CONDITION

Placental insufficiency

Placental insufficiency means the placenta is not delivering enough oxygen and nutrients to support the baby's needs.

WHAT IT IS
Reduced placental transfer of oxygen and nutrients

BODY SYSTEM
Pregnancy and reproductive system

MAIN SYMPTOMS
Often none, reduced fetal movement, smaller-than-expected bump

WHAT CAUSES IT
Abnormal placental development or damage, often unknown

HOW IT IS DIAGNOSED
Serial growth ultrasound, fluid assessment, and umbilical artery Doppler

MAIN TREATMENT
Close monitoring and delivery at the safest time

CAN IT BE CURED?
No, placental function cannot be restored

IS IT AN EMERGENCY?
Sometimes, with reduced movement or severe pre-eclampsia symptoms

LONG-TERM OUTLOOK
Many babies do well; severe cases carry greater risks

Overview

The placenta is an organ that develops during pregnancy. It attaches to the wall of the uterus and passes oxygen and nutrients from your blood to your baby. It also removes waste and makes hormones that support pregnancy.

Placental insufficiency, sometimes called uteroplacental insufficiency, means the placenta is not working well enough to meet the baby's needs. This may affect growth, the amount of amniotic fluid around the baby, or the baby's oxygen supply.

Placental insufficiency is not always a clear-cut diagnosis. It is often suspected when a baby is growing more slowly than expected or blood flow through the umbilical cord is abnormal. A small baby does not always have placental insufficiency. Some babies are naturally small and healthy.

The condition can range from mild and stable to severe. When it develops early in pregnancy, it may have more effect on growth and may lead to an early birth. When it appears later, the baby may already be close to full term.

Symptoms

Placental insufficiency often causes no symptoms that you can feel. It is commonly found during routine pregnancy measurements or an ultrasound.

Possible signs include:

Pre-eclampsia is a pregnancy condition involving high blood pressure and signs that organs such as the kidneys, liver, brain, or placenta are affected. Possible symptoms include a severe headache, vision changes, pain below the ribs, vomiting, or sudden swelling. However, pre-eclampsia can also occur without noticeable symptoms.

A change in your baby's usual movements needs prompt assessment. Do not rely on the size of your bump or a home listening device to judge whether your baby is well.

- Your uterus measuring smaller than expected for the stage of pregnancy
- Your baby moving less, or their usual movement pattern changing
- Slow growth seen on ultrasound
- Symptoms of pre-eclampsia, when the two conditions occur together

Causes and risk factors

The placenta may not develop normally in early pregnancy, or its blood vessels may become damaged later. This can reduce blood flow between the uterus and placenta. In many cases, there is no single identifiable cause.

Conditions linked with a higher chance of placental problems include chronic high blood pressure, pre-eclampsia, kidney disease, and certain autoimmune conditions. Diabetes may increase risk when it has affected blood vessels.

Smoking reduces the oxygen available to the baby and raises the risk of poor growth. Cocaine and some other non-prescribed drugs can also seriously affect placental blood flow. Support is available if stopping is difficult.

Placental insufficiency is also more likely after some previous pregnancy complications, such as fetal growth restriction, pre-eclampsia, placental abruption, or stillbirth. Placental abruption

means the placenta separates from the uterus too soon.

Being pregnant with twins or more can increase the demands placed on the placenta. Certain problems affecting the placenta or umbilical cord may also contribute.

Having a risk factor does not mean placental insufficiency will develop. It is also possible to develop it without any known risk factors. It is rarely caused by something you did during ordinary daily activities.

Diagnosis

There is no single prenatal test that proves the placenta is insufficient in every case. Diagnosis usually combines your pregnancy history, the baby's growth pattern, blood-flow measurements, and tests of current wellbeing.

From around the middle of pregnancy, your maternity team may measure the distance from your pubic bone to the top of your uterus. This is called the fundal height. If it is smaller than expected or does not increase normally, an ultrasound may be arranged.

Ultrasound can estimate the baby's weight and measure body parts, especially the abdomen. Measurements from more than one scan help show whether growth is continuing. Because ultrasound estimates are not exact, results are interpreted alongside the overall pattern.

The scan also measures amniotic fluid. Low fluid can be a sign that the placenta is not supplying enough blood for the baby to produce the expected amount of urine.

A Doppler ultrasound measures blood-flow patterns. The umbilical artery Doppler examines blood travelling from the baby toward the placenta. Increased resistance, absent flow, or reversed flow can indicate more serious placental dysfunction. Other fetal blood vessels may be checked in selected situations.

Additional monitoring may include:

After birth, the placenta may be examined in a laboratory. This can identify areas of poor blood flow, inflammation, clotting, or other changes, although placental findings do not always explain the full course of the pregnancy.

- A non-stress test or cardiotocography, which records the baby's heart rate
- A biophysical profile, combining ultrasound observations with heart-rate monitoring
- Blood pressure, urine, and blood tests to look for pre-eclampsia

Treatment and management

No treatment can reliably repair the placenta or make it work normally again. Management focuses on watching the baby closely, treating related maternal conditions, and choosing the safest time for birth.

Monitoring may involve repeat growth scans, amniotic fluid checks, Doppler studies, and fetal heart-rate testing. How often these are needed is based on the baby's size, growth trend, blood-flow results, gestational age, and your health.

If you have high blood pressure or pre-eclampsia, these conditions require their own monitoring and treatment. Stopping smoking can reduce ongoing exposure to carbon monoxide and other harmful substances, but it cannot reverse placental damage that has already occurred.

If early delivery is likely, medicines may be offered to help prepare the baby for premature birth. Corticosteroids like prednisone or hydrocortisone can help the baby's lungs mature. Magnesium sulfate may be used before some very early births to reduce the risk of neurological injury. Whether these are appropriate depends on the stage of pregnancy and expected timing of delivery.

Bed rest has not been shown to restore placental function or improve fetal growth. It can also increase the risk of blood clots and physical deconditioning, so it should not be started without specific medical advice.

Delivery is the only way to end the baby's dependence on the placenta. The timing balances the risks of remaining in the uterus against the risks of being born early. Vaginal birth may be possible if monitoring remains reassuring. A caesarean birth may be recommended if the baby is unlikely to tolerate labour or urgent delivery is needed.

Complications

The main complication is fetal growth restriction, meaning the baby does not reach their expected growth potential. This is different from being naturally small.

Reduced placental function can also cause low amniotic fluid and reduced oxygen supply. The baby may have difficulty coping with labour, making continuous heart-rate monitoring or caesarean birth more likely.

More severe cases can lead to premature birth or stillbirth. Careful surveillance and timely delivery are intended to reduce these risks, although monitoring cannot prevent every complication.

After birth, a small or premature baby may need help maintaining body temperature, blood sugar, breathing, or feeding. Some babies require care in a neonatal unit. The amount of support needed is influenced by how early the baby is born and how much growth has been affected.

Placental insufficiency may occur with pre-eclampsia, which can affect the pregnant person's liver, kidneys, blood clotting, brain, and other organs. Pre-eclampsia can also continue or first become apparent after birth.

Prevention

Placental insufficiency cannot always be prevented. Problems with early placental development often occur without a known reason, and ordinary activity does not cause them.

Attending antenatal appointments allows blood pressure, uterine growth, and the baby's wellbeing to be checked. Managing chronic high blood pressure, diabetes, kidney disease, or autoimmune illness before and during pregnancy may reduce related risks.

Avoiding smoking and cocaine helps protect placental blood flow. If you smoke, stopping at any point in pregnancy is worthwhile, and support can improve the chance of success.

Low-dose aspirin can reduce the risk of pre-eclampsia and related placental complications in some higher-risk pregnancies. It is preventive rather than a treatment for established placental insufficiency. It should only be taken when recommended for your pregnancy.

Living with it and what to expect

If placental insufficiency is suspected, you may have appointments more often than in a routine pregnancy. Waiting between scans and monitoring sessions can be stressful, especially because you may feel well while being told that closer observation is needed.

Placental function does not usually return to normal during the pregnancy. Some cases remain stable for weeks, while others worsen. Growth may continue at a slower rate rather than stop completely. Test results and gestational age are reviewed together because no single measurement can predict exactly what will happen.

You may be asked to pay close attention to your baby's usual movement pattern. This does not replace scheduled monitoring, but a change can be an early sign that the baby needs assessment.

Many babies affected by mild or late placental insufficiency are born in good condition. Babies

affected earlier or more severely are more likely to be premature, small, or need neonatal care. Long-term development is influenced by the severity of growth restriction, oxygen problems, and how early birth occurs.

After delivery, the placenta is no longer present, so placental insufficiency itself does not continue. You may still need follow-up for high blood pressure or pre-eclampsia. Your baby may need growth, feeding, or developmental follow-up.

A previous affected pregnancy raises the chance of growth or blood-pressure complications in a future pregnancy, but recurrence is not certain. An early review in the next pregnancy can help plan appropriate monitoring and discuss whether preventive treatment is suitable.

When to get medical help

Keep all planned scans and monitoring appointments. Contact your maternity team if you cannot attend, because the timing of follow-up is part of managing this condition.

Contact your maternity unit immediately if your baby is moving less than usual, stops moving, or has a clear change in their normal pattern. Do not wait until the next day or until your next appointment.

Urgent assessment is also needed for:

Call emergency services for a seizure, collapse, severe difficulty breathing, heavy bleeding, or severe constant abdominal pain. These symptoms may indicate a serious pregnancy complication and should not wait for routine follow-up.

- Vaginal bleeding or fluid leaking from the vagina
- Regular contractions or signs of labour before 37 weeks
- A severe or persistent headache
- Blurred vision, flashing lights, or other vision changes
- Severe pain below the ribs or in the upper abdomen
- Sudden swelling of the face or hands, or feeling seriously unwell

Common questions

Can placental insufficiency get better?

The placenta cannot usually repair itself enough to restore normal function. However, some cases remain stable, allowing the pregnancy to continue safely with monitoring. Delivery

becomes safer if tests suggest the baby is no longer doing well in the uterus.

Does placental insufficiency mean my baby will be small?

Not always, but slow growth is one of its most common effects. Placental problems can develop late, when the baby's overall weight still appears normal. Conversely, some small babies have healthy placental function and are simply small by constitution.

Can I carry to full term?

Some people do, particularly when the condition is mild, develops late, and monitoring remains reassuring. Earlier delivery may be advised if growth slows significantly, Doppler blood flow becomes abnormal, amniotic fluid falls, or pre-eclampsia develops.

Can an ultrasound detect placental insufficiency?

Ultrasound can detect signs associated with it, including slow growth, low amniotic fluid, and abnormal blood flow. It cannot measure every aspect of placental function, so repeated scans and other monitoring may be needed.

Did I cause placental insufficiency?

Usually not. It often results from how the placenta developed or from medical conditions affecting blood vessels. Smoking and certain drugs can increase risk, but many affected pregnancies have no preventable cause.

Will it happen again in another pregnancy?

The chance is higher after a previous affected pregnancy, but it is not certain to happen again. The level of risk is influenced by the cause, how early it developed, and whether conditions such as chronic hypertension or pre-eclampsia were involved.

Sources

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