

LATE BREAKING NEWS

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Nutrition for the Cancer Survivor **Perspectives of Members of the Children's Oncology Group** **(COG) Cancer Control – Nutrition Sub-Committee**

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A healthy lifestyle with maintenance of a normal blood pressure and body weight may help in the preservation of the organs affected by chemotherapy including the lungs, heart, liver, bone and the remaining kidney. The purpose of this article is to review recommendations for healthy lifestyle including nutritional intervention and resources for the cancer survivor. Specific treatment recommendations from your oncologist and after-care team take priority.

IMPACT of CHILDHOOD CANCER on NUTRITION and PHYSICAL ACTIVITY

Cancer survivors are often faced with nutritional challenges after treatment ends. Many patients may experience immediate or acute effects of treatment during therapy or immediately following treatment. The effects of childhood cancer on nutrition and physical activity

will be different for each cancer survivor. Some survivors may have problems with gaining too much weight, while others may have a hard time gaining weight. The effects from cancer and its treatment may appear weeks, months or even years after the treatment is completed. As indicated in the table on page 3, these late/long-term effects can have significant health implications and require continued monitoring and intervention for nutritional concerns. The goals for every survivor should include being as physically active as possible, maintaining an optimal body weight as well as adhering to a healthy diet. The American Cancer Society defines a cancer survivor in the following way: "from the time of diagnosis and for the balance of life, a person living with cancer is a survivor.²" Since survivorship spans many phases of treatment and post-treatment it is important that survivors be provided with ongoing education to continue to make informed choices.

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Good nutrition and regular exercise offer many benefits to childhood cancer survivors. These benefits include: promoting the healing of tissues and organs damaged by cancer and its treatment, building strength and endurance, reducing the risk of certain types of adult cancers and other diseases, decreasing stress, and providing a feeling of well-being.³

SUGGESTIONS for HEALTHY EATING AFTER CANCER

The American Cancer Society has published Guidelines for Nutrition after treatment ends:⁴ These recommendations have been modified to include more information from other sources.⁵⁻⁷ Check with your doctor for any food or diet restrictions.

- **Ask** your dietitian to help you create a nutritious, balanced eating plan.
- **Choose** a variety of foods from all the food groups.
- **Protein**—Choose foods low in saturated fats (lean meats, poultry, fish, low-fat and non-fat dairy products), egg whites and plant based sources of protein. Avoid salt-cured, smoked, and pickled foods.
- **Carbohydrate**—Choose whole grains, fruits, vegetables and legumes which are good sources of fiber, phytochemicals and other protective substances. Many phytochemicals, which are found in fruits and vegetables have anticancer properties and act as antioxidants.⁸ Higher levels of fruit and vegetable intake may also be associated with a reduced risk of some cancers.⁹ A goal of at least 5 to 7 servings a day of fruits and vegetables, including citrus fruits and dark-green and deep-yellow vegetables is recommended as well as eating plenty of high-fiber foods, such as whole grain breads and cereals.
- **Fat**—Dietary fat is composed of fatty acids which are the main building blocks that the body uses to make fat. There are three types of fatty acids:
 - 1) **Saturated fatty acids (SFA)**—solid at room temperature and usually come from animal products (ie. meat fat, lard, milk, butter, cheese). SFA can also be found in some plant sources (ie. coconut and palm oil, margarines and fat spreads). A high intake of this type of fat can raise LDL (bad type of cholesterol) and increase risk for cardiovascular disease.
 - 2) **Monounsaturated fatty acids (MUFA)**—usually liquid at room temperature and found in olive and rapeseed oil, but also found in meat fat and in some nuts and seeds. This type of fat does not raise cholesterol levels,

and has been shown to lower LDL, but does not lower HDL (good type of cholesterol).

3) **Polyunsaturated fatty acids (PUFA)**—usually liquid at room temperature. There are two subclasses of fatty acids that are PUFAs (Omega-6 and Omega-3):

- **Omega-6 fatty acids** are found in vegetable oils from corn, sunflower, safflower, cottonseed and soybean. This type of fat can lower LDL as well as HDL.
- **Omega-3 fatty acids** are found in soybean, linseed (flax) and canola oil as well as deep-sea fish (i.e. sardines, tuna and wild salmon), or “fatty fish.” Focus on foods high in Omega-3 fatty acids rather than saturated fats as these types of oils have been documented to have a role in reducing the risk of heart disease, inflammation and other chronic diseases¹⁰⁻¹³ as well as the risk for certain kinds of cancers.^{14,15}
- **Trans fatty acids** are created when liquid vegetable oils are manufactured to create more solid fats for spreading (i.e. margarine and in baked goods). These fats are often referred to as “hydrogenated fats” and have been shown to increase LDL and reduce HDL which can be associated with increased risk of cardiovascular disease.⁷
- **Buy** a new fruit, vegetable, low-fat food, or wholegrain product each time you shop for groceries.
- **Decrease** the amount of fat in your meals by baking or broiling foods.
- **Drink** alcohol only occasionally if you choose to drink.
- **If** you are overweight, consider losing weight by reducing the amount of fat in your diet and increasing your activity. Choose activities that you enjoy. Check with your doctor before starting any exercise program.

Adults: Engage in at least 30 minutes of moderate to vigorous physical activity, above usual activities, on 5 or more days of the week; 45 to 60 minutes of intentional physical activity are preferable.

Children and adolescents: Engage in at least 60 minutes per day of moderate to vigorous physical activity at least 5 days per week.

- **Use** the American Cancer Society Nutrition Guidelines for Cancer Survivors to help choose foods for a well-balanced meal plan. These are available at www.cancer.org.

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Resources:

American Cancer Society (ACS): provides information on all aspects of cancer and cancer support
www.cancer.org

American Cancer Society, Dietary Supplements: offers information on dietary supplements, vitamins, minerals, and herbal products
www.cancer.org/docroot/MBC/MBC_6_1_DietarySupplements.asp

American Dietetic Association Complementary Care Practice Group: website of the Complementary Care Dietetic Practice Group, promotes integration of conventional nutrition practices with evidence-based alternatives.
www.complementarynutrition.org

American Institute for Cancer Research (AICR): offers a variety of services, from a nutrition hotline to healthful living tips
www.aicr.org

Cancer Nutrition Info: provides information on cancer prevention and symptom management
www.cancernutritioninfo.com

Children's Oncology Group: provides information about pediatric cancers and clinical trials
www.childrensoncologygroup.org

Columbia University Rosenthal Center, Carol Ann Schwartz Cancer Initiative: provides information about current complementary research studies and findings
www.rosenthal.hs.columbia.edu

CureSearch National Childhood Cancer Foundation and Children's Oncology Group are partners in the search to cure childhood cancer;
www.curesearch.org

Diana Dyer's Web Site: provides information and inspiration for cancer survivors regarding nutrition and lifestyle choices from a three-time cancer survivor.
cancerRD.com

Guide to Internet Resources for Cancer: provides more than 100 pages and more than 4,000 links to cancer-related information.
www.cancerindex.org

Lance Armstrong Foundation; aims to enhance the quality of life for those living with, through, and beyond cancer
www.laf.org

MEDLINEPLUS: provides links to current trustworthy health care informed compiled by the National Library of Medicine at the National Institutes of Health (NIH).
www.nlm.nih.gov/medlineplus

National Cancer Institute (NCI): provides information on cancer diagnosis, treatment, and supportive care, including nutrition information and PDQ summaries.
www.cancer.gov

National Cancer Institute Cancer Information Service/PDQ: provides current, comprehensive information on all major types of cancer, treatments, and clinical trials.
www.cancernet.nci.nih.gov

National Cancer Institute: Patient Information on Nutrition During Cancer Treatment: resources on cancer treatments and effects on nutrition status.
Cancer.gov/cancerinfo/pdq/supportivecare/nutrition/patient

National Cancer Institute: Summary of Complementary Therapies: offers summaries of substances promoted to cancer patients.
www.cancer.gov/cancerinfo/pdq/cam

National Coalition for Cancer Survivorship: network of organizations and individuals concerned with the support of cancer survivors and their families.
www.canceradvocacy.org

Office of Dietary Supplements: NIH site about dietary supplements.
www.ods.od.nih.gov

Oncolink: provides information on different types of cancer, treatment options, clinical trials and resources.
cancer.med.upenn.edu

Oncology Nursing Society: provides information for health care providers, people with cancer, and their caregivers.
ons.org

Oncology Nutrition Dietetic Practice Group Web Site: includes valuable resources for patients, dietitians, and other health care professionals
oncologynutrition.org

Quackwatch: a nonprofit corporation whose purpose is to combat health-related frauds, myths, fads, and fallacies.
www.quackwatch.org