

## Patient information from the BMJ Group

# Childbirth, tear or cut

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## Childbirth, tear or cut

When giving birth, the skin and muscle between your vagina and anus can get torn. Or the doctor or midwife may need to make a cut (called an episiotomy) to help your baby out. It's not always possible to avoid a tear or cut. But there are things you and your doctor or midwife can do to reduce the risk.

We've brought together the best research about tears and cuts during childbirth and weighed up the evidence about how to avoid them. You can use our information to talk to your doctor or midwife and decide what is best for you.

## What is a tear/episiotomy?

When giving birth, the skin and muscle between your vagina and anus can get torn. Or your doctor or midwife may need to make a cut (called an episiotomy) to help your baby out.



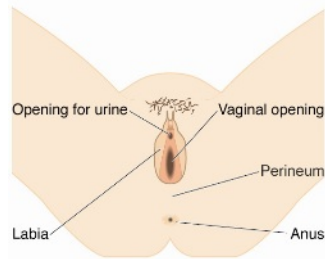
The area between your vagina and anus is called the **perineum**. During childbirth, sometimes the perineum stretches without tearing. But quite often it gets torn during the last stage of birth, usually when the baby's head or shoulders come out.

There are four types of tears: <sup>[1]</sup>

- A first-degree tear means that just the skin of your vagina or labia (the folds of skin around your vagina) is torn
- A second-degree tear means that the skin and muscle around your vagina or perineum are torn
- A third-degree tear means that the skin and muscle in your perineum and the muscle around your anus are torn

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- A fourth-degree tear is the same as a third-degree tear, but the area just inside your anus is torn as well.



Your perineum is the area between your vagina and your anus.

An **episiotomy** is a cut in your perineum that your doctor or midwife makes. The cut makes the opening of your vagina bigger so that it's easier for your baby's head to come out. Before making the cut your doctor or midwife will give you an injection (a **local anaesthetic** ) to make the area numb so that the cut doesn't hurt.

Doctors and midwives may make a cut if they want to deliver your baby quickly or if they want to use forceps (a pair of large tongs) to help your baby out. <sup>[1]</sup> But they will discuss this with you and ask your permission before they do this.

Doctors and midwives use cuts much less now than they did in the past. Most of them now think that both tears and cuts should be avoided whenever possible, because they can slow down your recovery. <sup>[2]</sup>

### Childbirth, tear or cut: why me?

You're more likely to have a cut if: <sup>[2]</sup> <sup>[3]</sup> <sup>[4]</sup> <sup>[5]</sup>

- It's your first baby
- Your baby is big
- Your baby is coming out bottom first (breech birth) or face up (instead of face down)
- You haven't been eating well (your nutrition is poor)
- You have unusually weak skin
- You are older
- Your doctor or midwife prefers to make a cut in your perineum rather than letting it tear

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- You live in a country or region where cuts are still offered to everyone, such as in eastern Europe.

### What problems can a tear/episiotomy cause?

Tears and cuts are wounds that occur during childbirth. Just like wounds anywhere else, they can hurt, bleed, or get infected.

For most women, the pain lasts less than two weeks, sometimes much less. But about 1 in 10 women have pain for more than three months.<sup>[6] [7] [8]</sup> You may find it hurts when you pass water (urinate), sit down, or have sex.

A few women have wind or loose bowel movements.<sup>[9] [10]</sup> This is unlikely to happen unless you have a bad tear that goes through the ring of muscle around your anus (a [third-degree or fourth-degree tear](#) ).

It can take longer to recover from childbirth if you have had a tear or a cut. If your problems drag on, they can make you miserable, stop you breastfeeding, and interfere with your social life or sex life.

### How common is a tear/episiotomy?

Most women who have a vaginal birth have either a tear or a cut. A few women have both.

We don't know exactly how many women have a tear in the perineum during childbirth. Doctors and midwives don't always record small tears. Experts think that at least one-third of women in the UK have a tear large enough to need stitches.<sup>[11] [12]</sup>

In one British study, more than 8 in 10 women had a tear or cut during a vaginal birth.<sup>[6]</sup> And about 7 in 10 needed stitches.

Bad tears, which go all the way from the vagina to the anus ( [third-degree or fourth-degree tear](#) ), happen less often. The chance of a bad tear is about 1 in 200.<sup>[10]</sup>

Your chance of having a cut (episiotomy) depends on where you live. In England, about 13 percent of women have a cut. In some eastern European countries, nearly all women have a cut during delivery.<sup>[11] [13] [14]</sup>

### How can I prevent a tear/episiotomy?

It's not always possible to avoid a tear or cut in your perineum (area between your vagina and anus) during childbirth. But there are things you and your doctor or midwife can do to reduce the risk.

### Key points about preventing a tear or cut during childbirth

- The best way to avoid a cut in your perineum is to have your baby in a hospital that trains doctors and midwives to do a cut only if it's really needed.
- Having a birth partner with you during labour can help to slightly reduce the chances of your baby being delivered by forceps (a pair of large tongs) or vacuum pump (ventouse). But the studies we looked at found this didn't reduce the chances of having stitches because of a tear or cut.
- An epidural anaesthetic (a painkilling injection given in your spine) is good for pain relief. But it increases your chances of needing stitches because of a tear or cut.
- If you need help to get the baby out, there is less chance of a tear with a vacuum pump than with forceps. With the vacuum pump, your baby may get a blood blister or slight bleeding inside his or her eyes. But your baby will soon recover without any lasting problems.
- There's no evidence from research that having a water birth reduces the risk of a tear or cut during childbirth.

Which treatments work best? We've looked at the research and given a rating for each treatment according to how well it works to help prevent tears and cuts.

### Treatment Group 1

#### Treatments for preventing a tear/episiotomy

##### Treatments that work

- [No cut \(episiotomy\) unless you really need it](#)
- [Applying a warm compress](#)

##### Treatments that are likely to work

- [Having a birth partner with you during labour](#)

##### Treatments that work, but whose harms may outweigh benefits

- [Being upright during the birth of your baby](#)
- [Vacuum pump \(ventouse\) and forceps delivery](#)

##### Treatments that need further study

- [Having a water birth](#)

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- [Different methods of delivering your baby](#)
- [Waiting before you push](#)
- [Different ways of breathing as you push](#)

### Treatments that are unlikely to work

- [A cut \(episiotomy\) down the middle of your perineum](#)

### Treatments that are likely to be ineffective or harmful

- [Epidurals](#)

### Other treatments

We haven't looked at the research on these treatments in the same detail we have for most of the treatments we cover. (To read more, see Our method.) But we've included some information because you may have heard of them or be interested in them.

- [Massaging the perineum](#)
- [Anaesthetic spray](#)

## What will happen to me?

Tears and cuts (episiotomies) are normally repaired with stitches. Most women recover quickly, but you may be sore for a few weeks while the wound heals. You may find sex uncomfortable or even painful for some time.

If during childbirth you've had a tear or your doctor or midwife has made a cut, you will probably need stitches.<sup>[15]</sup> Stitching closes the wound and puts your skin and muscle back together in the right place to help them heal quickly.<sup>[15]</sup>

Midwives and doctors are trained to stitch tears and cuts. They usually do the stitches as soon as possible after your baby is born. You'll probably stay in the delivery room. You'll have an injection ( [local anaesthetic](#) ) to make the area numb so the stitching won't hurt.

If you've had a bad tear (third degree or fourth degree), you may have to go to an operating theatre. (To read more about the types of tears, see [What is a tear/episiotomy?](#) ) In the operating theatre, you may be given a drug to make you sleep (a [general anaesthetic](#) ) or you may be given a painkilling injection just for the lower part of your body (an [epidural](#) ).

Most women heal within a few weeks of having stitches.<sup>[15]</sup> But in the meantime:<sup>[6]</sup> <sup>[8]</sup>

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- You may feel sore. More than one-quarter of women are sore for up to two weeks
- It can hurt when you have sex
- It may hurt when you pass water (urinate).

Every time they see you, your doctor, nurse, or health visitor will ask if you're in pain or discomfort.<sup>[16]</sup> If you're worried for any reason, they'll offer to check how well your cut or tear is healing. They may recommend an ice pack or cold gel pack, as these can help reduce pain.<sup>[16]</sup> <sup>[17]</sup> Taking paracetamol can also help.<sup>[18]</sup> Women who take paracetamol are less likely to need any other kind of pain medicine.<sup>[18]</sup>

If ice packs and paracetamol don't help, you may be prescribed ibuprofen or a similar drug.<sup>[16]</sup> <sup>[19]</sup> (Drugs like ibuprofen are called non-steroidal anti-inflammatory drugs or NSAIDs.) You may get these as pills or as suppositories (tablets you put into your anus).

Your nurse or health visitor may also give you advice about keeping your wound clean. You should change your sanitary pads often.<sup>[16]</sup> It's a good idea to wash your hands before and after changing your sanitary pad.

To help with any discomfort you also could try:

- Warm baths (these will also keep your wound clean while it heals)
- Loose, comfortable clothes.

There hasn't been any research on these simple treatments, but some women say they help.

Most women feel better quite soon, especially if they've had a small or medium-sized tear (first-degree or second-degree tear). But in one study, about 1 in 10 women were still sore after three months, and 1 in 6 said it still hurt to have sex.<sup>[20]</sup> In another study, about 1 in 10 women said it still hurt to have sex one year after a small or medium-sized tear.<sup>[21]</sup> <sup>[22]</sup>

If your problems drag on, they can make you miserable, stop you from breastfeeding, and interfere with your social life or sex life.

Bad tears can make you feel worse for longer. If the tear extends backwards into the ring of muscle around your anus, you may have trouble controlling wind or you may leak small amounts of loose bowel motion (liquid stool).<sup>[23]</sup> <sup>[10]</sup> If this happens, you may need further treatment. Your midwife, health visitor, or family doctor will be able to help.

### Treatments:

#### No cut (episiotomy) unless you really need it

In this section

Midwives and doctors used to do many more cuts than they do now, because they thought it was better for you and your baby. But now there's good research showing that it's better not to have a cut unless you really need one.

Nowadays, many hospitals train doctors and midwives to deliver babies without cuts whenever possible. If you don't have a cut, you're less likely to have stitches, an infection, or bleeding.

Good-quality research has shown that if cuts are done only when needed, the number of cuts and more serious tears in a hospital comes down. One summary of eight good-quality studies showed that when hospitals followed this rule the number of women who had a cut reduced from 73 in 100 to 28 in 100. <sup>[24]</sup>

It also found that women treated in hospitals where cuts are used only when needed were less likely to need stitches, to be in pain when they left hospital, and to have bad tears. <sup>[24]</sup>

But the research also found that having a cut only when it's needed slightly increases your chances of a small tear in the area forwards from your vagina. This kind of tear may involve the labia (the folds of skin around your vagina), clitoris, or urethra (the opening that you pass urine from). This type of tear is generally less serious than tears running backwards towards your anus.

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#### Having a birth partner with you during labour

In this section

There has been some good research on having a birth partner to support you during labour.

The research showed that with this kind of support, you have a slightly higher chance of giving birth without your doctor having to use forceps or a vacuum pump (ventouse) to help the baby out. <sup>[25]</sup> In general, if you don't need forceps or a vacuum pump, you're less likely to have a tear or need a cut.

In the research we found, the birth partners were all women. We didn't find any research that looked at male birth partners, so we can't say whether having a male partner with you would work in the same way.

The woman supporting you could be a midwife, a student midwife, a nurse, a trained birth attendant (sometimes called a doula), or your mum. It doesn't matter who the woman is. The important thing is that she stays with you until your baby is delivered.

## Childbirth, tear or cut

In the research we looked at: <sup>[25]</sup>

- 18 in 100 women without this support had a forceps or vacuum pump delivery
  - 16 in 100 women who had support from a birth partner had a forceps or vacuum pump delivery
  - But having a birth partner didn't seem to lower the chance of having a tear or needing a cut.
- 

### Being upright during the birth of your baby

In this section

You can have your baby in an upright position rather than lying down. You can squat, kneel, or use a birthing chair or special cushions. Researchers combined the results of 19 studies (a **systematic review**) and found that women who stay upright are less likely to need a cut. <sup>[26]</sup> But they have a slightly higher chance of a tear than women who lie down to have their baby.

The research found that:

- 43 in 100 women who lie down had a cut
- 36 in 100 women who stayed upright had a cut
- 16 in 100 who lie down had a medium-sized ([second-degree](#)) tear
- 18 in 100 women who stayed upright had a medium-sized tear.

The research on staying upright to have your baby is reasonably good. But we still don't know enough about the risks and benefits of different upright positions such as squatting or kneeling.

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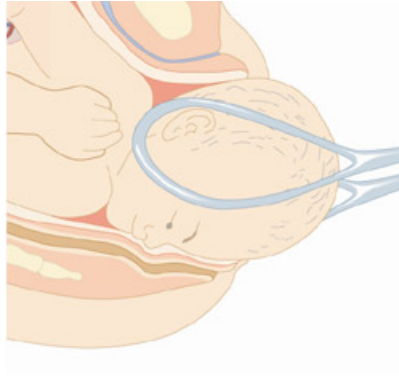
### Vacuum pump (ventouse) and forceps delivery

In this section

If you need extra help to deliver your baby, your doctor may use a vacuum pump (also called a **ventouse**). This is a cup attached to a small vacuum pump. The cup fits over your baby's head, and the vacuum pump makes a tight seal. In this way your doctor or midwife can pull your baby out while you push.



## Childbirth, tear or cut

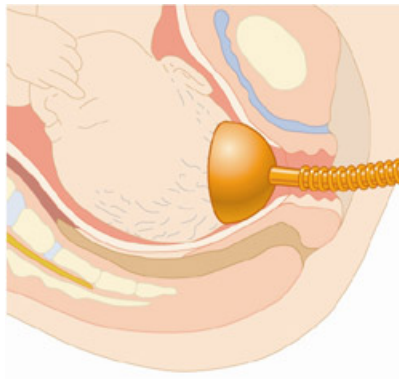


Babies can be helped out with forceps.

Your doctor may also use forceps to help your baby out. Forceps are like large pincers or tongs with curved ends that fit around your baby's head. The handles lock in position so there's no pressure on your baby's head. Your doctor or midwife will use the forceps to pull at the same time as you push.

There has been good research showing that if you need extra help to deliver your baby, the vacuum pump method is less likely to cause serious damage to the area between your vagina and your anus (your perineum) than forceps. We're not sure what is meant by 'serious damage' because the research didn't make this clear. <sup>[5]</sup>

The vacuum pump also hurts less, both during and after birth. And you are less likely to have problems controlling wind or leaking loose bowel movements (liquid stool) afterwards. <sup>[27]</sup>



A vacuum pump (ventouse) with a cup attached to the baby's head can help to pull the baby out.

The suction cup used with the pump can cause a blood blister on your baby's head. <sup>[5]</sup> This means that blood collects under the skin of your baby's head, and it can get quite large. But it will get better on its own. The vacuum pump can also cause slight bleeding at the back of your baby's eyes. The bleeding isn't serious and does not affect your baby's eyesight.

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However, the vacuum pump doesn't always work. For 1 in 10 women, it doesn't help get the baby out and doctors have to use another method. Forceps are slightly more likely to work the first time.

One summary of 10 good-quality studies ( [randomised controlled trials](#) ) found that: <sup>[5]</sup>

- 2 in 10 women who had a forceps delivery had damage to their perineum
- 1 in 10 women who had a vacuum pump delivery had damage to their perineum.

In the same studies, one-third of the babies delivered with forceps had bleeding in the back of their eyes compared with half of the babies delivered by the vacuum method.

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### Having a water birth

In this section

Some women choose to give birth in water. They might stay in the water for just the first stage of labour and come out when it's time to give birth. They might stay in the water to deliver the baby. Many people think being in water can help women relax and cope better with contractions. But there's no evidence from research studies that having a water birth helps reduce tears or the chances that you'll need an episiotomy. <sup>[28]</sup>

Many of the studies looking at whether water births reduce the risk of having a tear or a cut have not been very good quality. We need more research to say whether or not water births help reduce this risk.

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### Different methods of delivering your baby

In this section

There are two main methods midwives can use to help deliver a baby.

In the 'hands-on' method, the midwife puts one hand on your baby's head and uses gentle pressure to stop the baby coming out too quickly. The midwife also supports the area between your vagina and anus (called the perineum) with the other hand.

In the 'hands-off' method, the midwife simply waits with hands ready but doesn't touch you or your baby's head.

The research on whether either of these two methods reduces the risk of a tear or cut is mixed. But one very large study found that you are just as likely to need stitches or have more serious tears whichever method you have. <sup>[6]</sup>

This study also found that the hands-off method has other drawbacks. It may cause more pain later than the hands-on method. Ten days after delivery, women whose midwives used the hands-off method had worse pain around the perineum. The hands-off method

also slightly increases the chances that you'll need help delivering the placenta after giving birth. <sup>[6]</sup>

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### Waiting before you push

In this section

Once the opening to your womb (your cervix) is fully open (dilated), your baby's head should start moving down the birth passage towards the opening of your vagina. This is called the second stage of labour.

It is natural for a woman to get the feeling to push or bear down so that she can help her baby to come out. Your doctor or midwife may advise you to start to push as soon as your cervix is open. Or you may be encouraged to wait until your baby's head has had a chance to move further down the birth passage.

We don't know which method is better for preventing tears or cuts because there hasn't been enough research on this. We found only one good-quality study. In that study nearly half the women had a tear during delivery whether or not they waited before pushing. <sup>[29]</sup>

Most midwives now encourage women to wait until their body tells them to push.

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### Different ways of breathing as you push

In this section

In the past, midwives encouraged women to hold their breath and push long and hard to help their baby out. Nowadays, you'll probably be encouraged to breathe more naturally while you push.

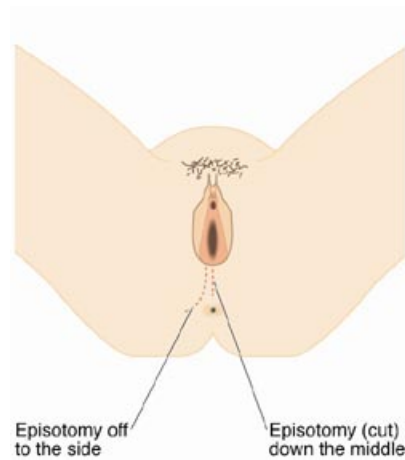
But we don't know which way of breathing is best for avoiding birth tears or a cut. We didn't find enough good-quality research. One study of 100 women found no difference between the two methods of breathing. <sup>[30]</sup>

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### A cut (episiotomy) down the middle of your perineum

In this section

## Childbirth, tear or cut



There are two main types of episiotomy.

A doctor or midwife can make a cut in one of two ways:

- They can cut directly backwards towards your anus, down the centre of the area between your vagina and your anus (your perineum)
- They can cut off to the side of your anus.

Some doctors think that a cut down the middle of your perineum hurts less, heals better, and interferes less with your sex life than a cut to the side of your anus.

But the three studies that we found didn't support this claim.<sup>[31]</sup> The studies were not good quality. But they suggested that a cut straight backwards is more likely to tear badly into the ring of muscle around your anus than a cut off to the side.<sup>[31] [32] [33]</sup> The muscle around your anus helps you to control your bowel movements. So tearing the muscle can mean you may have problems controlling wind or leaking loose bowel movements (liquid stool) afterwards.

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## Epidurals

In this section

Epidurals are injections of painkillers into the spine. They mean you won't feel any pain during labour. Epidurals are given by doctors called anaesthetists. A tube is put into your back (spine) so that more of the painkiller can be given if you need it.

Epidurals are great at relieving pain. But being numb in the second stage of labour can make it harder for you to push your baby out yourself. If you have an epidural you are more likely to need forceps or a vacuum pump (ventouse) to help your baby out than if you have other kinds of pain relief. Also, both forceps and the vacuum pump increase the chances of having a cut or a tear. But a vacuum pump is less likely to cause serious damage to your perineum than forceps.<sup>[5]</sup>

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We found one summary of the research (called a **systematic review**).<sup>[34]</sup> It showed that:

- 19 in 100 women who had an epidural needed help to get the baby out with forceps or a vacuum pump
- 14 in 100 women who had other kinds of pain relief needed help to get the baby out with forceps or a vacuum pump.

You can have an epidural that wears off before you go into the second stage of labour. This might not affect your chances of needing forceps or a vacuum pump.<sup>[35]</sup>

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### Applying a warm compress

In this section

Warm compresses are used during the second stage of labour, when the baby's head begins to stretch the skin around the perineum. The compress is usually prepared by soaking a sterile pad in warm water. It's then pressed against the perineum by the midwife or birth attendant. The compress is kept there until the baby is born, but can be reheated by rinsing in warm water as needed.

One summary of the research found that women who used warm compresses were less likely to have a bad tear (third or fourth degree).<sup>[36]</sup> It found that:

- 5 in 100 women who did not have a warm compress had a third- or fourth-degree tear
  - 2 in 100 women who had a warm compress had a third- or fourth-degree tear
  - Warm compresses didn't help women to avoid an episiotomy and stitches.
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### Massaging the perineum

In this section

Massaging your perineum means putting one or two fingers inside your vagina and applying pressure downwards and sideways in a sweeping motion. This aims to make the muscles in this area stretch more easily during childbirth.

The perineum can be massaged in the weeks leading up to birth and during the second stage of labour by a midwife or birth attendant.

If you are having your first baby, massaging regularly in the last four weeks of your pregnancy can help you avoid an episiotomy and stitches. In one summary of four high-quality studies (called **randomised controlled trials**), women who massaged at

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least once a week were less likely to need an episiotomy than women who didn't massage. <sup>[37]</sup>

If you've given birth before, massage during the last few weeks of pregnancy may not reduce your chances of an episiotomy. <sup>[37]</sup>

Massage of the perineum by a midwife during labour reduces the likelihood of having a bad tear (third or fourth degree). <sup>[36]</sup> We don't have any research to see if a combination of massage of the perineum in the weeks before childbirth and massage during labour is better than either approach on its own.

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## Anaesthetic spray

In this section

Some midwives have tried using a spray that contains a **local anaesthetic**. The aim is to help with pain and reduce the risk of a tear. Your midwife will spray your perineum just before you give birth.

One study looked at a spray that contained an anaesthetic called lidocaine. <sup>[38]</sup> It found that the spray didn't help reduce pain. We need more research before we can say whether or not this treatment can help prevent a tear.

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## Further informations:

### Glossary:

#### local anaesthetic

A local anaesthetic is a painkiller that's used to numb one part of your body. You usually get local anaesthetics as injections.

#### general anaesthetic

You may have a type of medicine called a general anaesthetic when you have surgery. It is given to make you unconscious so you don't feel pain when you have surgery.

#### epidural

Layers of tissue cover your brain and spinal cord. The epidural space is the space between two of these layers. Before surgery or a procedure, you may be given pain medicine in the epidural space of your spinal cord. You'll have no feeling in your body below where the medicine was injected.

#### NSAIDs

NSAID stands for nonsteroidal anti-inflammatory drug. NSAIDs help with pain, inflammation and fever. They are called 'nonsteroidal' because they don't contain any steroids. Aspirin and ibuprofen are both NSAIDs.

#### systematic reviews

A systematic review is a thorough look through published research on a particular topic. Only studies that have been carried out to a high standard are included. A systematic review may or may not include a meta-analysis, which is when the results from individual studies are put together.

#### randomised controlled trials

Randomised controlled trials are medical studies designed to test whether a treatment works. Patients are split into groups. One group is given the treatment being tested (for example, an antidepressant drug) while another group (called the comparison or control group) is given an alternative treatment. This could be a different type of drug or a dummy treatment (a placebo). Researchers then compare the effects of the different treatments.

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### Sources for the information on this leaflet:

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1. National Institute for Health and Care Excellence. Intrapartum care: care of healthy women and their babies during childbirth. March 2012. Clinical guideline 55. Available at <http://www.nice.org.uk/cg55> (accessed on 8 December 2013).
2. Eason E, Feldman P. Much ado about a little cut: is episiotomy worthwhile? *Obstetrics and Gynaecology*. 2000; 95: 616-618.
3. Sultan AH, Kamm MA, Bartram CI, et al. Perineal damage at delivery. *Contemporary Review of Obstetrics and Gynaecology*. 1994; 6: 18-24.
4. Renfrew MJ, Hannah W, Albers L, et al. Practices that minimize trauma to the genital tract in childbirth: a systematic review of the literature. *Birth*. 1998; 25: 143-160.
5. Johanson RB, Menon BK. Vacuum extraction versus forceps for assisted vaginal delivery (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester UK.
6. McCandlish R, Bowler U, van Asten H, et al. A randomised controlled trial of care of the perineum during second stage of normal labour. *British Journal of Obstetrics and Gynaecology*. 1998; 105: 1262-1272.
7. Sleep J, Grant A, Garcia J, et al. West Berkshire perineal management trial. *BMJ*. 1984; 298: 587-690.
8. Glazener CMA, Abdalla M, Stroud P, et al. Postnatal maternal morbidity: extent, causes, prevention and treatment. *British Journal of Obstetrics and Gynaecology*. 1995; 102: 286-287.
9. Sleep J, Grant A. Pelvic floor exercises in postnatal care. *British Journal of Midwifery*. 1987; 3: 158-164.
10. Sultan AH, Kamm MA, Hudson CN. Anal sphincter disruption during vaginal delivery. *New England Journal of Medicine*. 1993; 329: 1905-1911.
11. Graves EJ, Kozak LJ. National hospital discharge survey: annual summary, 1996. *Vital Health Statistics*. 1999; 13: 1-46.
12. Audit Commission. First class delivery: improving maternity services in England and Wales. London: Audit Commission Publications, 1997.
13. Wagner M. Pursuing the birth machine: the search for appropriate technology. In: Wagner M. Pursuing the birth machine: the search for appropriate technology. Ace Graphics, Camperdown, Australia; 1994.
14. DeFrances CJ, Hall MJ, Podgornik MN. National hospital discharge survey. Advance data from Vital and Health statistics no 359. National Center for Health Statistics, Hyattsville, MD; 2005.
15. Fleming EM, Hagen S, Niven C. Does perineal suturing make a difference? The SUNS trial. *British Journal of Obstetrics and Gynaecology*. 2003; 110: 684-689.
16. National Institute for Health and Care Excellence. Routine postnatal care of women and their babies. March 2012. Clinical guideline 37. Available at <http://www.nice.org.uk/CG37> (accessed on 8 December 2013).
17. East CE, Begg L, Henshall NE, et al. Local cooling for relieving pain from perineal trauma sustained during childbirth (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
18. Chou D, Abalos E, Gyte GM, et al. Paracetamol/acetaminophen (single administration) for perineal pain in the early postpartum period. In: *The Cochrane Library*. Wiley, Chichester, UK.
19. Peter EA, Janssen PA, Grange CS, et al. Ibuprofen versus acetaminophen with codeine for the relief of perineal pain after childbirth: a randomized controlled trial. *Canadian Medical Association Journal*. 2001; 165: 1203-1209.
20. Kettle C, Johanson RB. Absorbable synthetic versus catgut suture material for perineal repair (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
21. Mackrodt C, Gordon B, Fern E, et al. The Ipswich Childbirth study: 2. A randomised comparison of polyglactin 910 with chromic catgut for after birth perineal repair. *British Journal of Obstetrics and Gynaecology*. 1998; 105: 441-445.

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22. Grant A, Gordon B, Mackrodt C, et al. The Ipswich childbirth study: one year follow up of alternative methods used in perineal repair. *British Journal of Obstetrics and Gynaecology*. 2001; 108: 34-40.
23. Sleep J, Grant A. Pelvic floor exercises in postnatal care. *British Journal of Midwifery*. 1987; 3: 158-164.
24. Carroli G, Mignini L. Episiotomy for vaginal birth. In: *The Cochrane Library*. Wiley, Chichester, UK.
25. Hodnett ED, Gates S, Hofmeyr GJ, et al. Continuous support for women during childbirth (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
26. Gupta JK, Hofmeyr GJ. Position for women during second stage of labour (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
27. Fitzpatrick M, Behan M, O'Connell PR, et al. Randomised clinical trial to assess anal sphincter function following forceps or vacuum assisted vaginal delivery. *British Journal of Obstetrics and Gynaecology*. 2003; 110: 424-429.
28. Cluett ER, Burns E. Immersion in water in labour and birth. In: *The Cochrane Library*. Wiley, Chichester, UK.
29. Hansen SL, Clark SL, Foster JC. Active pushing versus passive fetal descent in the second stage of labor: a randomized controlled trial. *Obstetrics and Gynecology*. 2002; 99: 29-34.
30. Yildirim G, Beji NK, Yildirim Gulay, et al. Effects of pushing techniques in birth on mother and fetus: a randomized study. *Birth*. 2008; 35: 25-30.
31. Coats PM, Chan KK, Wilkins M, et al. A comparison between midline and mediolateral episiotomies. *British Journal of Obstetrics and Gynaecology*. 1989; 87: 408-412.
32. Shiono P, Klebanof MD, Carey JC. Midline episiotomies: more harm than good? *Obstetrics and Gynaecology*. 1990; 75: 756-770.
33. Klein MC, Gauthier MD, Robbins JM, et al. Relationship of episiotomy to perineal trauma and morbidity, sexual function, and pelvic floor relaxation. *American Journal of Obstetrics and Gynecology*. 1994; 17: 591-598.
34. Anim-Somuah M, Smyth R, Howell C. Epidural versus non-epidural or no analgesia in labour. In: *The Cochrane Library*. Chichester, UK: John Wiley and Sons Ltd.
35. Philipsen T, Jensen NH. Epidural block or parenteral pethidine as analgesic in labour; a randomized study concerning progress in labour and instrumental deliveries. *European Journal of Obstetrics, Gynecology and Reproductive Biology*. 1989; 30: 27-33.
36. Aasheim V, Nilsen AB, Lukasse M, et al. Perineal techniques during the second stage of labour for reducing perineal trauma (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
37. Beckmann MM, Garrett AJ. Antenatal perineal massage for preventing perineal trauma (Cochrane review). In: *The Cochrane Library*. Wiley, Chichester, UK.
38. Sanders J, Campbell R, Peters TJ. Effectiveness and acceptability of lidocaine spray in reducing perineal pain during spontaneous vaginal delivery: randomised controlled trial. *BMJ*. 2006; 333: 117.

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