

### Gestational Age and Survival

#### When is a baby considered preterm or extremely preterm?

A normal pregnancy lasts about 40 weeks. Babies born before 37 weeks of pregnancy are called **preterm** or premature. Babies born before 28 weeks of pregnancy are considered extremely preterm. The earlier a baby is born, the less likely the baby is to survive. Those who do survive often have serious, sometimes long-term, health problems and disabilities.

#### What is gestational age?

**Gestational age** is the “age” of the pregnancy. It often is counted in weeks and days. For example, “24 and 2/7 weeks of pregnancy” refers to 24 weeks and 2 days of pregnancy.

#### Can extremely preterm babies survive?

Medical advances have helped some preterm babies survive and overcome health challenges. But the chances that a baby born extremely early will survive without disability are still small.

With very rare exceptions, babies born before 23 weeks of pregnancy do not survive. Although survival rates increase for babies born between 23 weeks and 25 weeks of pregnancy, most survivors face serious, often lifelong disabilities. As gestational age increases, the outlook for preterm babies improves.

It is hard to predict the outcome for an individual baby. Some pregnancies develop faster, while others develop more slowly. Gestational age itself is only an estimate. Additional factors can affect the outcome for an extremely preterm infant, including birth weight, sex of the baby, and whether certain medications are given during pregnancy.

Survival and complication rates also change over time as more research is completed and new treatments are developed.

## What health challenges can extremely preterm babies have?

Most babies who are born very early have serious health problems. They may need immediate care and often ongoing medical care. Almost all of the baby's organs and body functions are affected by being born preterm:

- **Lungs**— **Surfactant** is a substance that helps the air sacs of the lungs stay inflated. The lungs' ability to make surfactant increases with gestational age. Lack of surfactant is the main cause of a serious breathing disorder called **respiratory distress syndrome (RDS)** . Babies with RDS are treated with surfactant replacement therapy and may need help breathing. Another common condition in preterm babies is **apnea of prematurity** .
- **Blood flow**—An extra blood vessel called the **ductus arteriosus** allows blood to bypass the lungs before birth. Normally, this blood vessel closes at birth or shortly afterward. In preterm babies, this blood vessel may stay open. It may close on its own later, but some babies need treatment, including surgery, to close it. Another common problem in preterm babies is low blood pressure, which can reduce the flow of **oxygen** to organs.
- **Brain**—Even in babies born just a little bit early, the brain may not be fully developed. In extremely preterm babies, bleeding in the brain may occur because its blood vessels are fragile and easily injured. Parts of the brain may not grow normally, or the brain may be damaged by lack of oxygen. Brain damage in extremely preterm infants may cause **cerebral palsy** . Developmental disabilities, learning problems, and behavioral disorders may also occur but may not be noticed until later in a child's life.
- **Vision and hearing**—A condition called **retinopathy of prematurity** may cause poor vision or blindness. Hearing disorders are common in preterm babies. Some hearing problems are caused by the brain not being able to process sounds.

- **Immune system**—Because their immune systems are not finished developing, extremely preterm infants run the risk of serious infections that can be life threatening.
- **Digestion**—Preterm infants are at risk of a digestive condition called [necrotizing enterocolitis \(NEC\)](#) . Treatment, which may include surgery, can help digestive tissues heal and prevent infection. Babies who have had NEC may have lifelong digestive problems requiring medical care.
- **Body temperature**—In the last weeks of pregnancy, a layer of fat develops that helps babies stay warm after birth. The skin thickens to adapt to cooler temperatures outside the mother’s body. Extremely preterm babies may not be able to stay at a normal temperature and will need help keeping warm.

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## Management of Extremely Preterm Birth

### What specialized health care is available for women and babies at risk of extremely preterm birth?

Extremely preterm birth is usually managed by a team of specialized health care professionals. In addition to your [obstetrician–gynecologist \(ob-gyn\)](#) , the team may include a [maternal–fetal medicine \(MFM\) specialist](#) , a [neonatologist](#) , and other pediatric subspecialists.

You may be transferred to a hospital that offers specialized care for extremely preterm infants. If time allows, this transfer may take place before delivery. High-level [neonatal intensive care units \(NICUs\)](#) provide care for infants with serious health problems. High-level maternal care facilities manage women with high-risk pregnancies.

### What will happen if I am expected to have an extremely preterm birth?

You and your health care team should work together to form a plan about the care you and your baby will receive. This involves weighing the risks and benefits of the available treatment options for both you and your baby. You should also think about your personal beliefs and values and what your wishes are for your baby.

It is important to remember that this care plan may change as circumstances change. For example, care plans may be adjusted after the baby is born when more information

is known about the baby's condition. Care decisions may also change depending on how the baby responds to treatment.

## Will an extremely preterm baby need resuscitation?

Extremely preterm infants will not survive without [resuscitation](#). Often this means helping the baby breathe by inserting a tube into the baby's airway. Steps may be taken to start the baby's heart. Even with resuscitation efforts, some babies will not survive. Those who do may have severe disabilities.

Babies born before 23 weeks of pregnancy typically do not survive even with resuscitation. In some cases, after discussion with the health care team, a family may decide that resuscitation is not the best option for their baby. In situations like this, medical care will focus on keeping the baby warm, comfortable, and free from pain.

## What medications can be given to improve an extremely preterm baby's chance of survival?

If resuscitation of the baby is planned or being considered, medications given to the pregnant woman may improve the baby's chances of survival and reduce the risk of disability. These medications include the following:

1. [Corticosteroids](#) to help the baby's lungs and other organs mature
2. [Magnesium sulfate](#) to decrease the risk of cerebral palsy
3. [Tocolytic](#) medications to help prolong pregnancy for a few hours or days to give time for the first two drugs to work
4. [Antibiotics](#) to prevent infection

Recommendations for giving these medications are made on a case-by-case basis. For example, corticosteroids are not recommended when delivery is expected earlier than 22 weeks of pregnancy because they have not been found to be helpful. At 22 weeks of pregnancy, corticosteroids may be considered, but whether they will help is uncertain.

## Will I need to have a cesarean birth if my baby is born extremely preterm?

Not necessarily. If you are at risk of extremely preterm birth, the [fetus](#) may not be in a good position in the [uterus](#) to allow for a safe vaginal delivery. In these cases, a

[cesarean birth](#) may be recommended depending on gestational age. Cesarean birth is rarely recommended before 23 to 24 weeks of pregnancy because it is unlikely to affect the outcome.

## How can extremely preterm birth affect my health?

A cesarean birth can increase the risk of [complications](#) in future pregnancies. Prolonging pregnancy may worsen some medical conditions, such as [preeclampsia](#), or put you at risk of infection. These health consequences should also be considered in care decisions.

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## Making Decisions

### What should I consider when making decisions about extremely preterm birth?

Your health care team should provide guidance about the medical care that is likely to help your baby. The benefits and risks of each treatment option should be discussed. Your health, including the risk of complications for future pregnancies, should also be considered.

Given the risks to both your health and the baby's health, if delivery is likely to occur before 24 weeks of pregnancy, another option is to end the pregnancy. Your health care team can provide information and counseling about this option.

Your health care team should also discuss whether any laws need to be followed about providing life-saving care for the baby. These laws vary from state to state. Some hospitals also have policies that are followed in these situations.

Remember that your culture, values, and religious beliefs are important to consider as well.

### Who can I turn to for support when making decisions?

Making decisions about your and your baby's care can be very difficult. Your health care team is trained to give medical guidance and to include your and your family's wishes and preferences in the decision-making process. You may also want to seek support from family, trusted friends, and clergy.

The hospital may offer counseling services for you and your family. Many hospitals have programs that put you in touch with parents who have been through the same situation and who can listen to your concerns.

### **How much time will I have to make decisions?**

Ideally, there will be enough time to process all of this information and make an informed decision. But delivery may happen suddenly. You may need to make decisions quickly. Your health care team should do its best to make sure you are given all the information about the baby's condition as soon as possible after birth.

### **What will happen if it is decided to withdraw or withhold life-saving care?**

If you decide to withdraw or withhold life-saving care, measures are taken to make sure the baby is kept warm and comfortable. You can spend as much time as you want with your baby. Nurses and other staff can help you create keepsakes, such as taking pictures and making footprints. Your health care team should make sure that you get the help and support you need.

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## **After the Hospital Stay**

### **What is involved in caring for an extremely preterm baby after leaving the hospital?**

Most extremely preterm babies spend months in the hospital. After they are sent home, many will need ongoing, specialized medical care. There are [pediatricians](#) who specialize in the care of preterm babies from birth through childhood. Some clinics focus on follow-up care for preterm babies. The doctor will closely watch how your baby grows and check to see if any other problems develop during childhood.

Many agencies provide help for parents caring for preterm babies. It is a good idea to become as informed as you can so you can give your baby the best care. As your child reaches school age, you may need to find a special school or teachers to help with any learning problems.

### **Where can I find support if my baby does not survive?**

Parents who lose a newborn may experience pain, guilt, and depression and need support. When dealing with your grief, remember you are not alone. A number of people have the knowledge and skills to help you. Ask members of your medical team to direct you to support systems in your community. These can include childbirth educators, self-help groups, social workers, and clergy. Take time to find the type of support that suits you best.

Many grieving parents find it helpful to get involved with groups of parents who have gone through the same loss. Members of such groups respect your feelings, understand your stresses and fears, and have a good sense of the type of support you need.

Professional counseling can also help. Talking with a trained counselor can help you understand and accept what has happened. You may wish to get counseling for yourself only, for you and your partner, or for your entire family. You can also find online support groups for parents who just want to read about how others have coped with this difficult situation.

## Glossary

**Antibiotics:** Drugs that treat certain types of infections.

**Apnea of Prematurity:** A condition of preterm babies that causes breathing to stop for periods of 15 to 20 seconds or longer.

**Cerebral Palsy:** A disorder of the nervous system that affects movement, posture, and coordination. This disorder is present at birth.

**Cesarean Birth:** Birth of a fetus from the uterus through an incision (cut) made in the woman's abdomen.

**Complications:** Diseases or conditions that happen as a result of another disease or condition. An example is pneumonia that occurs as a result of the flu. A complication also can occur as a result of a condition, such as pregnancy. An example of a pregnancy complication is preterm labor.

**Corticosteroids:** Drugs given for arthritis or other medical conditions. These drugs also are given to help fetal lungs mature before birth.

**Ductus Arteriosus:** A fetal blood vessel that allows blood to bypass the fetal lungs. It usually closes soon after birth.

**Fetus:** The stage of human development beyond 8 completed weeks after fertilization.

**Gestational Age:** How far along a woman is in her pregnancy, usually reported in weeks and days.

**Immune System:** The body's natural defense system against viruses and bacteria that cause disease.

**Magnesium Sulfate:** A drug that may help prevent cerebral palsy when it is given to women in preterm labor who may deliver before 32 weeks of pregnancy.

**Maternal–Fetal Medicine (MFM) Specialist:** An obstetrician–gynecologist with additional training in caring for women with high-risk pregnancies. Also called a perinatologist.

**Necrotizing Enterocolitis (NEC):** Severe inflammation affecting the digestive tract that is most commonly found in preterm babies.

**Neonatal Intensive Care Units (NICUs):** Special parts of a hospital in which sick newborns receive medical care.

**Neonatologist:** A doctor who specializes in the diagnosis and treatment of disorders that affect newborn infants.

**Obstetrician–Gynecologist (Ob-Gyn):** A doctor with special training and education in women's health.

**Oxygen:** An element that we breathe in to sustain life.

**Pediatricians:** Doctors who care for infants and children.

**Preeclampsia:** A disorder that can occur during pregnancy or after childbirth in which there is high blood pressure and other signs of organ injury. These signs include an abnormal amount of protein in the urine, a low number of platelets, abnormal kidney or



liver function, pain over the upper abdomen, fluid in the lungs, or a severe headache or changes in vision.

**Preterm:** Less than 37 weeks of pregnancy.

**Respiratory Distress Syndrome (RDS):** A condition in which a newborn's lungs are not mature, which causes breathing difficulties.

**Resuscitation:** Medical procedures that restore life to someone who appears to be dead.

**Retinopathy of Prematurity:** A condition affecting the blood vessels in the part of the eye that sends images to the brain. The condition can cause permanent visual problems and blindness in preterm infants.

**Surfactant:** A substance made by cells in the lungs. This substance helps keep the lungs elastic and keeps them from collapsing.

**Tocolytic:** A drug used to slow contractions of the uterus.

**Uterus:** A muscular organ in the female pelvis. During pregnancy, this organ holds and nourishes the fetus. Also called the womb.

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If you have further questions, contact your ob-gyn.

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