

# Choices about clamping your baby's umbilical cord:

A decision aid for women having a vaginal birth



If you have any concerns about yourself or your baby/babies and want to talk to someone, please call:

- » your family doctor
- » 13 HEALTH telephone line (13 432 584)
- » Lifeline counselling service (131 114)
- » Stillbirth and Neonatal Death Support (SANDS) helpline (1800 228 655)
- » Pregnancy, Birth & Baby Helpline (1800 882 436)

The research and development of this decision aid was conducted by Aimée Dane, a health researcher at the Queensland Centre for Mothers & Babies. The Centre is an independent research centre based at The University of Queensland and funded by Queensland Health. The Centre does not stand to gain or lose anything by the choices you make after reading this decision aid. This decision aid has been developed to be consistent with International Patient Decision Aid Standards criteria for quality decision aids wherever possible.

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### What do the symbols mean?

The information in this decision aid has come from the best scientific studies available to us. Numbers in brackets [1] indicate a reference to a study that is listed at the back of the decision aid.

We use this symbol  when there is something you might like to ask your care provider about.

# What is this decision aid about?

This decision aid has been written to support women having an **actively managed third stage of labour** to know what to expect and to have a say in making decisions about clamping their baby's umbilical cord.

An actively managed third stage of labour is when a woman is given **Syntocinon®** to help her birth the placenta. Syntocinon® makes the uterus continue contracting after the baby is born. The alternative to active management is a **physiological third stage of labour**. A physiological third stage of labour is when a woman relies on her own production of **oxytocin** (a natural hormone produced during labour and birth) to birth her placenta. Oxytocin makes a woman's uterus continue contracting after her baby is born and helps the placenta separate from the uterus. In Queensland, if a woman does not choose to have a physiological third stage, she will have active management of the third stage. If you haven't chosen how you would like to birth your placenta or would like more information about choosing how to birth your placenta, you might like to read the decision aid 'Choosing how to birth your placenta: A decision aid for women having a vaginal birth.'

This decision aid does not apply to women having a physiological third stage of labour.

This decision aid provides information about two options:

- » 1. Choose early cord clamping
- » 2. Choose delayed cord clamping

This decision aid will answer the following questions:

- » What is the umbilical cord?
- » How does a baby start breathing?
- » What happens to the umbilical cord after my baby is born?
- » What are my options for the timing of cord clamping?
- » What happens if I choose early cord clamping?
- » What happens if I choose delayed cord clamping?
- » Why is there more than one option for cord clamping?
- » Will I always be able to choose?
- » How might I choose between delayed and early cord clamping?
- » What are the differences between delayed and early cord clamping?
- » How can I make the decision that's best for me?
- » How can I ask questions to get more information?

# What is the umbilical cord?

## What is the umbilical cord?

In the **uterus** (womb), the baby is connected to the **placenta** by the **umbilical cord**. The placenta is an organ that attaches to the wall of a pregnant woman's uterus and allows oxygen and nutrients (e.g. glucose, vitamins and minerals) to pass from mother to baby via the umbilical cord. The baby's blood circulates through the umbilical cord to and from the placenta for this purpose. The baby's blood system is separate from the mother's. This means that the blood in the placenta and umbilical cord is part of the baby's blood system.

## How does a baby start breathing?

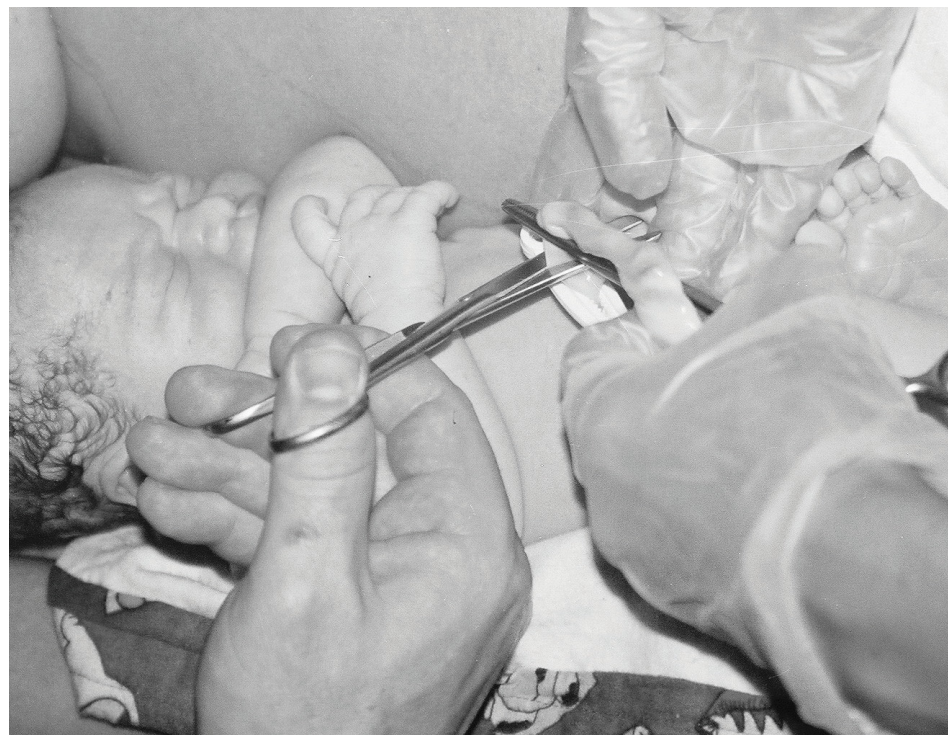
After birth, the baby's lungs expand with the first breaths causing larger volumes of blood to be directed to the baby's lungs to receive oxygen [1]. Red blood cells within the baby's bloodstream transport this oxygen around the baby's body, which stimulates the baby to breathe [2]. Until the baby starts breathing, oxygen is provided from the mother to the baby via the umbilical cord [2].

## What happens to the umbilical cord after my baby is born?

When your baby is born, he or she will still be attached to the placenta by the umbilical cord. After a woman births her baby, she also births her placenta. The time between the birth of the baby and the birth of the placenta differs for every woman and can vary between less than 30 minutes to over an hour [3].

Most women in Queensland will have an actively managed third stage of labour, which means that the baby's umbilical cord will be clamped (with a peg-like device) and cut before the birth of the placenta. If you are having an actively managed third stage of labour you can decide how soon after birth your baby's umbilical cord is clamped.

**Tip:** Choosing delayed or early cord clamping may impact on your choice about blood banking. You might like to ask your care provider more about this. 📌



# What are my options for the timing of cord clamping?



There are 2 options:

## Option 1

Early cord clamping

## Option 2

Delayed cord clamping

## Option 1

What happens if I choose early cord clamping?

Generally when a baby's umbilical cord is clamped within one minute of birth, this is called **early cord clamping**. If you choose early cord clamping, your baby's umbilical cord will usually be clamped within one minute of birth.

## Option 2

What happens if I choose delayed cord clamping?

If you choose **delayed cord clamping**, your baby's umbilical cord will be left unclamped for more than one minute or until pulsation has ceased. Different definitions of delayed cord clamping exist. In Australia, delayed cord clamping is commonly defined as cord clamping once cord pulsation has ceased, however delayed cord clamping can also be defined as cord clamping more than one minute after birth.

If the umbilical cord is left unclamped after birth, the blood in the placenta will travel back to the baby's body increasing the baby's blood volume. You will see the umbilical cord **pulsating** (beating like a heart beat). Eventually the pulsation in the umbilical cord will cease as blood stops travelling from the placenta to the baby's body. The time it takes for cord pulsation to cease is different for every baby. For many babies it takes around 3 minutes, if the baby is level with the entrance of the mother's vagina, however for some babies it can take between 1 and 10 minutes [4, 5].



## Why is there more than one option for cord clamping?

Early cord clamping used to be a routine part of active management of the third stage of labour and was thought to be an effective way of reducing blood loss for the woman. However, research has since found that this is not the case; delayed cord clamping does not increase a woman's blood loss [6]. It has also been shown that there are differences in other mother and baby outcomes relating to delayed and early cord clamping (see outcomes below) [6]. Women, therefore, have two options when it comes to clamping the umbilical cord.



In the next few pages we talk a lot about the chance of different things happening. If you would like help understanding what this means, please visit [www.havingababy.org.au/chance](http://www.havingababy.org.au/chance)

## Will I always be able to choose?

Different hospitals in Queensland may have different guidelines on the timing of cord clamping. You might like to ask your care provider about whether there are guidelines at your planned place of birth for cord clamping. You might also like to ask your care provider how he or she usually cares for the umbilical cord (e.g. timing of clamping and cutting).

If you choose to have delayed cord clamping, your care provider may suggest early cord clamping in the event of complications. You might like to discuss with your care provider the risks and benefits of early cord clamping in the event of a complication.

### How might I choose between delayed and early cord clamping?

A number of studies have looked at what happens when women have early or delayed cord clamping. We have included some of the results of these studies in the next few pages.

### Will the results of these studies apply to me?

The studies we've included are mostly studies of women and babies who were described as **low risk** (women and babies who were generally considered to be healthy). However, every woman's pregnancy is different so the possible outcomes of each option might be different for you. You might like to talk to your care provider who can give you extra information that is suited to your unique pregnancy.

Some of the studies we talk about are better quality than others. Whenever we talk about the results of a study, we give you some idea of the quality, using the following rating:

- A** **A** is given to studies that are high quality. **A** level studies tell us we can be very confident that choosing to do something causes something else to happen. **A**+ studies are the very highest quality of studies.
- B** **B** is given to studies that are medium quality. **B** level studies can tell us we can be moderately confident that choosing to do something causes something else to happen.
- C** **C** is given to studies that are low quality. **C** level studies can tell us when things tend to happen at the same time. But **C** level studies can't tell us that choosing to do something causes something else to happen.

# What are the differences between early and delayed cord clamping?

Tip: In pregnancy, a woman with a **haemoglobin** (a protein in red blood cells that carries oxygen) level below 110g/L is generally considered to be anaemic.[7]

Tip: In the first few months of life many changes occur in the newborn's blood. These include changes in haemoglobin (a protein in red blood cells that carries oxygen) and **bilirubin** (a substance created when red blood cells are naturally broken down) levels. For this reason the diagnosis of anaemia or **jaundice** (a condition where the baby's skin and whites of the eyes show a yellow colouring due to high levels of bilirubin) depends on many things including the age of the baby. You might like to ask your care provider more about this. Research suggests that haemoglobin levels between 150g/L and 233g/L are normal for a baby between birth and two days of age. [8] Haemoglobin levels above or below this are generally not considered normal.

The following studies have defined early cord clamping as clamping within one minute of birth and delayed cord clamping as clamping after one minute of birth.

Studies have found there is a difference between early and delayed cord clamping in:

	Early cord clamping (clamping within one minute of birth)	Delayed cord clamping (clamping after one minute of birth)
<b>Women's haemoglobin level at 24 to 72 hours after birth [6] A+</b>	Women's average haemoglobin was <b>108 g/L</b>	Women's average haemoglobin was <b>110 g/L</b>
<b>The chance of a baby having jaundice treated with phototherapy. Phototherapy is a treatment which uses light on the baby's bare skin to break down bilirubin. Phototherapy is used to treat jaundice. [6] A+</b>	<b>3</b> out of every <b>100</b> babies had jaundice treated with phototherapy	<b>5</b> out of every <b>100</b> babies had jaundice treated with phototherapy
<b>Babies' haemoglobin level at birth [6] A+</b>	Babies' average haemoglobin level was <b>180 g/L</b> at birth	Babies' average haemoglobin level was <b>202 g/L</b> at birth

# What are the differences between early and delayed cord clamping?

Studies have found there is a difference between early and delayed cord clamping in:  
continued...

Early cord clamping (clamping within one minute of birth)

Delayed cord clamping (clamping after one minute of birth)

Babies' haemoglobin level at two days [9] **A**

Babies' average haemoglobin level was **175 g/L** at two days

Babies' average haemoglobin level was **189 g/L** at two days

The chance of a baby having low ferritin (a protein in the blood that stores iron) (<20 µg/L) at 4 months [9] **A**

7 out of every 100 babies had low ferritin levels at 4 months

0 out of every 100 babies had low ferritin levels at 4 months

Babies' mean serum ferritin concentration at 4 months [9] **A**

Babies' mean serum ferritin concentration was **81 µg/L**

Babies' mean serum ferritin concentration was **117 µg/L**

Studies have found no difference between early and delayed cord clamping in:

The chance of a woman losing an excessive amount of blood (500ml or more) [6] **A+**

The chance of a woman losing an excessively high amount of blood (1000ml or more) [6] **A+**

Women's average blood loss [6] **A+**

The chance of a woman having a blood transfusion [6] **A+**

The chance of a woman having **manual removal of the placenta** (when a care provider uses his or her hand to gently remove the placenta from the uterus) [6] **A+**

The chance of the **third stage of labour** (from the birth of the baby to the birth of the placenta) lasting longer than 30 minutes [6] **A+**

# What are the differences between early and delayed cord clamping?

Studies have found no difference between early and delayed cord clamping in:  
continued...

The chance of the third stage of labour lasting longer than 60 minutes [6] **A+**

The chance of a woman having drugs that cause the uterus to contract to stop **haemorrhage** (excessive bleeding) [6] **A**

Babies' haemoglobin at four months [9] **A**

The chance of a baby having a **low APGAR score** (being slow to breathe and respond) at 5 minutes after birth [6] **A+**

The chance of a baby being admitted to the **Special Care Nursery** (a unit in the hospital for babies who need special medical care) or **Neonatal Intensive Care Unit** (a unit in the hospital for babies who need a high level of special medical care) [6, 9] **A+**

The chance of a baby being admitted to the **Neonatal Intensive Care Unit** for breathing problems [6] **A+**

The chance of a baby having breathing problems [6, 9] **A+**

The chance of a baby having **clinical jaundice** (jaundice diagnosed based on clinical judgement and/or a blood test) [6] **A+**

The chance of a baby having anaemia [9] **A**

The chance of breastfeeding at 1 hour [9] **A**

The chance of breastfeeding at 6 hours [9] **A**

The chance of exclusively breastfeeding at discharge [6] **A+**

The chance of breastfeeding at 4 months [9] **A**

Babies' mean serum ferritin concentration at 2 days [9] **A**

# How can I make the decision that's best for me?

At the Queensland Centre for Mothers & Babies, we understand that the right decision for you may not be the right decision for others.

When making decisions about their maternity care, some women prefer to get the information and make decisions by themselves or with their families. Other women like to make decisions as a team with their care providers and some women like their care providers to make decisions for them. This decision is yours to make. You might change your mind about previous decisions if you get more information, if your circumstances change or your preferences change. For all decisions before, during and after your birth, you are entitled to know your different options, know what happens if you choose different options and choose the option that is best for you.

Following these steps might help you to make the decisions that are best for you:

## Think about the reasons for choosing each option

When making a decision about which option is best for you, it can be helpful to think about the reasons that you personally might choose each option. We have included a table in this decision aid where you can write down both the reasons you might and might not choose each option. You might have come up with your own ideas or have found information somewhere else.

## Think about which reasons matter to you the most

Some reasons might matter more to you than others and you might want to give these reasons extra thought when making a decision. There is room in this decision aid for you to mark how much each reason matters to you in a box. Doing this can also help you talk to other people about what matters to you. You might like to use a simple star rating like this to mark how important each reason is:

★ Matters to me a little     ★★ Matters to me quite a bit     ★★★ Matters to me a lot

## Think about whether you're leaning towards one option or the other

Once you've thought about the reasons for choosing each option and how much each reason matters to you, you might feel that one option is better for you. Or, you might still be unsure and want to think about it some more or ask questions. There is a place to mark what you feel about your options within this decision aid. You can also show this table to your care provider to help you make decisions as a team.

# How can I make the decision that's best for me?

Reasons I might choose early cord clamping

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Reasons I might choose delayed cord clamping

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At the moment, I am leaning towards...

.....  .....  .....  .....  .....  .....  .....  .....

Early cord clamping

I'm unsure

Delayed cord clamping



## Where did this information come from?

The information in this decision aid has come from the best scientific studies available to us. A list of these studies is included below.

- [1] Pairman, S., et al., *Midwifery: Preparation for Practice*. 2nd ed. 2010, New South Wales, Australia: Elsevier
- [2] Mercer, J.S. and R.L. Skovgaard, Neonatal Transitional Physiology: A New Paradigm. *The Journal of Perinatal & Neonatal Nursing*, 2002. 15(4): p. 56-75.
- [3] National Collaborating Centre for Women's and Children's Health, *Intrapartum care: Care of healthy women and their babies during childbirth*. September 2007.
- [4] Lind, J., *Physiological Adaptation to the Placental Transfusion: The Eleventh Blackader Lecture*. *Canadian Medical Association Journal*, 1965. 93(21): p. 1091-1100.
- [5] Yao, A.C., M. Moinian, and J. Lind, Distribution of blood between infant and placenta after birth. *Lancet*, 1969. 626(2): p. 871-873.
- [6] McDonald, S.J. and P. Middleton (2008) Effect of timing of umbilical cord clamping of term infants on maternal and neonatal outcomes. *Cochrane Database of Systematic Reviews Issue 2*. Art. No.: CD004074, DOI: 10.1002/14651858.CD004074.pub2.
- [7] World Health Organization, *Iron Deficiency Anaemia Assessment, Prevention, and Control: A guide for programme managers*. 2001: Geneva.
- [8] Bizzarro, M.J., E. Colson, and R.A. Ehrenkranz, Differential diagnosis and management of anemia in the newborn. *Pediatric Clinics of North America*, 2004. 51(4): p. 1087-1107.
- [9] Andersson, O., et al., Effect of delayed versus early umbilical cord clamping on neonatal outcomes and iron status at 4 months: a randomised controlled trial. *British Medical Journal*, 2011. 343:d7157



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## Organisations

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Caboolture Hospital

Central Maternity & Neonatal Clinical Network

Ethnic Communities Council of Queensland

Friends of the Birth Centre Queensland Association Inc

General Practice Queensland

Griffith University

Herston Multimedia Unit

Mater Mothers' Hospital

Maternity Coalition

Maternity Unit, Primary, Community and Extended Care Branch, Queensland Health

Midwives Information & Resource Service (MIDIRS), UK

Midwifery Advisory Committee, Office of the Chief Nursing Officer, Queensland Health

Midwifery Advisor, Queensland Health

Northern Queensland Maternity & Neonatal Clinical Network

Preventative Health, Queensland Health

Queensland Maternal and Perinatal Quality Council

Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)

Redland Hospital

Sexual Health and HIV Service

Southern Queensland Maternity & Neonatal Clinical Network

Statewide Maternity & Neonatal Clinical Network

Stillbirth and Neonatal Death Support (SANDS) Network

The University of Queensland

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## Other decision aids

- Choosing your model of care
- Choices about first semester ultrasound scans
- Choosing how to birth your baby: for women without a previous caesarean section
- Choosing how to birth your baby: for women with a previous caesarean section
- Choosing how you labour will start
- Monitoring your baby during labour
- Choices about epidural
- Choices about episiotomy
- Birthing your placenta
- Using a bath or pool during first stage labour

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