

A photograph of four young children in a classroom, with their arms raised and mouths open as if participating in a lesson or activity. The image is overlaid with a semi-transparent red filter.

# SEPSIS AND CHILDREN

Sepsis can affect anyone at any time but it does tend to strike more often when people are at the extremes of life: the very old and the very young. As a result, children, particularly infants and premature babies, can be more susceptible to developing sepsis.

Sometimes incorrectly called blood poisoning, sepsis is the body's often deadly response to infection or injury. Like strokes or heart attacks, sepsis is a medical emergency that requires rapid diagnosis and treatment. Sepsis kills and disables millions and requires early suspicion and rapid treatment for survival.

If left untreated, sepsis can progress to septic shock and death. Worldwide, one-third of people who develop sepsis die. Many who do survive are left with life-changing effects, such as post-traumatic stress disorder (PTSD), chronic pain and fatigue, organ dysfunction (don't work properly), and/or amputations.

More than 75,000 children in the U.S. develop severe sepsis each year. Almost 7,000 die. This is more than those who die of pediatric cancers. Sepsis in the developing world is even more serious, causing many more deaths among children.

Sepsis can occur from infections resulting from unsanitary conditions at birth, maternal infections passed on to newborns, or preventable infections, particularly in countries with limited vaccinations and medical care. Like adults, children can develop sepsis as the result of any type of infection.

## Neonatal Sepsis

When a child develops sepsis within a few months of birth (up to 90 days), it is called neonatal sepsis. If the sepsis develops within 24 hours of birth, it is called early-onset.

Sepsis that develops after delivery is called late-onset neonatal sepsis. The risk of early-onset neonatal sepsis increases if:

- The mother has group B Streptococcus infection while pregnant
- The baby is premature
- The mother's membranes rupture (water breaks) more than 24 hours before the baby is delivered

Babies can develop sepsis after birth if they become infected by bacteria, a virus, or a fungus (rare). Certain situations increase the risk of a baby getting sick. They include:

- Being in the hospital for treatment
- Being exposed to people who have contagious infections

The most common infections that can cause sepsis in babies include:

- Respiratory syncytial virus (RSV)
- Cytomegalovirus (CMV)
- E. Coli
- Candida
- Herpes simplex virus
- Listeria monocytogenes

Very young babies and those who have medical problems may not be able to receive childhood vaccines at the recommended times, making them more vulnerable to infection. Many of these childhood diseases can lead to severe complications, such as sepsis. The most common ones are:

- Rubella (German measles)
- Varicella (chicken pox)
- Haemophilus influenzae type b (Hib)

## Infection

Any open cut or scrape should be cleaned properly as quickly as possible and kept clean. We all have bacteria on our skin, but when it gets into a wound, it could cause an infection. A common wound infection is caused by Staphylococcus bacteria, more specifically, Staphylococcus aureus.

Bacteria can enter your body through something as simple as a scrape on the knee or elbow, or even from a surgical incision. With the advent of the “superbug” or methicillin-resistant Staphylococcus aureus (MRSA), there are some infections that can be much more difficult to treat than others.

Infections can occur in other ways as well. Children, like adults, can develop illnesses such as urinary tract infections, ear infections, pneumonia, even meningitis. Left untreated, these can all lead to sepsis.

## COMMON SYMPTOMS

Signs and symptoms of neonatal sepsis include:

- Change in body temperature
- Difficulty breathing
- Diarrhea
- Reduced movements
- Difficulty sucking

In general, signs of sepsis in children include:

- High fever (above 100.4 degrees)
- General illness or a previous injury, such as a scrape or cut
- Shortness of breath or very rapid heart beat
- Drop in or no urine output

People who have survived sepsis often say that they felt the worst they ever felt in their life. For example, they had the worst sore throat of their life, the worst stomach pain, etc. Best rule of thumb? When in doubt, check with your doctor or bring your child to the ER for evaluation. Remember this rule of thumb for helping identify sepsis symptoms:

- T** **Temperature:** Higher or lower than normal
- I** **Infection:** May have signs and symptoms of an infection
- M** **Mental Decline:** Confused, sleepy, difficult to rouse
- E** **Extremely Ill:** Severe pain, discomfort, shortness of breath

Sepsis needs to be suspected and recognized as quickly as possible. It must be treated fast as every hour sepsis is not treated, the risk of death increases.

Treatment is with IV fluids and antibiotics. Other medications, such as those to raise blood pressure may be needed. If your child is admitted to an intensive care unit (ICU), you may see many machines used to monitor various things, such as body function (heart rate, blood pressure), medications and IV fluids, and perhaps a ventilator to help your child breathe.

The key to preventing sepsis is to prevent an infection from occurring in the first place. If an infection does set in, it must be treated as quickly and effectively as possible.

The risk of getting an infection also drops with proper hand washing. Thorough, proper, and frequent hand washing with either soap and water or soapless products decrease the number of germs that could enter your body. Infections can also be reduced by proper care of all wounds, even the smallest scrape or cut.

Any infection should be taken seriously. Do not hope it will go away. Take action.

## SEPSIS IS A MEDICAL EMERGENCY. IF YOU SUSPECT SEPSIS, CALL 9-1-1 OR GO TO A HOSPITAL RIGHT AWAY.

**To learn more about sepsis, or to read tributes and survivor stories, visit us online at [Sepsis.org](http://Sepsis.org)**



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