cancers.

The National Cancer Institute recommends 20-30 grams of fiber per day.

Whole grains include amaranth, whole barley, buckwheat, whole corn, popcorn, millet, whole oats, quinoa, whole rye, sorghum, triticale, whole wheat, bulgur (cracked wheat) brown and wild rice.

Refined grains have been milled, removing the bran and germ. Without the bran and germ, about 25 percent of a grain's protein is lost, along with at least 17 key nutrients including iron, thiamin, riboflavin, niacin, and magnesium. Usually the refined grains are enriched, which means some B vitamins and iron are added back after processing so that refined products still contribute valuable nutrients. However, fiber is not added back to most enriched grains. Whole grains are healthier, providing more protein, fiber, vitamins and minerals. White flour, white bread, white pasta and white rice are refined grains.



Is the product 100 percent whole grain?

Check the ingredient list and “Nutrition Facts” label. For most but not all "whole grain" food products, the words "whole" or "whole grain" should appear before the name (i.e., whole wheat bread). Some refined grains may lead you to believe they are whole grains such as 9-grain, hearty grain or multi-grain breads, but they are not.

Use the “Nutrition Facts” label to help you choose whole grain products with a higher percent daily value (% DV) for fiber. Fiber varies from grain to grain, ranging from 3.5 percent in rice to over 15 percent in barley and bulgur. Both fiber and whole grains have been shown to have health benefits.

Look for the whole grain stamp on foods you buy.

The whole grain stamps pictured below are found on packages of whole grain foods. Eight grams of whole grain is considered $\frac{1}{2}$ a serving and 16 grams of whole grain is considered a full serving.



The **Cancer Research and Prevention Foundation** suggests that you substitute:

- Brown rice for white.
- Whole wheat bread or rye for white.
- Black beans for ground meat.
- Bran muffin for croissant or pastry.
- Popcorn for potato chips.
- Unpeeled apple for applesauce.
- Baked potato with skin for mashed potato.
- Bean dip or salsa for sour cream dip.

How much is enough?

The Dietary Guidelines for Americans recommend that everyone eat at least half their grains as whole grains. For adults, this means three or more ounces of whole grains every day.

Physical Activity

People who exercise both moderately and vigorously have a lower risk of colon and breast cancer. The risk has been shown to be lower despite one's weight. So, if you are overweight but exercise moderately most days, you will have a lower risk of colon and breast cancer, along with a lower risk of many other diseases. Exercise can also lower the risk of prostate, lung and endometrial (lining of the uterus) cancer. The American Institute for Cancer Research recommends one hour a day of moderate activity and one hour a week of vigorous activity. Physical activity promotes regular bowel movements, which decreases the time potential cancer-causing substances are present in the colon—further lowering colon cancer risk. Physical activity helps promote favorable responses from hormones and insulin along with improving metabolism, all of which can lower one's risk of cancer. Physical activity has been shown to help improve immune and inflammatory markers, which lower the risk of colon cancer.¹



3. Drink alcohol only in moderation, if at all.

Alcohol intake increases the risk of many cancers including esophageal, liver, breast, throat and larynx. The risk of cancer is increased with alcohol and tobacco to a greater extent than either alone. Breast cancer risk is higher in people who drink alcohol. Thus, those with a family history of breast cancer, or at high risk of breast cancer should avoid alcohol. For heart disease, your doctor may recommend red wine. However excessive alcohol intake can dramatically increase one's risk of cancer. It is best to get your resveratrol, the antioxidant in wine and grapes, from grapes not wine, to help lower your risk of cancer. If you do drink alcohol it's best to limit your intake to two servings per day for men, one serving per day for women. One drink is equal to five ounces of wine, 12 ounces beer, or 1-½ ounces of liquor.

4. Select foods low in fat and salt.

Studies of many different cultures have revealed that the populations with the highest levels of fat consumption are also the ones with the highest death rates from breast and colon cancer. The lowest rates are found in groups with the lowest consumption of fats. Many studies indicate that fat in foods increases one's risk for cancer, and may adversely affect breast cancer survival rates for those who have cancer. Although the total amount of fat one eats is of concern, there is evidence that animal fat is much more harmful than vegetable fat. Fat has many effects within the body. It increases hormone production and thus raises breast cancer risks. It also stimulates the production of bile acids, which have been linked to colon cancer. The average diet in the United States is about 37 percent fat. The National Cancer Institute suggests that people lower the percentage of fat in their diet to 30 percent; however, studies have shown that fat intake should be well below 30 percent to have an anti-cancer affect. Of particular concern are saturated fats (found mostly in animal based foods) and trans-fats (partially hydrogenated oils), both known contributors to heart disease risk. The American Institute for Cancer Research (AICR) recommends minimizing the saturated fats and trans-fats in your diet. Choose moderate amounts of monounsaturated fats such as nuts, nut butters, olive oil and canola oil.



Tips to reduce fat in your diet:

- Trim skin and excessive fat from meat.
- Decrease consumption of fried foods.
- Use less spreads, salad dressings, and oils at the table.
- Eat smaller portions.
- Read food labels to determine the amount of fat and nutrients in a product.
- Substitute low-fat foods such as: plain, low-fat yogurt, blender-whipped low-fat cottage cheese, or skim milk in dips, sauces and recipes.

Evidence suggests that eating salt-cured, smoked, pickled and charcoal broiled foods increases cancer risk. A high intake of these foods has been linked to cancers of the stomach and esophagus. Keep your intake of sodium, which is more commonly known as salt, below 2,400 milligrams (mg) each day. Here are some tips to keep you on track:



Limit your use of processed foods. Did you know that as much as 75 percent of the sodium in the typical "American" diet comes from processed foods?

Processed foods high in sodium to limit:

- Frozen meals/TV dinners
- Canned foods
- Canned soups
- Microwave meals
- Crackers, pretzels, and chips
- Cured, smoked, and salted meats
- Cereals
- Processed cheeses

Tips to reduce salt in your diet:

- Limit the amount of salt you use in cooking.
- Do not add salt to your food, and remove the salt shaker from the table.
- Use salt substitutes such as Mrs. Dash; avoid potassium-containing salt substitutes if your doctor has told you to do so.
- Look for and avoid hidden sources of excess sodium found in flavorings such as lemon pepper, Asian seasoning, herb chicken seasoning, and meat tenderizer.
- Watch for terms that mean salt and sodium, even if they don't look familiar to you. Some "salty" ingredients in many foods include: monosodium glutamate (MSG), sodium citrate, sodium sulfite, sodium caseinate, sodium benzoate, sodium hydroxide, and disodium phosphate.

5. Prepare and store foods safely.

Cancer researchers have linked eating grilled meat, poultry and fish with certain health risks. As grilling and broiling cause "muscle meats" (red meat, poultry and fish) to produce cancer-causing compounds, limit contact time between the meat and the fire by pre-cooking meats prior to grilling. Trim fat and skin poultry to keep fats from encouraging flames. Avoid charred or burnt meat. If the food does get charred or burned cut those pieces off. Cook meats such as burgers at a lower temperature and flip them more often to help prevent carcinogens from forming. Another healthy option is marinating with herbs, spices, fruit juices and vinegar, some of which contain cancer fighting phytochemicals.

Always remember to practice food safety as follows:

- Avoid cross-contamination. Use separate cutting boards, dishes and utensils for raw and canned meats.
- Don't baste with used marinating liquid. Make extra marinade to use for basting.
- Refrigerate foods that are marinated longer than 30 minutes.
- Wash your hands prior to meal preparation and between preparing raw and ready to eat foods.
- Do not leave cooked food out more than 2 hours, 1 hour in extreme heat.

6. Limit your exposure to sunlight and UV light.



Sunlight is also known as a carcinogen, and is the number one cause of skin cancer. Basal cell and squamous cell carcinomas are the most common types of skin cancer. Melanoma is less common but is the most deadly type of skin cancer, if not detected early.

To lower your risk of skin cancer you should:

- Always wear sunscreen with a Sun Protection Factor, or SPF, of 15 or more when outdoors, even on overcast or rainy days.
- Avoid being outside in the sun during the middle of the day between 10 and 4 when the sun's rays are strongest.
- Wear sunglasses.
- Avoid tanning beds.
- Inspect your skin for any color changes, or mole changes at least yearly, and see your doctor for any suspicious changes.
- Get on the Lakeland Regional Cancer Center bus conveniently located at your worksite for your annual screening.

7. Do not use tobacco products in any form.

- Avoid smoking cigarettes, cigars, pipes and all forms of chewing tobacco or snuff.
- Avoid second hand smoke exposure.
- Avoid smoking clove or herbal cigarettes, which also cause cancer.

8. Dietary Supplements and Cancer

People with cancer can be particularly susceptible to the lure of herbal remedies or other non-medical therapies including dietary supplements. As defined by the Dietary Supplement Health and Education Act of 1994, a dietary supplement is:

- Intended to supplement the diet, and contains one or more dietary ingredients including vitamins, minerals, herbs or other botanicals, amino acids, or their constituents;
- Intended to be taken by mouth, as a pill, capsule, tablet or liquid;
- Labeled on the front panel as a dietary supplement.

Even though dietary supplements are regulated by the US Food and Drug Administration (FDA) as foods, they are regulated differently from other foods and from drugs. Often classification as a dietary supplement is determined by the information that the manufacturer provides on the product label or in accompanying literature. Today's dietary supplements are not only vitamins and minerals, but include other less familiar substances such as herbals, botanicals, amino acids, and enzymes. Dietary supplements come in a variety of forms such as tablets, capsules, powders, energy bars, or drinks. If you do not consume a variety of foods, as recommended by the Food Guide Pyramid and Dietary guidelines for Americans, some supplements may help ensure you get adequate amounts of essential nutrients or help promote optimal health and performance. However, a dietary supplement is not intended to treat, diagnose, mitigate, or cure a disease. Some supplements can have unwanted effects before, during or after surgery. It is important to let your doctor and other health care professionals know about any products you are taking.

Whatever your choice, supplements should not replace prescribed medications or the variety of foods important to a healthful diet.

What should you know before using a Dietary Supplement?

Be wise! Follow these tips before buying a dietary supplement:

- **Safety First.** Do not substitute a dietary supplement for a prescription medicine or therapy. Some supplements' ingredients, including nutrients and plant components, can be toxic based on their activity in your body.
- **Learn to Spot False Claims.** Remember: If something sounds too good to be true, it probably is not true. Some examples of false claims include:
 - Quick and effective "cure all."
 - Can treat or cure disease.
 - "Totally safe", "all natural," and has "definitely no side effects."
 - Limited availability, "no risk, money-back guarantees," or requires advance payment.
- **More may not be better.** Some products can be harmful when consumed in high amounts, for a long time, or in combination with certain other substances.
- The term "**natural**" doesn't always mean safe. Do not assume that this term ensures wholesomeness or safety.
- **Think: Is the product worth the money?** Resist the pressure to buy a product or treatment "on the spot." Some supplements may be expensive and may not provide the benefit you expect.
- **Do not self diagnose any health condition.** Check with your health care providers before taking any supplements.

Portions of the **Nutrition and the Cancer Connection** guidelines were compiled based on the following sources:

1. American Institute for Cancer Research, Washington, DC 20069; www.aicr.org
2. American Cancer Society, 777 Third Avenue, New York, NY 10017; www.cancer.org
3. DietaryFiberFood.com
4. National Cancer Institute, Cancer Information Service, Bethesda, MD 20205 -- or call the Cancer Information Service at: 1-800-4-CANCER. www.cancer.gov
5. Bell Institute of Health and Nutrition: Whole Grain Is More Than Fiber: 2006, General Mills Inc. www.bellinstitute.com
6. Cancer Research and Prevention Foundation, www.preventcancer.org
7. Australia Journal of Nutrition and Disease: (2001) 58 Suppl 2 S34-48. Cereal foods, fibers and the prevention of cancers.
8. Dept. of Health and Human Services/US Dept of Agriculture, Dietary Guidelines for Americans, 2005. www.health.gov/dietaryguidelines/dga/2005/ and www.healthierus.gov/dietaryguidelines.com
9. Wheat Foods Council; www.wheatfoods.org and www.wholegrainscouncil.org
10. Health Promotion Center at UCI <http://www.healthpromotioncenter.uci.edu/>
11. International Food Information Council Foundation, March 2006
12. Deutsche Gesellschaft fuer Ernaehrung e. V. DGE aktuell - 12.12.2006. Frankfurt am Main, Germany. www.dge.de
13. Mayo Clinic, Rochester, MN; www.mayoclinic.com
14. Office of Dietary Supplements: National Institutes of Health – facts sheets
15. <http://www.nutricoach.net/Carbohydrates.html>
16. National Cancer Institute <http://cancer.gov>