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NHS
National Institute for Health and Clinical Excellence

Caesarean section

Most women give birth through their vagina. Caesarean section is a surgical operation in which an **obstetrician** makes an opening in the mother's **abdomen** and womb and removes the baby through it.

A caesarean may be planned in advance – for example, because the baby is positioned bottom first – or it may be done at short notice as an emergency if **complications** develop during your pregnancy or labour.

What you can expect from your care

Your care will be provided by an antenatal healthcare team, which may include midwives, your GP or an obstetrician.

During your pregnancy your midwife or doctor should give you information about caesarean section based on the best available evidence, including:

- common reasons for needing a caesarean section
- what the procedure involves
- the risks and benefits of caesarean section compared with vaginal birth
- how having a caesarean section might affect any future pregnancies and your chances of having a vaginal birth in future.

Your midwife or doctor should encourage you to ask questions if there is anything you do not understand, and discuss them with you.

Questions you might like to ask your healthcare team

- Can you tell me more about caesarean section?
- Can I request a caesarean section?
- Are there any risks to my health, and to my baby's health, of having a caesarean section?
- How can I reduce my chances of having a caesarean section?
- Why might I need an unplanned caesarean section?
- What might happen if I choose not to have a caesarean section?
- How might having a caesarean section affect my fertility and any future pregnancies?
- Can I talk to another woman who's had a caesarean section?
- Are there any support organisations in my local area?
- Can you provide any information for my family?

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Making decisions about how to have your baby

To enable you to make decisions about how to have your baby, your midwife or doctor should discuss with you the benefits and risks of a caesarean section compared with a vaginal birth, taking into account your circumstances, preferences, concerns and plans for future pregnancies (see 'Risks of caesarean section' on page 7).

Women who have had both a previous caesarean section and a previous vaginal birth are more likely to have a vaginal birth than those who have had only a previous caesarean section.

If you need a caesarean section (see 'Medical reasons for considering a caesarean section' on page 8 and 'Reasons for needing an unplanned caesarean section' on page 12), your healthcare team should explain to you why they think it is necessary and record their reasons for carrying it out.

Your healthcare team should record the level of urgency of any caesarean section. They will do this using the following standard categories:

1 When there is an immediate threat to your life or the life of your baby.

2 When there is concern about your health or the health of your baby, but your lives are not in immediate danger.

3 When there is no immediate concern about your health or the health of your baby, but you need an early delivery because of an existing condition.

4 When delivery is timed to suit you or your healthcare team.

If you request a caesarean section

Your doctor or midwife should explore and discuss your reasons with you and make a note of this discussion.

If your request is not for medical reasons, your doctor or midwife should explain the overall risks and benefits of caesarean section compared with vaginal birth. You should also be able to talk to other members of your healthcare team, such as the obstetrician or anaesthetist, to make sure you have accurate information.

If you ask for a caesarean section because you have anxiety about giving birth, your midwife or doctor should offer you the chance to discuss your anxiety with a healthcare professional who can offer you support during your pregnancy and labour.

If after discussion and support you still feel that you do not want a vaginal birth, you should be offered a caesarean section.

If your obstetrician is unwilling to carry out a caesarean section, they should refer you to another obstetrician who will carry out the caesarean section.

Risks of caesarean section

About one in four women will have a caesarean section. The box below shows the risks of having a caesarean section that is planned in advance on the health of a woman and her baby. These risks are for women who have not had a caesarean section before and have no problems in their pregnancy. They do not apply to all women, all babies or all circumstances. If you have an unplanned caesarean section because of a problem that develops during pregnancy or labour, the risks will be different.

Although uncommon, needing admission to an intensive care unit is more likely after a caesarean birth than after a vaginal birth. It is not clear whether this happens as a result of a caesarean section or because of the reasons for needing a caesarean section.

After a caesarean section, you are not more likely than other mothers to have difficulties with breastfeeding once breastfeeding is established, or have postnatal depression or other psychological problems, pain during sex or difficulty controlling your bowels.

If you have questions about specific risks to your health or the health of your baby, please talk to a member of your healthcare team.

Summary of the effects of planned caesarean section compared with planned vaginal birth

Planned caesarean section may reduce the risk of the following in women:

- pain in the area between the vagina and anus (perineum) and in the abdomen (tummy) during birth and 3 days afterwards
- injury to the vagina
- heavy bleeding soon after birth
- shock caused by loss of blood.

Planned caesarean section may increase the risk of the following in babies:

- intensive care unit admission.

Planned caesarean section may increase the risk of the following in women:

- longer hospital stay
- bleeding after the birth that needs a hysterectomy (removal of the womb)
- heart attack.

There is more information about these effects in appendix C of the NICE guideline, available from **www.nice.org.uk/guidance/CG132/NICEGuidance**

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Medical reasons for considering a caesarean section

There are many reasons why you might be offered a caesarean section that is planned in advance.

If your baby is positioned bottom first

Most babies move into a head-first position in the womb before they are born. If you have had no problems with your pregnancy and your baby is still bottom first (known as the breech position) at 36 weeks, your midwife or doctor should offer you a procedure called external cephalic version (ECV). This means they gently try to move the baby round to head first by placing their hands on the mother's abdomen and pushing from the outside. ECV does not always work, but if the baby moves so that it is head first, it can usually be born vaginally.

You should not be offered ECV if:

- your waters have broken
- you are in labour
- you have a scar on your womb, or if your womb is irregularly shaped
- the health of your baby is at risk
- you have any vaginal bleeding
- you have an existing medical condition.

If your baby is positioned bottom first at the end of your pregnancy and you are not able to have ECV, or it has not been successful, you should be offered a caesarean section. This reduces the risk of your baby dying or being injured during birth.

If you have a low-lying placenta

If you have **placenta praevia**, you should be offered a caesarean section.

If you have had a caesarean section before and your doctor confirms at 32–34 weeks that you have a low-lying placenta, you should be offered a colour ultrasound scan to see whether your placenta might be attached abnormally to your womb (a condition known as morbidly adherent placenta). If the results suggest that you do have a morbidly adherent placenta, to help confirm this you should be offered magnetic resonance imaging (MRI) as well. Your doctor should explain about the lack of evidence of any long-term risks to the baby and discuss with you what the MRI involves to make sure you are happy to go ahead.

If the tests show that you are likely to have a morbidly adherent placenta, your doctor should talk with you about having a caesarean section.

If you are HIV positive, have hepatitis or herpes

This guideline is only about caesarean section. If there are other treatments to reduce the chance of you passing on a viral infection to your baby, your doctor or midwife will talk to you about them.

HIV

If you are HIV positive alone, in some circumstances having a caesarean will reduce the risk of passing on the infection to your baby. You should only be offered a caesarean section if:

- you are not receiving anti-retroviral therapy **or**
- you are receiving anti-retroviral therapy and you have a high **viral load or**
- you are HIV positive and have hepatitis C.

If your viral load is between the low and high levels, and you are receiving anti-retroviral therapy, you have the option of having either a caesarean section or a vaginal birth because there is not enough evidence that having a caesarean section reduces the risk of passing on the infection to your baby.

Hepatitis

You do not need a planned caesarean section if you have hepatitis C virus alone, because it will not reduce the risk of passing the virus to your baby.

If you have hepatitis B, you will not need a caesarean section because this will not reduce the risk of passing on the infection to your baby. With your permission your baby can be vaccinated and have immunoglobulin (an injection of antibodies) once it is born, to reduce the risk of getting hepatitis B.

Herpes simplex virus

If you have a first-ever infection of genital herpes in the last 3 months of your pregnancy, you should be offered a caesarean section. But if you had genital herpes before and it comes back at the time of the birth you should not be offered a planned caesarean section, unless you have agreed to take part in a research programme. There is not enough evidence about whether caesarean section cuts down the risk of passing the herpes virus on to your baby if it comes back at the time of birth.

If you are expecting twins

If you are healthy and have not developed complications in your pregnancy, and your first twin is in the head-first position (the usual position for birth), you should not routinely be offered a planned caesarean section, unless you have agreed to take part in a research programme. It is not certain that planned caesarean section improves the health of the second twin in these circumstances.

If you are expecting twins, and the first twin is in the breech (bottom-first) position you should be offered a planned caesarean section. This is in line with current medical practice, although it is not certain that caesarean section lowers the risks associated with twin birth.

If your baby is small

Babies who are not growing well in the womb are known as 'small for gestational age' babies. They have a higher risk of dying or being ill around birth, but there is not enough evidence about whether having a planned caesarean section makes any difference to this risk. You should not routinely be offered a planned caesarean section if your baby is 'small for gestational age' unless you have other complications or you have agreed to take part in a research programme.

If your baby is premature

A baby born too early has a higher risk of death or complications. However, there is not enough research about whether having a planned caesarean section makes any difference to these risks. If your baby is premature you should not routinely be offered a planned caesarean section unless you have other complications or you have agreed to take part in a research programme.

What may affect your chances of needing a caesarean section?

Predicting if you will need a caesarean section

You should not be offered X-rays of your pelvis, or vaginal examinations to measure the size of your pelvic bones, because they do not help to predict the course of your labour. For the same reason, your healthcare team do not need to take any account of your height, the size of your feet or the size of your baby in trying to predict the course of your labour.

If you have a **body mass index** of over 50, your healthcare team should not use this alone when deciding if you will need a caesarean section.

Reducing your chances of needing a caesarean section

Some things are known to reduce the chances of a caesarean section, although they may also affect other aspects of your labour or the birth that are not considered in this guideline. These include:

- Planning to have your baby at home if you are healthy and no problems are expected in your pregnancy.
- Having another woman with you for support throughout your labour.
- Being offered **induction of labour** after 41 weeks of pregnancy. This is safer for the baby.

- Using a chart called a partogram to follow the progress of your labour. At intervals, your midwife or doctor will offer you a vaginal examination to measure how far your cervix has opened up (dilated), and feel your abdomen to see how the baby is moving downwards. If the progress of your labour is more than 4 hours behind the average they should discuss with you what your options are (including whether you can go ahead with a vaginal birth), and take action as appropriate.
- Involving a consultant (senior) obstetrician in decision-making about caesarean section.
- In some cases, the midwife or doctor will need to monitor the baby's heartbeat and contractions throughout labour, using electronic devices attached to your abdomen. This is called cardiotocography, or CTG for short. If the doctor or midwife suspects your baby is not coping well with labour, further action may be offered. This could include immediate caesarean section, but usually a blood sample from the baby is taken before the decision is made. This is done by passing a small tube through a **speculum** to take the blood sample from a pinprick on the baby's scalp. This sample will be tested to see if the baby is coping well with labour. Having this test may avoid an unnecessary caesarean section.

Things that do not affect your chances of needing a caesarean section

Some things make no difference to the chances of a caesarean section, although they may affect other aspects of your labour or the birth that are not considered in this guideline. These include:

- planning to have your baby in a '**midwifery-led unit**' if you are healthy and have no problems in your pregnancy
- walking around while you are in labour
- not lying on your back in the second stage of labour
- being in water during your labour
- having epidural pain relief during labour
- taking raspberry leaves
- early breaking of the waters (**amniotomy**)
- active management during labour (a type of care that includes one-to-one support from a midwife, early breaking of the waters, and the early use of the drug **oxytocin** to encourage the womb to contract).

Further research is needed on whether using complementary therapies (such as acupuncture, aromatherapy, hypnosis, herbal products, nutritional supplements or homeopathic medicines) during labour reduces the chance of having a caesarean section.

Reasons for needing an unplanned caesarean section

You may need an unplanned caesarean section because:

- there is concern about your health or your baby's health
- your labour is not progressing
- you have vaginal bleeding during pregnancy or labour
- you go into labour before the date of your planned caesarean section.

In some situations your baby may need to be delivered as quickly as possible.

Having the caesarean section operation

If you have a planned caesarean section, this should not normally be before the 39th week of pregnancy. This is because there is a chance your baby might have breathing problems soon after birth if born early. These problems are less likely if the baby is born after 39 weeks.

Your preferences for the birth (for example, lowering the screen to see the baby being born, silence so that the first voice the baby hears is yours, or music playing) should be accommodated if possible.

Questions about the operation

- Can you explain why you have decided to offer me a caesarean section?
- What does a caesarean section involve?
- What type of stitches will I have? When will these be taken out?
- Can my partner stay with me throughout the procedure?
- How long will it take to recover after a caesarean section? Will I be able to look after my baby myself?
- How long will I have to stay in hospital?

What happens immediately before a caesarean section

If you are having a caesarean section you should be offered a blood test to check whether you are anaemic.

Around 4–8 of every 100 women lose more than a litre of blood at the time of caesarean section. Some women have a high risk of this happening, if they have:

- heavy bleeding before labour (known as antepartum haemorrhage)
- placental abruption (where the placenta separates from the wall of the womb)
- placenta praevia

- uterine rupture (a tear in the womb, often along the scar of a previous caesarean section).

If you have any of these problems, you may need a blood transfusion and you should have the caesarean section at a maternity unit with blood transfusion services.

If you have been healthy during your pregnancy, you do not need to have:

- screening tests for blood clotting
- cross-matching of blood (this is when a sample of your blood is taken, the blood group is analysed and then the sample is saved in the hospital blood bank ready to be used to order a blood transfusion if you need one)
- an ultrasound scan before the caesarean section; it does not cut down your risk of heavy blood loss or the risk of injury to the baby.

You should be offered antibiotics just before you have a caesarean section because they cut down your risk of getting an infection afterwards. There is no evidence that the antibiotics will affect the baby.

Anaesthetics for caesarean section

A caesarean section should usually be done using a **regional anaesthetic** (spinal or epidural), which numbs the lower part of the body and means you will be awake during the operation. This is safer for you and the baby than a **general anaesthetic**. You may be given the anaesthetic in the operating theatre or in a separate room next to the theatre.

You should be given information about the different kinds of pain relief that you can use after the operation, so that you can be prescribed whatever best suits your needs. If you have a regional anaesthetic for your operation, you should also be offered a pain killer called diamorphine, given by an injection into your spine at the same time that the anaesthetic is given. This reduces the need for other pain relief afterwards.

You will need to have a bladder catheter inserted to empty your bladder because, with a regional anaesthetic, you will not be able to tell if your bladder is full and needs to be emptied.

If you are having a regional anaesthetic, you should also be offered a drug called ephedrine or phenylephrine, which will be given through a drip to reduce your risk of low blood pressure during the operation.

You may need a general anaesthetic if you are having an unplanned caesarean section. Because of the anaesthetic, you are at risk of vomiting during the operation. If this happens, fluid and food particles from your stomach can get into your lungs (this is known as aspiration) and can cause potentially serious inflammation (known as aspiration pneumonitis).

Eating during labour increases the amount of food and fluid in your stomach, and this may increase the risk of aspiration if you have a general anaesthetic. If you have foods such as toast, crackers or low-fat cheese during labour (known as **low-residue foods**) the risk of aspiration is uncertain. Having drinks with the same concentrations of salt and sugar as human body fluid (known as isotonic drinks) during labour gives you energy without giving you a full stomach.

If you have an unplanned caesarean section, your healthcare team should cut down the risk of vomiting and aspiration by:

- offering you drugs or acupressure (which involves wearing wrist bands that apply pressure to special points in your wrists) to try to prevent nausea and vomiting
- offering you antacids to reduce the acidity in your stomach and drugs to keep the amount of food in your stomach low, and reduce its acidity
- using standard emergency procedures to prevent fluid and food particles going into your lungs.

During the operation

You have more risk of a blood clot in your lungs or in your legs if you have a caesarean section. To reduce the risk of this happening you may be offered for example, **anti-embolism stockings**, help to walk around soon after the caesarean section, or injections during and after the operation. Your doctor should assess your risks of blood clots when deciding which of these you need.

You should be given the drug oxytocin by slow injection into a vein once your baby is born to encourage your womb to contract and cut down blood loss.

Checking your baby's health

A trained practitioner who is skilled in resuscitating newborn babies should be present if your healthcare team thinks that your baby's health is at risk. If you have had a caesarean section because of suspected distress in the baby, your healthcare team should measure the pH balance (acidity) of the blood in the artery in the baby's umbilical cord. This will help them to confirm whether your baby was distressed and plan the baby's care.

Babies born by caesarean section are more likely to have a lower temperature than normal. Your healthcare team should follow accepted good practice for keeping babies warm (for example, having a higher temperature in the operating theatre, or wrapping the baby in blankets).

Your healthcare team should encourage you to have skin-to-skin contact with your baby as soon as possible. This tends to improve how women feel about their baby, their mothering skills and their chances of successfully breastfeeding. It also tends to reduce the amount a baby cries.

After the operation

Immediately after the operation you should be observed on a one-to-one basis by a properly trained member of staff until you are breathing normally and are able to talk and communicate clearly.

After you recover from the anaesthetic, the staff looking after you will check your breathing rate, heart rate, blood pressure and whether you are feeling pain or feeling sleepy every half hour for 2 hours, and then every hour. These observations will be done for a number of hours, depending on what type of anaesthetic and what type of pain relief you had during the operation. If you are not feeling well or if the observations are changing then a doctor will come and see you.

If you think that your care does not match what is described in this booklet, please talk to a member of your healthcare team in the first instance.

After a caesarean section, you may have more difficulty starting to breastfeed your baby. Therefore, you should be offered extra support and help to do this. Once you have started breastfeeding, you are as likely as other women to be able to carry on.

Unless you have an infection that needs treatment, you do not need to continue to have antibiotics after your caesarean section.

You should be offered pain relief that you can control yourself with drugs such as morphine (called patient-controlled analgesia or 'PCA'). However, these can make you drowsy and nauseous, so you should also be offered non-steroidal anti-inflammatory drugs (NSAIDs), such as diclofenac, if they are suitable for you. Taking NSAIDs can cut down the amount of morphine-like painkillers (such as diamorphine) that you might need.

If you are recovering well and you have no problems after your caesarean section, you should be able to eat and drink if you are thirsty or hungry.

If you have had a general anaesthetic, you do not need to be offered routine respiratory physiotherapy.

If you have had a regional anaesthetic, your bladder catheter will be removed once you are able to walk and at least 12 hours after your last **'top-up dose'** of anaesthetic.

Your wound dressing will be removed after 24 hours. Wound drains do not cut down infection or the risk of bruises, so they should not be used in caesarean section.

Your healthcare team should give you the opportunity to discuss the reasons for your caesarean section at an appropriate time before you leave hospital, or later if you prefer. They should also provide you with information about your options for future pregnancies.

Current good practice for the care of your baby after a caesarean section should follow the accepted care for any newborn.

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Going home

Women generally stay in hospital for 3–4 days after a caesarean section. But if you and your baby are well, and if you wish to go home early, you should be able to go home earlier than this (after 24 hours) and have follow-up care at home.

In addition to routine postnatal care, you will need advice about recovering after a caesarean section and possibly about other complications if you had these during pregnancy or childbirth.

When you go home, you should be given pain killers to take for as long as you need them. For severe pain you should be offered co-codamol and ibuprofen; for moderate pain, you should be offered co-codamol; and for mild pain, you should take paracetamol.

You should be given advice about how to look after your wound. Advice should cover wearing loose, comfortable clothes and cotton underwear, gently cleaning and drying the wound daily, and looking out for possible wound infection (such as more pain, redness or discharge) or fever.

You should tell your midwife or doctor if you have symptoms such as pain on passing urine, or leaking urine.

You should tell your midwife or doctor if your vaginal bleeding increases, or becomes irregular or painful. After caesarean section, this is more likely to be caused by infection in the lining of the womb than by retaining part of the placenta.

You should tell your midwife or doctor if you develop a cough or shortness of breath, or swelling and pain in your legs, so that they can make sure that these symptoms are not caused by a blood clot.

After a caesarean section, you will not be able to do some activities straight away such as driving a car, carrying heavy things, exercise or having sex. You should only start these once you feel that you are able to do so and when they do not cause you pain. If you are unsure, you could discuss this with your midwife.

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Having a baby when you have had a caesarean section before

If you have already had a caesarean section, it is not certain what the overall effect on your health is likely to be if you have another caesarean section rather than a vaginal birth. When you and your doctor are discussing whether to plan a caesarean section or a vaginal birth, your doctor should take account of:

- your preferences and priorities
- the risks and benefits of another caesarean section
- the risks and benefits of a vaginal birth after caesarean section.

If you have had between one and four caesarean sections before, the risk of fever, damage to your bladder and injury during surgery is the same whether you have another caesarean section or a vaginal birth. The risk of uterine rupture is higher with a vaginal birth, but rare.

If you want to have a vaginal birth, during your labour you should be offered electronic heart rate monitoring of your baby, and be cared for in a maternity unit where a caesarean section can be done very quickly if needed, and where there are blood transfusion services. This is even more important if your labour is induced, because the risks of some complications, such as the wall of the womb tearing, are higher.

Questions if you have had a caesarean section before

- Will I need to have another caesarean section?
- Can I choose to have a caesarean section this time?
- What are the pros and cons of having another caesarean section?
- Can I try to give birth vaginally this time? Are there any risks to my health and my baby's health?

Medical terms

Abdomen – tummy

Amniotomy – using a plastic hook inserted through a woman's vagina to release the waters (called amniotic fluid) around the baby

Anti-embolism stockings – tight stockings (also known as 'compression stockings') specially designed to reduce the risk of developing a blood clot in your legs. The stockings squeeze your feet, lower legs and thighs, helping your blood to circulate around your legs more quickly.

Body mass index (BMI) – your weight in kilogrammes (kg) divided by the square of your height in metres (m^2).

Complications – extra health problems after an operation or arising from another condition or infection.

General anaesthetic – an anaesthetic that puts you to sleep.

Induction of labour – methods that are used to start labour. These include a membrane sweep, breaking the waters, using tablets inserted into a woman's vagina or a drip.

Low residue foods – foods that are easy to digest, they are low in fibre and other substances that the body finds it hard to digest.

Midwifery-led unit – a unit close to a labour ward or a separate unit that provides care led by midwives, with a minimum of medical interventions and in a home-like environment. Different phrases may be used to describe this type of unit. If you are not sure, ask your doctor or midwife.

Morbidly adherent placenta – a rare condition in which the placenta attaches abnormally to the wall of the womb. It can cause severe bleeding.

Obstetrician – a doctor who has received specialised training and experience in the care of women during pregnancy and childbirth.

Oxytocin – a hormone naturally produced by the body which causes the womb to contract. A synthetic copy of this hormone is sometimes used during childbirth to increase or start contractions of the womb.

Placenta praevia – when the placenta is low-lying in the womb and covers all or part of the entrance to the womb.

Pre-eclampsia – a condition that happens in the second half of pregnancy that can cause serious problems for you and your baby if it is not detected and managed. Signs of pre-eclampsia are high blood pressure, protein in the urine and/or swelling of the hands, feet, ankles and sometimes the face.

Regional anaesthetic – a type of anaesthetic that numbs the lower part of your body. Spinal and epidural anaesthetics are types of regional anaesthetic. The anaesthetic drugs are either given through an injection into the spine before the start of the operation, or run into your spine through a small tube (catheter). The catheter may have been put in place as part of the epidural used for pain relief during labour, or at the time of the operation.

Speculum – a metal instrument that is inserted into a woman's vagina so that examination of the cervix and vagina can be done. It is used in smear tests and most gynaecological examinations.

'Top-up dose' – a dose of spinal or epidural anaesthetic drugs given to maintain the effects of the anaesthetic.

Viral load – the amount of virus in your blood. In this guideline, a low viral load is less than 50 copies of the virus per ml of blood and a high viral load is more than 400 copies of the virus per ml of blood.