Caesarean section (C section)

A caesarean section (C-section) may be planned (elective caesarean section) or unplanned (including emergency or crash caesarean sections).

What is a caesarean section?

Caesarean section is an operation in which a cut is made in your tummy (abdomen) and in the wall of your womb (uterus) so that your baby can be delivered without passing down through your birth canal (vagina).

Why are C-sections done?

A caesarean section may be planned (elective caesarean section), or unplanned (including emergency or crash caesarean sections):

Planned caesarean section

Reasons for a planned caesarean section include:

- The baby is in the breech position (feet first) and your doctor or midwife has been unable to turn them by applying gentle pressure to your tummy, or you'd prefer they did not try this.
- Low-lying placenta (placenta praevia).
- Pregnancy-related high blood pressure (pre-eclampsia).
- Certain infections, such as a first genital herpes infection occurring late in pregnancy or untreated HIV.

In a planned (elective) caesarean section, you and your obstetric team decide before labour that you will be having a caesarean section. You don't go into labour, and the section is usually performed at 39 weeks, in order to do it before labour begins spontaneously. This means you will know the date of your baby's birth in advance.

Emergency caesarean section

Reasons for an emergency caesarean section include:

- Your baby is becoming increasingly distressed.
- Your labour is not progressing, despite interventions.
- You have uncontrolled high blood pressure, or pre-eclampsia.
- Your midwife and obstetrician think that the baby won't come down through your pelvis, usually partly because of the baby's size and position and partly because of your pelvic shape.
- Unexpected difficult position of the baby (for example, unexpected breech baby).

All other caesarean sections are considered emergency caesarean sections. The degree of urgency will vary greatly, depending on the reason. An emergency caesarean section generally means one that was not originally planned.

It is often performed after labour has begun, in the first or second stage of labour, because it is felt to be the safest delivery option for you and your baby. Most emergency caesarean sections are performed 1-2 hours after the decision is taken to do one.

A crash section will take place when things are more urgent, and things are done very quickly so that your baby will probably be born within half an hour of the decision.

What are the different types of C-section?

Most caesarean sections are of a type called a lower-segment caesarean section (LSCS); a few are of a type called a classical caesarean section.

Lower segment caesarean section (LSCS)

Most caesarean sections are lower segment caesarean sections. This is often written as LSCS on your hospital notes. There is usually a horizontal cut low down on your tummy, and then a horizontal cut across the lower part of the womb (uterus).

This type of section causes the least blood loss and has fewer complications for the mother, as well as allowing her to consider a vaginal birth in the next pregnancy.

A classical caesarean

A classical caesarean section involves cutting the womb longways. A low vertical incision caesarean section is similar to a classical section, but the cut is as low as possible in the womb.

These types of caesarean section are sometimes performed at very early gestations (when the lower segment of the uterus has not yet formed). It is more prone to complications, and any woman who has had a classical section is usually advised to have an elective section in subsequent pregnancies:

Classical sections are not commonly performed, as it will often be the case that vaginal delivery will be considered equally safe for a very premature baby, and is a safer procedure for you, which doesn't affect your future ability to have a vaginal delivery.

A caesarean hysterectomy

A caesarean hysterectomy is an emergency procedure: it is a caesarean section followed by the removal of the womb. It is done if life-threatening bleeding can't be stopped, or if the afterbirth (placenta) can't be removed because it has grown abnormally far into the womb (this is called placenta accreta).

How long does a caesarean section take?

A caesarean section typically takes 40 minutes to an hour from start to finish.

Why is it called a caesarean section?

The name caesarean section probably came from the Latin verb 'caedere' which means 'to cut.' It's considered very unlikely that Julius Caesar was born by caesarean, as his mother is known to have survived his birth and, in Roman times, caesarean sections were done only when a woman died in childbirth, in an attempt to save the baby.

The first record of a mother and baby surviving a caesarean section comes from Switzerland in 1500. After several days in labour and help from thirteen midwives, the wife of Jakob Nufer, a sow gelder, performed the operation on his wife.

She and the baby lived and she subsequently gave birth normally to five children, including twins. These days a caesarean section is an extremely safe procedure for mother and baby.

What do I need to consider?

Your hospital team will discuss all the pros and cons of having a caesarean birth with you. Your preferences and concerns are central to the decision-making process. The decision will depend on lots of factors, including your priorities and plans for future pregnancies. Some factors to take into account include:

- Your hospital stay is likely to be longer after a caesarean rather than a vaginal birth.
- You are more likely to need a caesarean birth in a future pregnancy if you have already had one.
- You should be offered early skin-to-skin contact with your baby after a caesarean birth.
- If you wish to breastfeed, you will be given support and help to do this as soon as possible after the birth of your baby.
- If you are recovering well, have no complications and don't have a fever, you should usually be offered the chance to go home after 24 hours, with close follow-up at home. There is no evidence that you or your baby are more likely to need readmission if you are discharged home at this stage.
- Caesarean birth is not linked to a higher risk of depression, post-traumatic stress symptoms, problems breastfeeding, painful sex or incontinence affecting your bowels.
- You can restart activities such as driving, carrying heavy items, exercise and having sex once you feel you have fully recovered (including any pain or physical restrictions).

The National Institute for Health and Care Excellence (NICE) have updated guidance on maternal choice for caesarean birth - for those women or pregnant persons with no medical indication for a C-section but who are requesting one.

NICE have advised that these requests need to be discussed and documented. Pros and cons need to be discussed so women can make an informed choice. Mental health support should be offered for those with severe anxiety or fear around giving birth (tokophobia).

If, after an informed discussion about the options for birth (including the offer of mental health support if appropriate), the woman or pregnant person still requests a caesarean birth, the medical team should support their choice and offer a C-section within their obstetric unit.

Are you awake during a C-section?

Most caesarean sections are performed when you are awake, using an epidural anaesthetic or a spinal block. These procedures are called regional anaesthetics.

They numb your lower half, so that you feel no pain but are completely awake during the procedure, and they don't usually make your baby sleepy either. This means you can see and hold your baby as soon as he or she is born, and your partner can be in the room to share the experience too.

Occasionally a general anaesthetic is needed. This may happen because your caesarean is a very urgent, 'crash' caesarean section (a general anaesthetic is much quicker than a spinal or epidural, unless you already have an epidural in place).

Some women don't want to be awake, and choose general anaesthetic. If this is the case the anaesthetist is likely to want to talk to you about the advantages, for you and your baby, of an 'awake' delivery, before you finally decide. If you have a general anaesthetic then:

- Unlike epidurals and spinals, the medications used in a general anaesthetic reach your baby, and may make him or her sleepy for a while after birth.
- You and your partner won't see your baby born.

- You are likely to feel groggy and sleepy for an hour or two afterwards.
- Recovery is likely to be a little slower after a general than after a regional anaesthetic.
- Complications such as chest infections are a little more likely after a general anaesthetic.
- You may experience side-effects such as sore throat, feeling sick, muscle pains and shivering.
- Rare complications include acid getting into your lungs, serious allergic reactions and being awake during the procedure.

What happens during a C-section?

Planning and preparation

If your caesarean section is planned then you will know the date and time of your surgery in advance, and will turn up to the obstetric unit 'on the day'. Usually you will have been asked not to eat or drink for a period beforehand. You will normally speak with the surgeon and anaesthetist before you go into theatre.

If your caesarean section is an emergency then the same plans will need to be made more quickly. You will be given medications to settle your stomach as, unlike someone planning a caesarean, you may not have an empty stomach. Blood will be taken and cross-matched, in case you need a transfusion.

- If you have an epidural the anaesthetist will top it up so that you can feel no pain. If you don't have an epidural the anaesthetist will discuss with you how you want to have your caesarean section. If there is time, you will be able to choose an epidural or a spinal anaesthetic. If things are too urgent you may need to have a general anaesthetic.

In the operating theatre

Your partner can be with you in theatre for a caesarean section if you are awake, although not usually if you have a general anaesthetic, as their role is to support you, rather than to watch.

You will have an intravenous drip put in. Then (if you have chosen to be awake, which is usual) the anaesthetist will insert an epidural or spinal anaesthetic and will check that this is working, so that you feel no sensation in your tummy (abdomen).

You will be tilted slightly to your left to stop your womb (uterus) lying on top of the major blood vessels behind it, as this can otherwise lower your blood pressure.

There will be several people in the operating theatre, including the surgeon and an assistant, one or two theatre nurses, one or two anaesthetists, an operating department assistant, one or two midwives, and sometimes a doctor to check the baby. This typically means 8-10 people are present, apart from you and your partner.

A catheter will be used to empty your bladder, so that it doesn't get damaged during surgery (this will generally stay in until the next day). A screen will be erected in front of you so that you don't see the surgery (although it may be reflected in the lamps above you). This can be lowered when the baby is delivered.

Your partner should be aware that it's often very warm in obstetric theatre, for the sake of the baby, and people who have not been in theatre before are quite prone to feel faint, particularly if they watch the surgery. Your partner will be encouraged to be with and talk to you, rather than looking over the screen.

The obstetrician will make a 10-20 cm cut in your tummy, and, usually 5-10 minutes later, your baby will be lifted up for you to see, and may be lifted on to you as soon as the cord is cut. (If this is something you would really like then be sure to discuss it with your midwife beforehand).

You should not feel any pain, although you may feel pulling and pressure. Some women describe it afterwards as a feeling that someone is 'rummaging around' in their tummy.

Babies born by caesarean section often do not cry immediately; it can be a couple of minutes before they do so, as they have not had quite the same stimulus to start breathing that a baby has after vaginal birth.

Your baby will be checked by the doctor or midwife to make sure that he or she is breathing well and has a good heart rate. Whilst you are stitched your partner can usually hold the baby. Stitching normally takes around 30-40 minutes.

You will be given medicines to protect against infection, to stop you feeling sick, and to help your womb contract down. You may also be given blood-thinning medication (to reduce the chance of blood clots), or be given special stockings to wear for 24 hours.

Afterwards you and your baby will be transferred to the postnatal ward, although depending on the layout of the unit, you may be kept in a postoperative unit for observation for several hours first.

What to expect after a caesarean section

Everyone is different, of course. You are likely to feel a mixture of tiredness and excitement. you may feel exhilarated and overwhelmed at the birth of your baby, and you may feel deeply disappointed if a caesarean section is not what you planned.

If your baby is in any way unwell you may feel very anxious. On top of this you will be tired, you may at first feel nauseated, and you might feel some pain and/or nausea. Pain and nausea after caesarean section can be treated very easily, so you should tell someone immediately.

You will be tired for some time after a caesarean section. This can partly be the effect of anaesthetic and painkillers, but is also because surgery is an injury to your body, and being tired is your body's signal that it needs rest to recover.

You will have vaginal bleeding after delivery, which will tail off over several weeks. You will also experience the same afterpains as women do after vaginal delivery, as your womb (uterus) contracts down after the birth.

Most women stay in hospital for three days or so after a planned caesarean section. The scar from a caesarean section is usually low down, and will often be quite numb in the hours and even days after your operation. You may have dissolvable stitches, which will disappear over a couple of weeks. If you have stitches that need removing - this is normally done at five days.

Pain relief after caesarean section

Your medical team will discuss all the options for pain relief after your caesarean section with you. They will make sure you have adequate pain relief. However, it is important to recognise that stronger painkillers (such as morphine, dihydrocodeine, tramadol or oxycodone) can increase the risk of your baby becoming drowsy or having breathing problems. For this reason:

- Use of these stronger painkillers will be limited to the lowest effective dose for the shortest time possible.
- You should not use these stronger painkillers for more than three days without close supervision.
- If you are discharged home on stronger opioid painkillers, you should look out for signs in your baby such as drowsiness, breathing difficulties, constipation or difficulty feeding. If you notice any of these, you must contact your midwife or doctor.
- You may need laxatives or anti-sickness medication when taking stronger painkillers.
- Some medicines containing codeine, that are available without prescription, should not be taken if you are breastfeeding - your pharmacist can advise.

Can I choose to have a caesarean section?

There are some situations where a caesarean section will be advised and planned. This may be because a vaginal labour is felt to be a danger to you or the baby, or because it is felt that the baby could not be delivered vaginally.

Reasons for planned caesarean section include:

- Most cases when your baby is in the breech position. However, if you don't have any underlying medical problems and you and your baby are well, your medical team will discuss 'external cephalic version' with you. This involves placing gentle pressure on your tummy to help your baby turn in the womb (uterus) until he or she is facing head-first.
- When you have a low-lying placenta (placenta praevia) which is likely to bleed dangerously or obstruct the baby's birth.

- Some cases of abnormalities of the womb, such as large fibroids, which might obstruct the baby's exit.
- Some cases of pregnancy-related high blood pressure (pre-eclampsia).
- If you have certain infections, such as a first genital herpes infection occurring late in pregnancy. This is not routinely offered if you have been previously diagnosed with genital herpes.
- If you have both hepatitis C and HIV (if you have hepatitis B or hepatitis C without other infections, you would not be routinely offered a caesarean section).
- Some cases where you are having twins.
- Most cases if you are having triplets or more.
- Some cases where you have had a previous caesarean section (this partly depends on the reason for the last caesarean section, and on how long ago it was).
- Most cases where you have previously had a classical caesarean section.
- When your doctors believe your pelvis is too narrow to allow your baby to be born vaginally, usually because a previous baby was unable to be born vaginally. It's important to be aware that your height or shoe size is not a good indicator of whether your pelvis will be too narrow.
- Your baby is distressed in the womb prior to labour.
- Some cases where your baby is very premature.
- You have severe anxiety about childbirth, if counselling from a specialist team does not relieve your concerns.

Sometimes, a planned caesarean section is offered because it's what you really want, even though there's no medical reason to suggest that vaginal delivery is less safe.

You may feel this way because you have had a difficult previous vaginal delivery, or have witnessed one, or you may be very worried about vaginal birth, or you may feel you desperately need to set a particular date.

This type of section is usually done at about 39 weeks of pregnancy, to allow the baby to spend as long as possible in the womb. If you go into labour before this then your caesarean section will be performed as soon as is possible and safe.

Although the risks of caesarean section to mother and child are very low, they are usually higher than the risks of vaginal delivery. For this reason your medical team will want to explore the reasons for your decision with you fully, and make sure that you understand the increased risks, before deciding with you if it is the right thing to do.

The team will want to do the right thing for you and your baby, taking into account your feelings, so it would be most unusual to force you to have a vaginal delivery if you remained certain that you wanted or needed to have a caesarean section.

What is a 'crash' caesarean section?

In the case of a 'crash' section the team will be dealing with a true emergency situation, when your baby has to be delivered with extreme urgency and minutes may count. There may be very little time for you to take in what's happening or have your say.

If you don't already have an epidural in place and working when the decision is taken you will most probably need a general anaesthetic, as these are much quicker.

A crash section is a rare event, performed if lives are thought to hang in the balance. It might be done if:

- You develop very heavy bleeding.
- You have severe or worsening pre-eclampsia or eclampsia.
- There is bleeding from the baby (this is rare as most bleeding in labour is from the mother).
- You have a cord prolapse (when the umbilical cord comes down ahead of the baby and gets trapped between baby and cervical edge, cutting off the baby's blood supply).
- Your baby develops severe fetal distress.

- A forceps or ventouse delivery has not succeeded.
- Your baby is a second twin who presents in a difficult position (for example, lying transversely across the womb) after the first twin is born.

Experiencing a crash caesarean section can be a very traumatic experience. You may feel frightened and powerless and that your choices have been taken away from you. Your plans for your delivery have been dashed and (if you had a general anaesthetic) you will not have seen your baby's birth.

There may not have been time for proper explanations, or it may be that, because you were unwell or because of the anaesthetic, you did not hear them or take them in. As a result you may have no understanding of what decisions were taken, and why. Your partner may have felt excluded, rushed and frightened.

It is very important that you have a chance to talk through what happened with the team that looked after you and who made those decisions for you. It is your body and if you have been operated on without fully understanding the situation, it's important that they explain events to you, and that you are able to understand as much of the sequence of events as you want to.

Make sure an appointment to do this is arranged before you leave hospital, if it does not happen whilst you are in hospital. Prepare a list of questions and consider starting by asking the doctor or midwife if they would describe what happened to you in the order in which it happened, explaining their decisions, so that you can form a picture of how your baby was born.

Whilst you may find it upsetting to go back over a frightening time, it will usually help you to gain a much better understanding of what happened and why.

What are the risks of a caesarean section?

A caesarean is generally a very safe procedure, but like all surgery there are some risks.
These include an increased risk to you of:

- Infection - of the wound or the womb (uterus) lining.
- Blood clots in the leg or lung.
- Excessive bleeding.
- Damage to the bladder or bowel - this happens to about 1 in 1,000 women.
- Temporary breathing difficulties in your baby, because the fluid in your baby's lungs in the womb hasn't cleared quite as well as it does during vaginal labour.
- Needing an emergency hysterectomy (occurs in about 7 per 1,000 caesarean sections).

There is an increased risk to your baby of:

- Grazes or small cuts caused when the surgeon makes the first incision into your womb. These are usually only slight, and may be difficult to avoid if your baby is pushed against the area of the womb where the cut needs to be made. They occur in 1 or 2 out of every 100 caesarean sections.

Is caesarean section safer for very premature babies?

There is no clear evidence that caesarean section is safer than vaginal birth in very preterm babies. Vaginal birth can be very gentle for a tiny baby.

Caesarean section is a more difficult operation when a baby is extremely premature. It may also mean you having a classical caesarean section - a vertical cut in the main part of your womb (uterus). Having this type of section means you may be advised not to try for a future vaginal delivery (see the section on vaginal birth after caesarean, above).

- Most obstetricians advise that, if your baby has to be born before 24 weeks of pregnancy then unless you are dangerously unwell and urgent delivery of your baby is essential for your health (for example, very high blood pressure or pre-eclampsia) then a vaginal birth is the best option for both you and your baby. Babies of less than 24 weeks of gestation have a very high risk of not surviving, however they are born, and doctors will be considering whether it is right to put your present health and your chance of a future, healthy vaginal delivery at greater risk.
- After 24-25 weeks of pregnancy a caesarean section may be considered if the baby is lying transversely across your womb (instead of in the head-down position), or is in the breech position with a foot down low, as this makes vaginal delivery more of a risk for your baby than caesarean section. You will be involved in the decision of what to do for the best. Again, if you are dangerously unwell with pre-eclampsia then a caesarean may be the safest option for you.
- After 26 weeks a caesarean section will be offered if the baby is not in a safe position to be born vaginally, or if you are dangerously unwell so that a caesarean is the safest option for you.

Can I have a vaginal delivery in the future if I have had a caesarean section this time?

For women who have had lower-segment caesarean sections (LSCSs) - which is most women who have had caesarean sections - then vaginal birth after caesarean (VBAC) is often possible if you want to try. The chance of this being successful is greater if you have had a vaginal delivery in the past. If you have had two LSCSs in the past, your doctors may still be happy for you to try for a vaginal delivery, particularly if you have had a vaginal delivery in the past.

About 3 of every 4 women who plan VBACs manage to have a vaginal delivery. For those who don't manage to, it's usually because they went past 41 weeks (you won't usually be induced if you have had a previous caesarean) or because their labour progressed too slowly (doctors will be cautious about giving you oxytocin to speed your labour if it is a VBAC).

The risk that worries doctors is of thinning, splitting or full-on rupture of the previous scar.

- Thinning and splitting (dehiscence) occur in around 1 in 200 women having a VBAC.
- Uterine rupture is rare, occurring in about 1 in 1,200 women, and can occur whether or not they are having a VBAC. It is particularly seen in women with a (rare) condition called vascular Ehlers-Danlos syndrome.

An experienced midwife will monitor you for any signs that the scar on your womb (uterus) is starting to split. This typically includes pain that doesn't go away between contractions, scar pain, relaxing of the womb with slowing or stopping of contractions, your baby moving back up the birth canal, and sudden fetal distress. Uterine dehiscence is usually treated with an urgent caesarean section, and when it is carefully managed both mother and baby are usually fine.

Uterine rupture is much more serious but is very rare. It can be dangerous for mother and baby if it is not recognised quickly and treated promptly, as it can cause severe bleeding - the treatment is immediate caesarean section, often with hysterectomy.

The National Institute of Health and Care Excellence (NICE) recommends:

- For women who have had up to and including 4 caesarean births, the risk of fever, bladder injuries and surgical injuries does not vary with planned mode of birth, but that the risk of uterine rupture is higher for planned vaginal birth.
- Women planning a vaginal birth who have had a previous caesarean birth should have electronic fetal monitoring during labour, and care during labour in a unit where there is immediate access to caesarean birth and on-site blood transfusion services.
- Pregnant women with both previous caesarean birth and a previous vaginal birth should be informed that they have an increased likelihood of having a vaginal birth than women who have had a previous caesarean birth but no previous vaginal birth.

How many caesarean sections can I have?

There is no fixed limit to the number of caesarean sections that you can have. However, the risks of caesarean section for you do start to increase if you have more of them. The increased risks associated with increasing numbers of caesarean sections include:

- Scar tissue on the womb (uterus) and in the tummy (abdomen) can make the operation more tricky and more likely to bleed more and heal more slowly.
- Bladder injuries are more likely because the bladder gets stuck to old scar tissue.
- The risks of heavy bleeding and of needing a hysterectomy increase sharply after more than three caesareans, and is thought to be 1 in 40 women having their fourth caesarean. This is partly because the surgery is more tricky, due to scar tissue, and partly because the placenta grows deeply into the scar and cannot be removed.

Further reading

- Preterm labour and birth; NICE Guidelines (November 2015 - last updated June 2022)
- Intrapartum care for healthy women and babies; NICE Guideline (Dec 2014 - updated Dec 2022)
- Caesarean birth; NICE Clinical Guideline (March 2021 - last updated January 2024)
- Inducing labour; NICE guideline (November 2021)

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