Neurogenic Bladder following Treatment for Childhood Cancer

Certain types of cancer and certain cancer treatments can cause damage to the urinary bladder. The information in this Health Link will help you to recognize the signs and symptoms of a neurogenic bladder.

What is the urinary bladder?

The urinary bladder is a hollow organ that stores urine. It is located behind the pubic bone. The kidneys filter the blood and make urine, which enters the bladder through two tubes called "ureters". Urine leaves the bladder through another tube, the urethra. In women, the urethra is a short tube that opens just in front of the vagina. In men, it is longer, and passes through the prostate gland and then the penis.

What is a neurogenic bladder?

A neurogenic bladder is abnormal function of the bladder caused by damage to the nerves that control the bladder's ability to fill, store and empty urine. Abnormal bladder function can cause the bladder to be underactive (not emptying completely) or overactive (emptying too frequently or quickly). People with neurogenic bladders also have a higher risk of urinary tract infections (UTIs) and kidney damage.

What are the symptoms of a neurogenic bladder?

There may be a sudden urge to urinate or the need to urinate frequently. There may also be dribbling during urination, straining in order to urinate, or the inability to urinate.

Who is at risk of a neurogenic bladder?

People who have had tumors involving the bladder, prostate, pelvis, or spine are at risk of developing neurogenic bladder. Also, people who had surgery or radiation in these areas may be at risk.

How is a neurogenic bladder diagnosed?

If a neurogenic bladder is suspected, an evaluation should be done by a urologist. A urologist is a physician who specializes in disorders of the urinary tract. The urologist...
will order tests to determine how well the bladder is able to store and empty urine, such as a voiding cystourethrogram (VCUG) or bladder cystometry.

**What can I do if I have a neurogenic bladder?**

Treatment of neurogenic bladder is based on your individual needs. Medications may be useful for an overactive bladder or for a bladder that fails to store urine properly. Surgery to enlarge the size of the bladder may be needed if the medications are not successful.

Removal of urine by insertion of a small, clean tube in the urethra several times a day (intermittent catheterization) may be necessary if you cannot completely empty your bladder. This helps prevent high pressure in the bladder that interferes with flow of urine from the ureters and kidneys.

**When should I call my healthcare provider?**

Call your healthcare provider if you are awakened more than usual during the night to urinate, if leakage of urine occurs, any time fever or pain is present, or if blood is seen in the urine.

---

Written by Patricia Shearer MD, MS, Pediatric Hematology/Oncology, Ochsner Clinic, New Orleans, Louisiana; Michael Ritchey, MD, Pediatric Urology Associates, Phoenix, Arizona; Fernando A. Ferrer, MD, Department of Surgery, Connecticut Children’s Medical Center, Hartford, Connecticut; and Sheri L. Spunt, MD, Hematology/Oncology, St. Jude Children’s Research Hospital, Memphis, Tennessee.

Reviewed by Jill Meredith RN, BSN, OCN®, Wendy Landier RN, MSN, CPNP, CPON®, and Joan Darling PhD.

Illustrated by Devika Bhatia
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.

For Informational Purposes Only: The information and contents of each document or series of documents made available from by the Children's Oncology Group relating to late effects of cancer treatment and care or containing the title "Long-Term Follow-Up Guidelines for Survivors of Childhood, Adolescent, and Young Adult Cancers" or the title "Health Link", whether available in print or electronic format (including any digital format, e-mail transmission, or download from the website), shall be known hereinafter as "Informational Content". All Informational Content is for informational purposes only. The Informational Content is not intended to substitute for medical advice, medical care, diagnosis or treatment obtained from a physician or health care provider.

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.