Concerns and questions
If you have any problems you wish to discuss before you come into hospital, please telephone the Delivery Unit, Rosie Hospital 01223 217649, during normal working hours, who can arrange for you to discuss your concerns with one of the obstetric anaesthetists.

Help with this leaflet:
If you would like this information in another language, large print or audio, please ask the department where you are being treated, to contact the patient information team: patient.information@addenbrookes.nhs.uk.
Please note: We do not currently hold many leaflets in other languages; written translation requests are funded and agreed by the department who has authored the leaflet.

We are now a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

The Rosie Hospital
Patient Information
Caesarean section: A guide to anaesthesia

About one in five babies are born by caesarean section and two thirds of these are unexpected; you should therefore read this booklet even if you do not expect to have a caesarean yourself.

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Authors Dr James Bamber
Department Addenbrooke’s Hospital, Cambridge University Hospitals NHS Foundation Trust, Hills Road, Cambridge, CB2 0QQ www.cuh.org.uk
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Having a baby is an unforgettable experience

A caesarean section can be just as satisfying as a vaginal delivery. The most important thing is that you and your baby are safe. A caesarean section may be the best way to ensure this.

There are several types of anaesthesia for caesarean section. This booklet explains the various choices. You will be able to discuss them with your anaesthetist prior to your operation. Your anaesthetist is responsible for your well being and safety during surgery. Anaesthetists are fully qualified doctors who have had further training in anaesthesia and pain relief.

Your caesarean section may be planned in advance; this is called an **elective caesarean section**. This may be advisable if there is an increased chance of complications developing during a vaginal delivery.

In some cases it may be recommended in a hurry, usually when you are already in labour. This is an **emergency caesarean section**. This may be recommended because of poor progress in labour or because you or your baby’s condition is deteriorating.

Types of anaesthesia

There are two main types: you can either be awake or unconscious. Most caesarean sections are done under regional anaesthesia, when you are awake but the sensation from your lower body is numbed. It is usually safer for you and your baby and allows both you and your partner to experience the birth together.

Rare or very rare complications

- Damage to teeth, lips and tongue, if the anaesthetist finds it difficult to get the breathing tube in the right place (1 in 4500).
- Awareness. The risk of you becoming conscious during your operation is approximately 1 in 250 to 1000 women. Monitors are used during the operation to record how much anaesthetic is in your body and how your body is responding to it. These normally allow your anaesthetist to prevent your anaesthetic becoming too light.
- Severe allergic reaction to drugs (anaphylaxis) occurs in 1 in 10000 to 20000 women. Allergic reactions will be noticed and treated very quickly. Very rarely these reactions lead to death even in healthy people.
- Deaths caused by anaesthesia are very rare (1 in 100000, and are usually caused by a combination of four or five complications together. There are about one to two anaesthesia related deaths per year in the UK.

Emergency Caesarean section

It may become necessary to deliver your baby urgently by emergency caesarean section.

When possible this will be performed under regional anaesthesia. If you already have an epidural catheter for pain relief in labour, then this may be topped up with stronger local anaesthetic. This will normally give excellent anaesthesia for the operation. Alternatively a spinal anaesthetic may be performed.

General anaesthesia may be necessary if your baby needs to be delivered very urgently, regional anaesthesia is inappropriate or the spinal or epidural has not been fully effective.
Some reasons why you may need a general anaesthetic

- Your baby may need to be delivered so urgently that there is not time for regional anaesthesia to work.
- In certain conditions when blood cannot clot properly, regional anaesthesia is best avoided.
- A very abnormal back may make regional anaesthesia impossible.
- Occasionally spinal or epidural anaesthesia does not work properly. This happens in (1 in 20) women following an epidural and (1 in 100) women following a spinal.

Risks of general anaesthesia

Common complications

- 1 in 10 women feel sick and vomit after surgery. Sickness can be treated with anti-vomiting drugs (anti-emetics), but it may last from a few hours to several days.
- 1 in 5 women experience a sore throat resulting from the tube in your airway to help your breathing.
- Pain during injection of drugs
- Chest infection (1 in 5 women). However, most are not severe.

Uncommon complications

- Muscle pains if you have been given a drug called suxamethonium. This is a muscle relaxant which is given for emergency surgery when your stomach may not be empty.
- Corneal abrasion (scratch on the eye) in (1 in 600) women.
- Severe chest infection (pneumonia) due to fluid from the stomach entering the lungs. (1 in 300) women.
- Airway problems leading to low blood-oxygen levels in (1 in 300) women.

Regional anaesthesia

There are three types of regional anaesthesia

**Spinal** – the most commonly used method. It may be used in planned or emergency operations. The nerves and spinal cord that carry feelings from your lower body and control muscle movement are contained in a bag of fluid inside your backbone. Local anaesthetic and pain relieving drugs, similar to morphine, are injected inside this bag of fluid using a very fine needle. This method works fast and requires only a small dose of local anaesthetic.

**Epidural** – a thin plastic tube is placed outside the bag of fluid, near the nerves carrying pain from the uterus. It is often used to give pain relief during labour. It can be topped up with stronger local anaesthetic if a caesarean section is required.

In an epidural a larger dose of local anaesthetic is needed than in a spinal, and it takes longer to work.

**Combined spinal-epidural** – a combination of spinal and epidural. The spinal can be used for the caesarean section. The epidural can be used to give more anaesthetic if required, and sometimes to give pain relieving drugs after the operation.

**General anaesthesia**

If you have a general anaesthetic you will be unconscious for the caesarean section. It is used less often nowadays. It may be needed for some emergencies, if there is a reason why regional anaesthesia is unsuitable or if you prefer to be asleep. Your partner will not be able to be present at the birth if you require a general anaesthetic.
Advantages of regional compared with general anaesthesia

- spinals and epidurals are usually safer for you and your baby
- they enable you and your partner to share in the birth
- you will not be sleepy afterwards
- they allow earlier feeding and contact with your baby
- you will have good pain relief afterwards
- your baby will be born more alert

Disadvantages of regional compared with general anaesthesia

- spinals and epidurals can lower the blood pressure. This happens commonly after a spinal (1 in every 5 women), and occasionally after an epidural (1 in every 50 women). This is easily treated with the fluids given through your drip and by giving you drugs to raise your blood pressure
- in general they take longer to work than a general anaesthetic
- occasionally they make you feel shaky
- rarely they do not work perfectly; so a general anaesthetic is needed. This happens in about 1 in every 20 women following an epidural and in 1 in every 100 women following a spinal.

Also they may cause:

- itching during the operation from the morphine like pain killer used
- local tenderness in your back for a few days.
- headache in less than 1 in 100 women following an epidural or 1 in 500 women following a spinal (uncommon) – this can be treated, occasionally by another injection in your back.
- rarely tingling down one leg, residual numb patch on a leg or foot or a weak leg lasting for several weeks or months (in 1 in 7000) spinals/epidurals. Permanent nerve damage is even more rare, it occurs in about (1 in 100 000).
- Infections (epidural abscess or meningitis) are very rare.

Most women need pain relieving drugs for a few days after the caesarean section. It is important that you are comfortable so that you can recover quicker from the surgery. It is usual to be prescribed regular pain relieving tablets three to four times a day. The midwives will be able to give you further pain relief if required. All of these drugs are safe and will not affect your baby when you breastfeed.

What will happen if you need a general anaesthetic?

The need to not eat and drink and to take your tablets to reduce stomach acid is exactly the same as for a caesarean section under regional anaesthesia. In addition, upon arrival in the operating theatre, you will be given an antacid to drink. Monitoring for your blood pressure, heart rate and measuring the oxygen levels in your blood will be attached.

The anaesthetist will give you oxygen to breathe through a face mask for three minutes. Next the anaesthetist will give the anaesthetic through the drip and you will rapidly lose consciousness. Just before you lose consciousness we will press lightly on your neck. This is to prevent stomach contents getting into your lungs.

When you are unconscious a tube is placed into your windpipe to allow a machine to breathe for you and to prevent stomach contents from entering your lungs. The anaesthetist will continue to give you the anaesthetic throughout the operation and ensure your continued safety.

When you wake up your throat may feel uncomfortable from the tube, and you may feel sore from the operation. You will also feel sleepy for a couple of hours. You will be taken to the recovery area where you will meet up with your baby and partner. You may be given a patient controlled analgesia (PCA) pump which allows you to inject a small amount of morphine painkiller into your drip at the press of a button when you feel sore.
Once the operation is underway you may feel pulling and pressure, but you should not feel pain. Women have described it like ‘someone doing the washing-up in my stomach’. The anaesthetist will assess you throughout the operation and can give you more pain relief if required. Whilst it is unusual, it is sometimes necessary to give you a general anaesthetic.

From the start it takes about 10 to 15 minutes before your baby is born. It may take longer if you are having a repeat caesarean section. Immediately afterwards, the obstetrician will pass your baby to the midwife, who will dry and quickly examine him/her in the cot on the far side of theatre. A paediatrician may also be present. After this, you and your partner are usually able to hold your baby.

Immediately after the birth, a drug called Syntocinon is put into your drip to help your uterus contract and deliver the placenta. An antibiotic is also routinely given to reduce the chance of wound infection. The obstetrician will take approximately another 30 minutes to complete the operation.

At the end of the operation a pain relieving suppository may be given. This gives good pain relief as the spinal/epidural wears off.

**When the operation is over**

You will be transferred onto your bed and then taken to the recovery room on delivery suite. Here we monitor your blood pressure for at least two hours to ensure all is well. Your baby and partner can usually be with you.

The spinal anaesthetic will gradually wear off over the next few hours and you often feel tingling in your legs. Within a couple of hours you will be able to move them again. When you feel ready to stand out of bed for the first time after the operation, you should make sure that there is someone to assist you.

**Spinals and epidurals do not cause chronic backache**

Backache is common after childbirth, especially if backache occurred before or during pregnancy. Epidurals and spinals do not make it more common.

**What happens when an elective Caesarean section is planned?**

**Pre-operative assessment**

Normally you will visit the hospital before you come in for your operation. The midwife will see you, take a blood sample for tests and explain what to expect. You will also be given some tablets to reduce the acid in your stomach and prevent sickness; you need to take one the night before the operation and one on the morning of the operation. It is important that you do not eat or drink for at least six hours before your operation. This is to ensure your stomach is empty and that if you were to vomit while under anaesthesia, you would not inhale food particles that could damage your lungs. In order to ensure your safety, your operation will be postponed if you do not follow these instructions.

You may be allowed home, to return to hospital on the morning of your operation.

**The anaesthetist’s visit**

The anaesthetist will come and see you, normally on the morning of your operation. He or she will review your medical history and any previous anaesthetics and may need to examine you. The anaesthetist will also discuss the anaesthetic choices with you and answer your questions.
Coming to theatre
You will normally walk to theatre with your birthing partner and midwife. Before coming to theatre you will need to put on a hospital gown and have a wrist and ankle band with your personal details. You will also be asked to put compression stockings on your legs, to reduce the chances of blood clots in your legs. Your partner will change into theatre clothes and wear a pink hat on coming to theatre.

There are a lot of people who work in the operating theatre including the anaesthetist and their assistant, obstetrician and their assistant, the scrub nurse, the theatre nurse, the midwife and in certain circumstances the neonatologist.

What will happen if you are having a regional anaesthetic?
Normally this is either done in the anaesthetic room or in the operating theatre. Your birthing partner is usually welcome to stay with you throughout. Before the anaesthetic is started you will be asked to confirm your name, date of birth and the operation you are going to have.

A cannula, ‘the drip’, will be placed in a vein in either your hand or wrist with some local anaesthetic. Equipment to monitor your blood pressure and heart rate will be attached at this stage.

You will be asked to either sit or lie on your side, curling your back. The anaesthetist will clean your back with sterilising solution. He or she will then find a suitable point between two of the bones in the middle of your back and inject local anaesthetic to numb the skin.

Then, for a spinal, a fine needle is passed through this numb area and into the spinal fluid. Sometimes you might feel a tingling going down one leg as the needle goes in, like a small electric shock.

You should mention this but it is important that you keep still. Next, local anaesthetic and a pain relieving drug are injected. It usually takes just a few minutes, but if it is difficult to place the needle, it may take slightly longer.

For an epidural or a combined spinal-epidural, a larger needle is needed to allow the epidural catheter to be threaded into the epidural space but otherwise you will be positioned the same as for a spinal.

You will know the spinal or epidural is working when your legs begin to feel tingly, heavy and numb. Numbness will spread gradually up your body and normally reaches the middle of your chest before the operation. The anaesthetist will check with either a cold spray or by testing touch sensation that you are ready for the operation. Sometimes it is necessary to change your position to make sure the anaesthetic is working well. Your blood pressure will be checked frequently.

You will be lying on the theatre table with the table either tilted to the left or with a wedge placed under your right hip. This is to prevent your baby pressing on the blood vessels in your abdomen which can make your blood pressure drop.

If you feel sick at any point you should mention this to the anaesthetist. It is often caused by a drop in your blood pressure and the anaesthetist will be able to give you appropriate treatment. When ready, you will be moved into the operating theatre.

The operation
A screen will separate you and your partner from the surgeons. The anaesthetist will stay with you throughout to ensure you are comfortable and safe. A midwife will insert a tube (urinary catheter) into your bladder to keep it empty during the operation. This is usually removed the next morning.