

Preventing Cardiovascular Complications

As people get older, the risk for developing cardiovascular problems, such as heart attack and stroke, increases. Additional factors that increase the risk of developing cardiovascular problems include:

- Being overweight or obese
- High blood pressure
- Unhealthy cholesterol levels (high LDL, high triglycerides, or low HDL)
- Prediabetes or diabetes mellitus
- Smoking
- Excessive alcohol intake
- Family history of heart disease

Certain cancer treatments given during childhood, adolescence, or young adulthood may increase the risk of developing cardiovascular complications. It is important for you to be aware of these risks so that you can practice healthy habits that can help prevent cardiovascular problems.

What increases the risk for being overweight or obese?

Treatment factors:

- Radiation to the brain or head (especially at doses of 18 Gy or higher)
- Surgery to the brain affecting the “mid-brain” area (containing the pituitary gland)

Other known risk factors:

- Overeating
- Eating a diet that is high in fats and sugar
- Not having regular physical activity
- Having certain medical conditions, like an underactive thyroid (hypothyroidism), or low levels of GH

What increases the risk for high blood pressure?

Treatments factors:

- Ifosfamide
- Cisplatin
- Carboplatin
- Radiation involving the kidneys, including the abdomen, flank, and total body irradiation (TBI)
- Removal of one kidney (see related Health Link: [Single Kidney Health](#))
- Hematopoietic cell transplant (particularly if complicated by chronic graft-versus-host disease)

Other known risk factors:

- Being overweight or obese
- Having a family history of high blood pressure

- Not getting regular physical activity
- Eating a diet that is high in salt

What increases the risk for unhealthy cholesterol levels (including high triglycerides and low HDL)?

Treatment factors:

- Total body irradiation (TBI)
- Abdominal radiation

Other known risk factors:

- Being overweight or obese
- Having a family history of unhealthy cholesterol levels
- Not getting regular physical activity
- Eating a diet high in fat

What increases the risk for high blood sugar/diabetes mellitus?

Treatment factors:

- Abdominal radiation
- Total body irradiation (TBI)
- Prolonged treatment with corticosteroids, such as prednisone or dexamethasone

Other known risk factors:

- Being overweight or obese (note that survivors who received TBI may be at increased risk even if they are not overweight or obese)
- Having a family history of diabetes

How I can I tell if I am overweight or obese?

Visit with your health care provider about your weight to determine if you are at a healthy weight for your height, age and activity level. The body mass index (BMI) is a tool your provider may use to help determine if you are at a healthy weight. BMI calculators and information on how to interpret results are available on-line at www.cdc.gov/healthyweight/assessing/bmi/.

What can I do to lower my risk of cardiovascular complications?

- Get regular check-ups and follow your health care provider's recommendations regarding how often you need blood pressure checks and blood tests to monitor your cholesterol and/or blood sugar levels.
- Eat a healthy diet (See related Health Link: [Staying Health through Nutrition and Physical Activity](#)).
- Increase physical activity if you are able (See related Health Link: [Staying Health through Nutrition and Physical Activity](#)).
- Avoid smoking. If you are interested in quitting smoking, online assistance is available from the National Institutes of Health at www.smokefree.gov.

- If you are overweight, obese, have high blood pressure, unhealthy cholesterol levels and/or high blood sugar, see your health care provider regularly. Follow their recommendations for additional testing, if needed, and for ongoing treatment of your health condition.
- In some cases, medications may be required to treat these conditions. If you are prescribed medications, be sure to take them regularly and to carefully follow your health care provider's instructions.

Written by Adam J. Esbenshade, MD, MSci, Vanderbilt University/Ingram Cancer Center, Nashville, TN.

Reviewed by Linda Rivard, RN, BSN, CPON; Melissa Acquazzino, MD, MS; and Kayla L. Foster, MD, MPH.

Additional health information for childhood cancer survivors is available at
www.survivorshipguidelines.org

Note: Throughout this *Health Links* series, the term “childhood cancer” is used to designate pediatric cancers that may occur during childhood, adolescence, or young adulthood. Health Links are designed to provide health information for survivors of pediatric cancer, regardless of whether the cancer occurred during childhood, adolescence, or young adulthood.

Disclaimer and Notice of Proprietary Rights

Introduction to Late Effects Guidelines and Health Links: *The Long-Term Follow-Up Guidelines for Survivors of Childhood, Adolescent, and Young Adult Cancers* and accompanying *Health Links* were developed by the Children's Oncology Group as a collaborative effort of the Late Effects Committee and Nursing Discipline and are maintained and updated by the Children's Oncology Group's Long-Term Follow-Up Guidelines Core Committee and its associated Task Forces.

To cancer patients (if children, their parents or legal guardians): Please seek the advice of a physician or other qualified health provider with any questions you may have regarding a medical condition and do not rely on the Informational Content. The Children's Oncology Group is a research organization and does not provide individualized medical care or treatment.

To physicians and other healthcare providers: The Informational Content is not intended to replace your independent clinical judgment, medical advice, or to exclude other legitimate criteria for screening, health counseling, or intervention for specific complications of childhood cancer treatment. Neither is the Informational Content intended to exclude other reasonable alternative follow-up procedures. The Informational Content is provided as a courtesy, but not intended as a sole source of guidance in the evaluation of childhood cancer survivors. The Children's Oncology Group recognizes that specific patient care decisions are the prerogative of the patient, family, and healthcare provider.

No endorsement of any specific tests, products, or procedures is made by Informational Content, the Children's Oncology Group, or affiliated party or member of the Children's Oncology Group.

No Claim to Accuracy or Completeness: While the Children's Oncology Group has made every attempt to assure that the Informational Content is accurate and complete as of the date of publication, no warranty or representation, express or implied, is made as to the accuracy, reliability, completeness, relevance, or timeliness of such Informational Content.

No Liability on Part of Children's Oncology Group and Related Parties/Agreement to Indemnify and Hold Harmless the Children's Oncology Group and Related Parties: No liability is assumed by the Children's Oncology Group or any affiliated party or member thereof for damage resulting from the use, review, or access of the Informational Content. You agree to the following terms of indemnification: (i) “Indemnified Parties” include authors and contributors to the Informational Content, all officers, directors, representatives, employees, agents, and members of the Children's Oncology Group and affiliated organizations; (ii) by using, reviewing, or accessing the Informational Content, you agree, at your own expense, to indemnify, defend and hold harmless Indemnified Parties from any and all losses, liabilities, or damages (including attorneys' fees and costs) resulting from any and all claims, causes of action, suits, proceedings, or demands related to or arising out of use, review or access of the Informational Content.

Proprietary Rights: The Informational Content is subject to protection under the copyright law and other intellectual property law in the United States and worldwide. The Children's Oncology Group retains exclusive copyright and other right, title, and interest to the Informational Content and claims all intellectual property rights available under law. You hereby agree to help the Children's Oncology Group secure all copyright and intellectual property rights for the benefit of the Children's Oncology Group by taking additional action at a later time, action which could include signing consents and legal documents and limiting dissemination or reproduction of Informational Content.