CONDITION

Premature infant

A premature infant is a baby born before 37 completed weeks of pregnancy.

WHAT IT IS
Birth before 37 completed weeks of pregnancy

BODY SYSTEM
Whole body, especially lungs, brain, digestion, and vision

MAIN SYMPTOMS
Small size, breathing difficulty, feeding difficulty, poor temperature control

WHAT CAUSES IT
Early labor or medically necessary early birth

HOW IT IS DIAGNOSED
Pregnancy dating and newborn physical assessment

MAIN TREATMENT
Supportive newborn and neonatal intensive care

CAN IT BE CURED?
No - birth timing cannot be changed

IS IT AN EMERGENCY?
Sometimes - breathing difficulty, blue color, or unresponsiveness

LONG-TERM OUTLOOK
Many develop well; earlier birth carries greater risks

Overview

A premature infant, also called a preterm infant, is a baby born before 37 completed weeks of pregnancy. A full-term pregnancy usually lasts about 40 weeks.

Premature birth is grouped by gestational age, meaning how long the pregnancy lasted:

These groups describe timing, not an individual baby's future. In general, babies born earlier need more medical support and face a higher risk of complications. Birth weight, growth during pregnancy, infections, congenital conditions, and events around delivery also affect health.

A premature baby's organs have had less time to mature. The lungs may not yet exchange oxygen efficiently. The brain, digestive system, immune system, skin, eyes, and ability to control body temperature may also be immature.

Some late-preterm babies stay with their parent after birth and need only extra monitoring.

Babies born much earlier often need care in a neonatal intensive care unit, or NICU. The NICU provides breathing support, warmth, nutrition, monitoring, and treatment while the baby grows and develops.

- Extremely preterm: before 28 weeks
- Very preterm: 28 to under 32 weeks
- Moderate to late preterm: 32 to under 37 weeks

Symptoms

Prematurity is defined by when the baby is born, not by a set of symptoms. Some premature babies appear healthy but still need monitoring because problems can develop gradually.

Possible features include:

Not every premature baby has these features. A baby born at 36 weeks may look similar to a full-term baby but tire quickly during feeds or have difficulty keeping warm. An extremely premature baby may need immediate breathing and circulation support.

- A small body with relatively little body fat
- Thin, shiny, or delicate-looking skin
- Soft ear cartilage or fewer creases on the soles
- Weak sucking or difficulty coordinating sucking, swallowing, and breathing
- Fast, irregular, or labored breathing
- Pauses in breathing, called apnea
- Difficulty maintaining body temperature
- Sleepiness, low muscle tone, or less vigorous movement
- Jaundice, which causes yellow skin or eyes

Causes and risk factors

Premature birth can happen after labor begins on its own. It may also follow preterm premature rupture of membranes, which means the sac of fluid around the baby breaks before 37 weeks and before labor starts.

Sometimes clinicians recommend an early delivery because continuing the pregnancy may be unsafe for the baby, the pregnant person, or both. Reasons can include severe high blood

pressure, problems with the placenta, poor fetal growth, heavy bleeding, or signs that the baby is unwell.

Factors linked with a higher chance of premature birth include:

These are risk factors, not definite causes. Premature birth can happen without any known risk factor, and having one or more risk factors does not mean it will happen. Parents should not assume that they caused the early birth.

- A previous premature birth
- Pregnancy with twins or other multiples
- A short or weakened cervix
- Certain uterine or placental conditions
- High blood pressure, diabetes, or some infections during pregnancy
- Smoking or substance use
- Becoming pregnant soon after a previous birth
- Limited access to prenatal care

Diagnosis

Prematurity is confirmed by estimating the baby's gestational age. The most reliable estimate usually comes from pregnancy dating, especially an ultrasound performed early in pregnancy. The date of the last menstrual period or known conception date may also be used.

If pregnancy dates are uncertain, clinicians can examine the newborn's physical and neurological maturity. Features such as posture, muscle tone, skin, ears, and foot creases can help estimate gestational age. This assessment is less precise than reliable pregnancy dating.

After birth, tests focus on the baby's health and possible complications rather than confirming prematurity. Depending on gestational age and clinical needs, these may include:

Not every premature baby needs every test. The care team selects monitoring based on how early the baby was born and how the baby is doing.

- Continuous monitoring of breathing, heart rate, oxygen level, and temperature
- Blood tests for glucose, anemia, infection, or chemical imbalances
- Chest imaging when breathing problems are present
- Ultrasound scans of the brain in babies at higher risk

- Eye examinations for retinopathy of prematurity
- Newborn blood-spot, hearing, and heart screening

Treatment and management

Treatment supports the baby while immature organs grow and recover. The level of care can range from observation in a newborn unit to prolonged NICU care.

An incubator or heated cot helps maintain body temperature. Skin-to-skin care, sometimes called kangaroo care, can also support warmth, bonding, sleep, and feeding when the baby is medically stable.

Breathing support may include extra oxygen, continuous positive airway pressure, or CPAP, which keeps the lungs gently open. Some babies need a ventilator to breathe for them. Surfactant may be placed into the lungs to help keep the tiny air sacs open. Caffeine is sometimes used for apnea related to prematurity.

Premature babies may not yet have the strength and coordination to feed safely by mouth. Breast milk or formula can be given through a thin tube into the stomach. Very premature or unwell babies may initially receive nutrients through a vein. Human milk may be fortified with added nutrients to support growth.

Other care may include treatment for infection, jaundice, low blood sugar, anemia, or heart and digestive problems. Noise and light may be reduced to protect sleep and development. Parents can often take part in skin-to-skin care, diaper changes, mouth care, comforting, and feeding as the baby becomes stable.

Discharge is based on readiness rather than reaching a particular weight. A baby generally needs to breathe safely, maintain temperature, feed well enough to grow, and have a suitable follow-up plan.

Complications

The chance and type of complications are strongly related to gestational age, birth weight, and the baby's medical course. Many premature babies, particularly those born closer to term, do not develop serious long-term problems.

Possible early complications include:

Some babies develop bronchopulmonary dysplasia, a longer-lasting lung condition after premature birth and respiratory support.

Over time, some children born prematurely have differences in movement, learning, attention, language, behavior, hearing, or vision. Cerebral palsy and significant developmental disability are more common after very early birth, but they do not affect every premature infant.

Developmental screening helps identify concerns early. Support may include physical therapy, occupational therapy, speech and language therapy, hearing care, vision treatment, or educational services.

- Respiratory distress syndrome from immature lungs
- Apnea and a slow heart rate
- Infection because of an immature immune system
- Bleeding or injury in the developing brain
- Patent ductus arteriosus, an open fetal blood vessel near the heart
- Necrotizing enterocolitis, a serious inflammation of the intestine
- Jaundice, anemia, or low blood sugar
- Retinopathy of prematurity, abnormal blood-vessel growth in the retina

Prevention

Once a baby has been born prematurely, prematurity itself cannot be reversed. Not every premature birth can be prevented, and an unexplained early birth is not evidence that someone did something wrong.

During pregnancy, regular prenatal care can help identify conditions that raise the chance of early delivery. Avoiding tobacco and non-prescribed drugs, managing existing health conditions, and treating infections when found may reduce some risks.

People with a previous premature birth, a short cervix, or other specific risks may be offered closer monitoring or preventive treatment during pregnancy. Options can include progesterone in selected situations or a cervical stitch, called cerclage. These treatments are not suitable for every pregnancy.

If early birth appears likely, treatment before delivery may improve the baby's outcome. Corticosteroids like prednisone or hydrocortisone can help the fetal lungs mature. Magnesium sulfate may be used before some very early births to help protect the baby's brain. These treatments reduce certain complications but do not guarantee that early labor will stop.

Living with it and what to expect

The first days or months may involve monitors, tubes, alarms, and changing plans. Progress is often uneven. A baby may begin feeding well and then tire during an illness or growth spurt. NICU staff can explain what each device does and help parents take part safely in daily care.

Length of stay is different for each baby. Babies born very early often remain in hospital near their original due date, but some leave sooner or later. Going home does not mean every effect of prematurity has resolved. It means the baby can be cared for safely outside the hospital with an appropriate plan.

After discharge, follow-up usually covers feeding, growth, breathing, development, hearing, vision, and vaccinations. Some babies need oxygen, tube feeding, medicines, or monitoring at home. Clear written instructions and training should be provided before discharge.

Development may be described using corrected age. This is calculated from the baby's actual age and the number of weeks early they were born. For example, a 6-month-old baby born two months early has a corrected age of about 4 months. Corrected age is commonly used when considering early growth and developmental milestones, often through the first two years.

Many children born prematurely attend school, play, and take part in family life without major restrictions. Others need continuing medical, developmental, or educational support. Regular follow-up matters because some differences become clearer only when language, attention, coordination, or school skills become more demanding.

When to get medical help

Keep all planned newborn, primary care, NICU follow-up, eye, hearing, and developmental appointments. Contact the baby's healthcare service between routine visits if feeding becomes harder, weight gain is a concern, vomiting is persistent, breathing seems different, or the baby has fewer wet diapers.

Seek urgent medical assessment for a baby who:

Call emergency services for severe breathing difficulty, repeated or prolonged breathing pauses, blue or gray lips or skin, a seizure, collapse, or unresponsiveness. Follow any individual emergency plan provided at discharge, particularly if the baby uses oxygen, tube feeding, or monitoring equipment.

- Has a temperature of 38°C or higher and is younger than 3 months
- Is feeding much less than usual or repeatedly cannot keep feeds down

- Is unusually sleepy, difficult to wake, or much less responsive
- Has signs of dehydration, such as very few wet diapers or a dry mouth
- Develops worsening jaundice, a swollen abdomen, or blood in the stool

Common questions

Is a baby born at 36 weeks premature?

Yes. A baby born from 34 weeks through 36 weeks and 6 days is late preterm. Many late-preterm babies do well, but they have higher risks of feeding difficulty, jaundice, low blood sugar, breathing problems, and poor temperature control than full-term babies.

When can a premature baby go home?

There is no single weight or gestational age that guarantees discharge. The baby usually needs to maintain body temperature, breathe safely, take enough nutrition to grow, and have stable medical needs that can be managed at home.

Will my premature baby catch up in growth and development?

Many do make substantial progress, especially during early childhood. Growth and developmental patterns are individual. Clinicians may use corrected age when assessing milestones and will look at progress over time rather than one measurement.

Why does my premature baby sleep so much during feeds?

Feeding requires coordination and energy. Premature babies may tire before taking enough milk or may struggle to coordinate sucking, swallowing, and breathing. A feeding plan can help protect growth and reduce the risk of milk entering the airway.

Can I breastfeed a premature baby?

Often, yes, although direct breastfeeding may take time. Expressed milk can be given by tube, cup, bottle, or another method while feeding skills develop. Some babies need fortified milk or additional nutrition to meet their growth needs.

Does premature birth always cause long-term disability?

No. Many children born prematurely have no major disability. The risk of lasting health or developmental difficulties is higher after earlier birth and a more complicated newborn course. Follow-up helps find concerns and arrange support promptly.

Sources



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