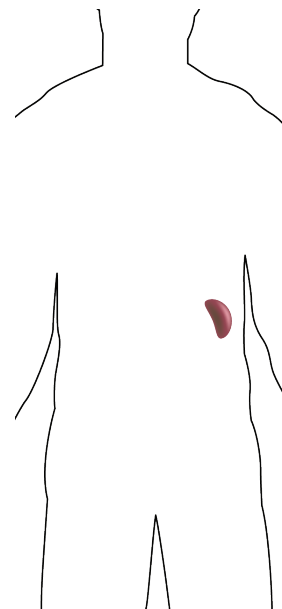


Precautions for People Without a Functioning Spleen

The spleen is an organ about the size of a person's fist that is located in the upper left side of the abdomen under the rib cage. The spleen helps the body fight infection by filtering the blood. Individuals who lack a functioning spleen are at increased risk for developing serious infections by specific bacteria (*Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Neisseria meningitidis*) and some parasites transmitted by insects (malaria and *Babesia*).



Who is at risk for a non-functioning spleen and infections?

- Individuals who had their spleen surgically removed (splenectomy)
- Individuals who received a high dose of radiation (at least 40 Gy/4000 cGy) to the abdomen
- Individuals with active chronic graft-versus-host disease following a bone marrow or stem cell transplant

What are the signs of infection and when should I seek treatment?

- Fever is an important sign of infection. A fever is a temperature at or above 101°F (38.3°C).
 - If you have a fever and a non-functional spleen (or have undergone splenectomy), you should seek urgent medical attention. Fever may be a sign of a serious bacterial infection and requires blood work and the administration of antibiotics to determine if a bacterial infection is present.
- Other symptoms of infection include unusual tiredness, muscle aches, chills, headache, vomiting, diarrhea, and abdominal pain. These symptoms can be warning signs of infection even without a fever. Take your temperature regularly any time you develop symptoms of infection or appear ill.
- If you are having symptoms that you are not sure are related to an infection, contact your healthcare provider for further recommendations.

Is there anything I can do to decrease the risk of infection?

- Vaccinations against haemophilus influenza (HiB), pneumococcus (PCV and PPSV), meningococcus (Men-ACWY, MenB), and influenza can decrease the risk of a serious infection.
- In some cases your health care provider may recommend antibiotics to prevent an infection. These antibiotics are called “prophylactic” antibiotics and are taken daily. Antibiotics can decrease the risk of infection in younger children or individuals who are at higher risk of infection.

What vaccines should an individual receive if they have a non-functioning spleen?

- In addition to the recommended vaccinations for all children and adolescents, individuals with a non-functioning spleen should receive the following immunizations:
 - Due to the increased risk of pneumococcal infections, individuals over 2 years of age should receive the PPSV23 vaccine at least 8 weeks after their last dose of routine pneumococcal vaccination and then revaccinate with PPSV23 vaccine 5 years after the first dose.
 - Vaccination to meningococcus is recommended for individuals without a functional spleen as early as 2 months of age. The number and timing of doses is dependent on the type of vaccine received and age at initiation. Vaccination for meningococcal serogroup B is also recommended above 10 years of age.
- Vaccines can be given by your primary care provider.
- Some primary care providers may not be familiar with your specific catch up or booster vaccine schedule. Make sure to give your primary care provider your cancer team's contact information for questions.

Other precautions

Individuals with a non-functioning spleen are at increased risk for other infections:

- **Malaria:** If you travel to countries where malaria is common, take special precautions to avoid getting malaria. Ask your healthcare provider for anti-malarial medications before travel to infested areas. During travel, use insect repellants and other protective measures, such as netting and protective clothing.
- **Animal/Human Bites:** Animal and human bites can result in serious bacterial infections in individuals with a nonfunctioning spleen. If you receive a bite that breaks the skin, seek immediate medical attention for treatment with antibiotics.
- **Ticks:** People without a nonfunctioning spleen are at increased risk for an infection caused by Babesia, a parasite transmitted by deer ticks. Deer ticks are most commonly found in the northeastern United States. You should wear protective clothing and use insect repellants when going outdoors in tick-infested areas. If you receive a tick bite while in an area infested with Babesia, you should remove the tick and talk to your healthcare provider about what to do.

How will my healthcare providers know about my non-functioning spleen?

- Be sure to tell your doctors, dentists, and other healthcare providers that you do not have a functioning spleen.
- You should wear a medical alert emblem (bracelet or necklace) in case of a medical emergency.
- Consider carrying a wallet card, with guidelines for healthcare professionals regarding the management of fever in people without a functioning spleen.

Written by S. Ashley Speckhart, MD, MPH, Maine Children's Cancer Program, Teresa Sweeney, RN, MSN, CPNP, St. Jude Children's Research Hospital, Memphis, TN; and Wendy Landier, PhD, CPNP, Children's Hospital of Alabama, Birmingham, AL.

Reviewed by Kayla L. Foster, MD, MPH and Melissa Acquazzino, MD, MS.

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.

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Wallet Card for Patients Without a Functioning Spleen



_____ Physician Phone:
_____ Physician Name:
_____ Patient Name:
MEDICAL ALERT Asplenic Patient
MEDICAL ALERT: Asplenic Patient This patient is asplenic and at risk for potentially fatal, overwhelming infections. Immediate medical attention is required for fever of $\geq 101^{\circ}\text{F}$ (38.3°C) or other signs of serious illness. Suggested management includes: <ol style="list-style-type: none">1. Physical exam, CBC and blood culture.2. Administration of a long-acting, broad-spectrum parenteral antibiotic (e.g., ceftriaxone) accompanied by close clinical monitoring while awaiting blood culture results.3. Hospitalization and broadening of antimicrobial coverage (e.g., addition of vancomycin) may be necessary under certain circumstances, such as the presence of marked leukocytosis, neutropenia, or significant change from baseline CBC; toxic clinical appearance; fever $\geq 104^{\circ}\text{F}$; meningitis, pneumonia, or other serious focus of infection; signs of septic shock; or previous history of serious infection.

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