



SEPSIS:

A Guide to Understanding Sepsis



WHAT IS SEPSIS?

Sepsis is a life-threatening complication of infection that arises when the body's response to infection injures its own tissues and organs. While sepsis can occur with any infection, it most commonly occurs with pneumonia, urinary tract infections, skin infections, wound infections or abdominal infections. **"Septicemia"** or **"blood poisoning"** are other terms that are sometimes used to describe sepsis.

WHO IS AT RISK

Anyone can get infection, and any infection can lead to sepsis. However, sepsis is most likely to develop in people who:

- **Are old or very young (particularly children younger than 1 year and adults over 65 years)**
- **Have a weakened immune system due to medical conditions or treatments, such as cancer, chemotherapy, or other medications that suppress the immune system**
- **Have wounds or injuries, such as after surgery or accidents**
- **Are pregnant or postpartum**
- **Have indwelling medical devices, such as urinary or intravenous catheters**
- **Have recently had sepsis, antibiotics, or steroids**
- **Have medical conditions such as diabetes, kidney disease, liver disease, lung disease, or neurological disorders**

Sepsis can develop either while a patient is hospitalized for reasons other than sepsis or can develop outside of a hospital.

WHAT INFECTIONS LEAD TO SEPSIS

Sepsis can result from an infection in any part of the body, and sometimes the cause of the infection is unknown.

The most common types of infections leading to sepsis are:

- **Pneumonia:** infection of the lung, including influenza
- **Urinary tract infection:** infection of the bladder (cystitis) or kidney (pyelonephritis)
- **Peritonitis:** infection in the abdomen
- **Cellulitis or abscess:** infection of the skin or underlying tissue
- **Colitis or diverticulitis:** infections of the bowel
- **Bacteremia:** infection in the bloodstream, for which the source may not be known
- **Meningitis:** infection of the membranes surrounding the brain and spinal cord

WHAT ARE COMMON SYMPTOMS OF SEPSIS

Symptoms of sepsis can vary a great deal between different patients. There is no single symptom or diagnostic test that can confirm whether sepsis is present. However, the following are common symptoms that may be experienced by patients with sepsis:

- **Fever, chills, shivering, or feeling cold**
- **Rapid breathing or shortness of breath**
- **Fast heart rate or lightheadedness**
- **Confusion, disorientation, or decreased level of alertness**
- **Clammy or sweaty skin**
- **General weakness or exhaustion**
- **Decreased amount of urine or darker urine**
- **Other symptoms of infection, including cough, congestion, pain on passing urine, body aches, vomiting; also, pain, swelling, or redness of the skin**

Newborn babies may be colicky, not feed well, or have fewer wet diapers, vomiting, seizures, or yellowing of skin or eyes (jaundice).

Sepsis is a life threatening illness, with common signs and symptoms. Early access to healthcare leads to early treatment and better outcomes.

HOW IS SEPSIS TREATED?

Treatment for sepsis includes:

- antimicrobial drugs, such as antibiotics or antivirals.

Many people will need:

- intravenous fluids to maintain adequate blood pressure
- oxygen therapy via tubing or a mask to maintain adequate oxygen levels

In addition, some people will need:

- intravenous medication (“vasopressors”) to maintain adequate blood pressure
- a surgery or procedure to remove a source of infection (e.g. removal of an infected appendix, or drainage of an abscess)
- treatments to support lung, kidney, and/or heart function (“life support”), such as a breathing machine (“mechanical ventilation”), dialysis, or medications to help the heart pump blood
- medicines to control pain or make them sleepy so that they can tolerate life support
- artificial feeding through a tube from the nose into the stomach, or directly into the veins
- a tube placed in a large vein, often in the neck, to deliver medications

Many diagnostic tests including blood tests, cultures, and/or radiology tests (e.g. x-rays, CT scans) may be required to determine the source of infection.

HOW CAN I REDUCE MY RISK OF SEPSIS?

- Get recommended vaccines, such as pneumonia vaccine and yearly influenza vaccine
- Take good care of your ongoing medical conditions
- Wash your hands often with soap and water
- Clean and cover cuts until they are healed
- Avoid touching your eyes, nose, or mouth with unwashed hands
- Minimize close contact people who have symptoms of acute respiratory illness, such as coughing or sneezing
- Get evaluated by a medical professional when you have a suspected infection
- Seek treatment immediately if you have symptoms of sepsis (e.g. high fever, confusion or disorientation, shivering)



HOW COMMON IS SEPSIS?

Sepsis is more common than heart attack and stroke combined.

SEPSIS RESEARCH

Many research studies are underway to better understand and treat sepsis. Patients who participate in research studies make an important contribution to improving sepsis care, and can sometimes access new treatments. If you are interested in contributing to research, you should ask the clinical team caring for you or your loved one to tell you about any studies at your hospital.

ADDITIONAL RESOURCES

- JAMA patient page on problems that happen after sepsis: <https://jamanetwork.com/journals/jama/fullarticle/2667724>
- African Sepsis Alliance: <https://www.africansepsisalliance.org/>
- Australian Sepsis Network: <https://www.australiansepsisnetwork.net.au/resources>
- European Society of Intensive Care Medicine (ESICM): <https://www.esicm.org/resources/sepsis-resources/>
- Global Sepsis Alliance (GSA): <https://www.global-sepsis-alliance.org/>
- US Centers for Disease Control and Prevention (CDC): Get Ahead of Sepsis Campaign: <https://www.cdc.gov/sepsis/education/index.html>
- World Health Organization: <https://www.who.int/sepsis/en/>
- Definitions of sepsis: <https://sites.jamanetwork.com/sepsis/>



The ISF is a volunteer organization dedicated to the advancement of the treatment of sepsis