

Prematurity and Low Birth Weight

Babies born before 37 weeks of pregnancy are considered premature. Babies who weigh less than 5½ pounds are considered low birth weight. Premature infants are at increased risk of a number of problems affecting newborns: the earlier your baby is born, the higher the risk of problems. With modern medical care, even very premature infants have an excellent chance of survival.

What are prematurity and low birth weight?

- Babies born before the 37th week of pregnancy are considered premature.
- Babies who weigh less than 2500 grams (about 5½ pounds) are considered low birth weight (LBW). About 8% of babies born in the United States are LBW. Most of these babies are premature. However, other conditions can cause LBW in a baby born after a full-term pregnancy, such as smoking during pregnancy.
- Some babies with LBW are full term but underweight. Others are premature but also weigh less than they should. These infants are called intrauterine growth restriction (IUGR) or small for gestational age (SGA).
- Babies who weigh less than 1500 grams (about 3½ pounds) are considered very low birth weight (VLBW). Nearly all of these babies are premature.

Prematurity can cause many types of health problems. The problems are related to the fact that many of your baby's organs and basic body systems aren't yet fully mature. The earlier your baby was born, the higher the risk of problems. Some problems that may occur related to prematurity, particularly in more premature infants, include breathing problems, damage to the brain and nervous system, and feeding problems. Mildly premature infants usually have few or no problems.

Treatment of premature infants has improved steadily over the years. Today, with advanced neonatal (newborn) intensive care unit (NICU) care, specialized equipment, and expert care from nurses and neonatologists (doctors specializing in the care of sick newborns), most premature infants have an excellent chance of survival. The earlier your baby was born, the higher the risk of serious medical complications.

What do they look like?

Every premature infant is different; the most important factor is how early he or she is born. Some of the things

you may notice—depending on how premature your baby is—include:

- Very small size.
- Fragile skin, with veins visible underneath.
- Limp, little activity; weak cry.
- Breathing problems: baby seems unable to get enough air.
- Feeding problems; baby can't suck or swallow normally.

What causes prematurity and low birth weight?

- Several factors may lead to premature birth, including:
 - Premature rupture of the membranes (bag of water) that hold the baby and amniotic fluid in the uterus (womb).
 - Pre-eclampsia: problems with blood pressure, kidneys, and usually occurring after 20 weeks of pregnancy.
 - Chronic illnesses in the mother—for example, heart disease or sickle cell anemia.
 - Infections, such as infection of the placenta.
 - Drug abuse.
 - Problems with the placenta or uterus (womb).
 - Multiple births (twins or more).
- Reasons for intrauterine growth restriction include:
 - Infections of the fetus before delivery.
 - Chromosome or gene abnormalities (inherited diseases).
 - Problems with the placenta, not allowing enough nutrition for the fetus.
 - Poor nutrition in the mother; other problems such as chronic diseases or smoking.

What are some possible and complications of prematurity and low birth weight?

Some possible problems, particularly for the premature infant, include:

- *Respiratory problems* (related to the lungs and breathing):
 - Immaturity of the lungs can lead to newborn *respiratory distress syndrome* (sometimes called hyaline membrane disease). These babies need additional oxygen. In severe cases, they need to be connected to a

machine called a ventilator to help them breathe. Some babies receive surfactant, a substance that helps the lungs to inflate and breathe.

- *Apnea*—prolonged episodes of not breathing, which result in the baby's not getting enough oxygen.
- *Nervous system problems:*
 - Bleeding into the brain (“intraventricular hemorrhage”) can be a serious complication. It is more common in very premature babies.
 - Harm to various parts of the brain, causing developmental (learning) problems or problems with muscle tone or strength.
- *Infections.* Premature infants are at higher risk of infection with bacteria. The intravenous (IV) lines needed for monitoring and treatment can also increase the risk of infections.
- *Jaundice* (increased bilirubin) causes a yellow color of the skin. This problem can usually be controlled by phototherapy (special lights that lower the bilirubin level).
- *Anemia* (low blood count): often made worse because all of the blood tests needed.
- *Low blood sugar* (hypoglycemia) or low calcium level (hypocalcemia).
- *Heart problems.* A common condition is patent ductus arteriosus. This is a connection that allows blood to flow from the main artery of the right side of the heart (pulmonary artery) to the main artery of the left side of the heart (aorta) while the baby is developing in the womb. In some premature infants, this blood connection remains and can cause problems. It usually can be fixed with medications; surgery is occasionally needed.
- *Eye problems* (“retinopathy of prematurity”) can occur, mainly in very premature infants.

Can prematurity and low birth weight be prevented?

- Good prenatal care is the best way to reduce your baby's risk of premature birth.
- Not smoking during pregnancy can reduce the risk of having a LBW baby.

How are premature infants treated?

Immediately after birth, your baby will have a complete examination. The focus will be on determining how premature he or she is and on looking for any related medical problems. In general, the more premature your baby is, the greater the risk of serious medical problems.

Your baby may be transferred to the neonatal intensive care unit (NICU) for special care and monitoring. This is where he or she will be treated for any of the problems or complications discussed earlier. Some general issues in NICU care include:

- *Temperature control.* Premature babies can have difficulty regulating their body temperature. Your baby will be cared for in an incubator (Isolette) or other special equipment to maintain an ideal temperature.
- *Feeding.* Feeding is one of the most important aspects of care. Less premature infants may be able to be fed by bottle or breast.
 - *Total parenteral nutrition*, or intravenous (IV) feeding, is needed for some very small or sick infants who can't be fed any other way. This is advanced care that requires very careful monitoring. There is a risk of infection and other complications.
 - *Gavage feeding.* Many babies born before the 34th week of pregnancy need to be fed through a small tube placed through the nose into the stomach (nasogastric tube) or intestine (nasojejunum tube).
 - Breast feeding often has to be delayed. However, the breast milk can usually be pumped and given to your baby in a bottle.
 - Decisions about feeding depend on your infant's particular circumstances. The goal is to provide your baby with the nutrition he or she needs to grow while limiting the risk of feeding-related complications.
- *Prevention of infection.* Premature infants are at high risk of infection. Careful attention to hand washing and other preventive measures is essential. You'll be allowed to participate in your baby's care as early and as frequently as possible.
- *Other treatments* depend on your baby's individual situation, especially on the presence of serious medical problems.

When can I take my premature or low birth weight baby home?

This decision depends on many factors, especially whether your baby has experienced any complications. As a rule, premature infants can go home when:

- They are feeding regularly from breast or bottle. Occasionally, babies are sent home while still gavage (tube) feeding, after training for the parents.
- They are gaining weight steadily.
- Their body temperature is stable.
- All medical problems are under control, and all medications are being taken orally. Babies recovering from lung disease may be sent home with oxygen.

When should I call your office?

Your premature or LBW baby will be seen regularly for follow-up visits. Between visits, call our office if you have any problems or concerns.

