What is necrotizing enterocolitis (NEC)? Necrotizing enterocolitis is a gastrointestinal disease that mainly affects babies born prematurely and those born with extremely low birth weight (ELBW) (less than 2.2 pounds or 1,000 grams). Babies who have had ► respiratory distress syndrome (RDS), or ► patent ductus arteriosus (PDA) have a higher risk for NEC, but it can affect any baby.

Here’s what the letters mean:

N = necrotizing [NEK-ruh-tahyz-ing] — a process that causes tissue to die
EC = enterocolitis [en-tuh-roh-koh-LAHY-tis] — inflammation of the intestine

NEC can occur very quickly. Although NEC can be treated, it may lead to severe intestinal problems or cause death in some infants. In some cases, scarring and narrowing of the intestine may occur. Long-term problems with feeding and malabsorption of nutrients are also a concern. If these issues are present and severe, babies may experience delays in growth, motor skills, and learning skills as they mature.

What causes NEC? A complex mix of events may lead to NEC. To understand how this happens, we must first look at what happens in a healthy bowel.

Healthy bowel tissue: A main function of the bowel is to digest food and then to push the waste products through the body. Fully formed, healthy bowel tissue is lined with both good bacteria (that help break down foods and make vitamins) and bad bacteria (that can cause ► infection).

Bowel tissue in premature babies: In babies born early, the bowel is not fully formed and does not yet have full function. The walls of the bowel may be very fragile. The bowel of immature babies often contains bacteria that may harm the bowel under certain circumstances because it is not fully mature. So, when the baby begins feeding, the bowel may not digest milk well and may not push waste through very well. If the stability of the bowel is further reduced by the illness of the baby, bacteria may then enter the bowel wall, leading to infection and swelling that can damage bowel tissue. The infection may progress quickly and affect a large portion of the bowel. Severe injury to the bowel tissue may cause a hole to form in the bowel wall, allowing the bad bacteria to escape into the baby’s belly and bloodstream, causing severe infection.
What are the signs of NEC? Early signs of NEC may sometimes be hard to detect. Although NEC does not occur in the majority of babies, the health care team monitors for signs of NEC. A baby may have NEC if he or she:

- is not feeding well
- is sluggish (tired, not moving much)
- has a swollen belly (called distention)
- has unstable breathing and body temperature
- vomits often
- has blood in his or her stools
- has darkened skin on his or her belly

Tests, such as an x-ray or an ultrasound of the baby’s belly, may be used to see if there is gas present in the bowel wall. This finding is called a pneumatosis [noo-ma-TO-sis] and is commonly seen in NEC. It is caused by bacteria in the wall of the bowel. Other x-ray signs may suggest NEC to the doctors and nurses. The health care team also may take samples of the baby’s blood or stool to look for certain types of bacteria.

Can NEC be prevented? NEC cannot usually be prevented. By giving the baby human milk as early as possible, it can help the baby’s body fight off infection. Breast milk cannot prevent NEC, but it can help decrease the chance that NEC will occur.

What is the treatment for NEC? Early recognition of NEC can sometimes minimize the progress of the disease. Treatment for NEC is to let the bowel rest, so it can heal and grow. To help the bowel heal, your baby may be given medicines (called antibiotics) used to fight infection. To help the bowel rest, the baby may not be fed by mouth for as long as one week, or sometimes even longer. Instead, an intravenous line (IV) may be placed directly into a vein for feeding called parenteral feeding. Also, a tube may be placed into the stomach to drain any air that may collect there. This tube is inserted through the baby’s nose or mouth and into the stomach. It helps relieve pressure in the belly caused by the build-up of air. If a hole forms in the bowel or if a part of the bowel is damaged, your baby may need surgery. Talk with the doctors and nurses about the steps involved if surgery is necessary to repair the baby’s bowel and about other questions you may have.

What can parents do? A key action you can take is to be an active member of your baby’s health care team. To be an active partner, learn about NEC and how it is treated.

Take a closer look at these Pediatrix topics
Topics A - F can be found online.

- respiratory distress syndrome - F17 - Respiratory distress syndrome (RDS)
- patent ductus arteriosus - F13 - Patent ductus arteriosus (PDA)
- infection - A4 - About infections
- parenteral feeding - C1 - Caring for your baby in the NICU: feeding
- surgery - F9 - If your baby needs surgery

Find out more: these websites may be helpful

- The American Pediatric Surgical Association
  www.eapsa.org/parents
- Health on the Net Foundation
  www.hon.ch
- Medline Plus®
  www.nlm.nih.gov/medlineplus
- North American Society for Pediatric Gastroenterology, Hepatology and Nutrition
  www.naspghan.org/wmspage.cfm?parm1=291

This information is for educational purposes only and is not intended to substitute for professional medical advice. Always consult with a health care professional if you have any questions about the health of your baby.