

Gastrointestinal Health after Childhood Cancer

Treatment for childhood cancer can sometimes cause scarring and chronic problems of the intestines (bowel) or other parts of the gastrointestinal (GI) system. It is important to know about the GI system so that you can recognize symptoms and keep your GI system healthy.

How does the gastrointestinal system work?

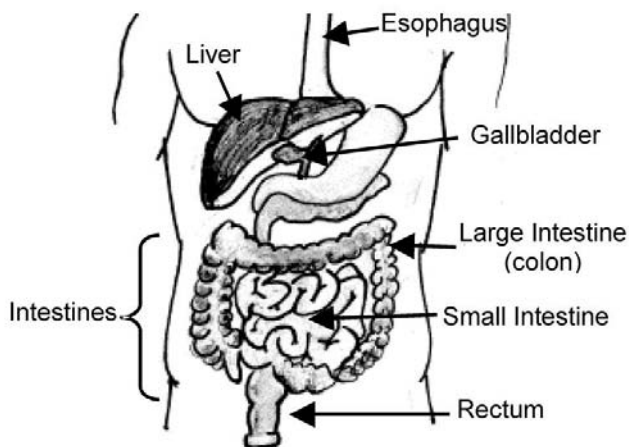
The GI system (also known as "the digestive system") is a group of organs that are joined in a long, twisting tube from the mouth to the anus. The purpose of the GI system is to digest (break down) the food that we eat. This allows the body to use food to build and nourish cells and provide energy.

What types of GI problems can arise after treatment?

The types of problems can vary depending on the treatment that was given. Generally, GI problems occurring after treatment for childhood cancer are related to surgery or radiation. The effects depend on the location of the surgery, the radiation treatment field, and the dose of radiation received.

Problems that can develop include:

- **Bowel obstruction** (blockage of the intestines) – the risk is higher for people who have had a combination of abdominal radiation and surgery.
- **Esophageal stricture** (scarring and narrowing of the tube that delivers food from the mouth to the stomach) - this is usually a result of radiation and can cause problems with swallowing.
- **Gallstones** (solid deposits of cholesterol or calcium salts that form in the gallbladder or bile ducts) - the risk is increased in people who had abdominal radiation.
- **Hepatic fibrosis** or cirrhosis (scarring of the liver) – the risk is increased for people who received radiation to the abdomen, or for those with a chronic liver infection (hepatitis).



- **Chronic enterocolitis** (inflammation of the intestines resulting in chronic diarrhea and abdominal pain) – the risk is increased after abdominal or pelvic radiation.
- **Colorectal cancer** (cancer of the large intestine) – the risk is increased for people who had abdominal or pelvic radiation (*see related Health Link "Colorectal Cancer"*).

What treatments increase the risk for developing a gastrointestinal problem?

- **Surgery** involving the abdomen or pelvis
- **Radiation** at doses of 30 Gy (3000 cGy/rads) or higher to the:
 - Neck
 - Chest
 - Abdomen
 - Pelvis
- **Other risk factors include:**
 - History of bowel adhesions (scarring)
 - History of bowel obstruction (blockage)
 - History of chronic graft-versus-host disease (cGVHD) of the intestinal tract
 - Family history of colorectal or esophageal cancer
 - Family history of gallstones
 - Tobacco use

What are the possible symptoms of a gastrointestinal problem?

- Chronic acid reflux (heartburn)
- Difficult or painful swallowing
- Chronic nausea or vomiting
- Abdominal pain
- Chronic diarrhea
- Chronic constipation
- Black tarry stools or blood in stool
- Weight loss
- Changes in appetite
- Abdominal distension/feeling bloated
- Jaundice/yellow eyes, yellow skin (*see related Health Link: "Liver Health"*)

If you develop any of these symptoms, see your healthcare provider. Symptoms that come on quickly or are severe (such as the sudden onset of abdominal pain and vomiting) may indicate a more urgent problem (such as a bowel obstruction) requiring immediate medical evaluation.

What medical tests are used to screen for a gastrointestinal problem?

Screening for problems affecting the GI system involves an annual physical examination by a qualified health care professional. X-rays, blood tests, and testing for small amounts of blood in the stool (called the guaiac test) are sometimes needed. An **ultrasound** may be needed if gallstones or gallbladder problems are suspected. Additionally, certain tests that examine the inside of the colon (**colonoscopy**) or esophagus (**endoscopy**) with special instruments are sometimes needed.

What can be done to prevent gastrointestinal problems?

- **Develop a healthy nutrition plan. *Suggestions for a healthy diet include:***

- Choose a variety of foods from all the food groups. Use the Food Guide Pyramid (www.mypyramid.gov) to help choose foods for a well-balanced meal plan.
- Eat 5 or more servings a day of fruits and vegetables, including citrus fruits and dark-green and deep-yellow vegetables.
- When drinking juice, choose 100% fruit or vegetable juice, and limit to about 4 ounces a day.
- Eat plenty of high fiber foods, such as whole grain breads, rice, pasta and cereals. Avoid foods high in sugars (such as candy, sweetened cereals, and sodas).
- Buy a new fruit, vegetable, low-fat food, or whole grain product each time you shop for groceries.
- Decrease the amount of fat in your meals by baking, broiling or boiling foods and not eating fried foods.
- Limit intake of red meat by substituting fish, chicken, turkey or beans. When you eat meat, select leaner cuts and smaller portions.
- Limit fried and high-fat foods, such as fries, snack chips, cheeseburgers, and pizza.
- Choose low-fat milk and dairy products.
- Avoid salt cured, smoked, charbroiled and pickled foods.
- Be sure that you eat foods rich in calcium, such as milk, yogurt and dark green vegetables.

- **Avoid cancer-promoting habits**

- Do not smoke or use tobacco products.
- Avoid second-hand smoke when at all possible.

- **If you drink alcohol, use moderation**
 - Heavy drinkers (people who drink two or more hard drinks per day), especially those who use tobacco, have a higher risk of GI cancer and other gastrointestinal problems.
 - Limiting the use of alcohol can reduce these risks.
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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.

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. **Disclaimer and Notice of Proprietary Rights**

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