Monitoring Baby in Labour

Intermittent auscultation and continuous CTG

Labour is a physically demanding time for your baby (as well as for you), and for this reason, midwives and doctors like to listen in to baby's heart beat during established labour to know how baby is responding to your contractions. There are two ways of doing this – intermittent auscultation and continuous CTG monitoring.

This guide explains what each method involves, and what the benefits and limitations of each are.

Why is it important to listen in to baby's heartbeat during established labour?

Labour is a physically demanding time for baby – during a contraction, blood flow through the placenta is temporarily reduced, meaning your baby has to adapt to these changes.

Whilst your baby is normally well equipped to cope with the stresses of labour, listening to your baby's heartbeat in labour can make sure that if your baby does start to get tired, this is identified early and a proper plan of care can be put in place that keeps them safe.

Listening to your baby's heartrate in labour is an indirect way of assessing how well oxygenated they are – if your baby starts to become less well oxygenated as a result of labour, this will become apparent in their heartrate pattern.

Midwives and doctors are trained to know the difference between a baby which is well oxygenated and coping well in labour, and a baby which is starting to become less well oxygenated and more compromised in labour, by listening to or looking at a print out of their heartrate.

What are the two options for listening in to baby's heartbeat?

Intermittent auscultation means that your midwife listens to your baby's heartbeat at regular intervals using a handheld doppler. This is recommended for women who are considered low risk and whose labour is progressing normally.

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Continuous CTG (cardiotocograph) monitoring means your baby's heartbeat and your contractions are monitored continuously using belts around your abdomen.

Continuous monitoring is recommended when there are factors that mean your baby may benefit from closer observation during labour, for example:

- Induction of labour
- Meconium stained waters
- Maternal fever or infection concerns
- High blood pressure or pre-eclampsia
- Diabetes in pregnancy
- Concerns about baby's growth or wellbeing
- Twin or multiple pregnancies
- Previous caesarean section
- If abnormalities are heard during intermittent monitoring

Sometimes, women start their labour with intermittent auscultation, and are then advised to switch to continuous CTG monitoring. This may happen if, for example

- Your baby does a poo before they are born and your waters become 'meconium stained'
- Your baby's heartrate is abnormal on intermittent auscultation
- You develop a raised temperature in labour
- You have fresh red bleeding in labour
- Your labour is progressing slowly and needs augmenting

Some women prefer to have continuous CTG monitoring, and maternal request is also a valid reason for starting CTG monitoring.

... top tip
If you are offered continuous CTG monitoring, don't be afraid to ask why. Your midwife or doctor should explain why it is being recommended and what it means for your care.

Intermittent auscultation – what to expect

A handheld doppler is a small device which is able to pick up baby's heartbeat from inside the womb. The midwife places a small probe covered in gel against your tummy in order to listen in to (or auscultate) baby's heartbeat.

- In established labour, the midwife will listen to baby's heartrate every 15 minutes for 60 seconds immediately after a contraction.

- In the second stage of labour, the midwife will listen to baby's heartrate every 5 minutes (or after every contraction) for 60 seconds.

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The midwife is listening to a number of things when they are intermittently auscultating your baby's heartrate:

- How many times your baby's heart is beating in one minute
- Are there any accelerations or decelerations heard in baby's heartbeat
- How baby is responding to the contractions

If the midwife does hear anything concerning when listening in intermittently to baby's heartrate with the doppler, they may start listening in more often or for longer, and they may recommend that you move to continuous CTG monitoring to get a clearer picture of what baby's heartrate is doing.

Continuous CTG monitoring – what to expect

When you have continuous CTG monitoring, two sensors are placed on your tummy using elastic belts that go around your abdomen. One sensor monitors your baby's heartrate, the other monitors your contractions.

The sensors are connected to a CTG machine which produces a continuous recording (or 'trace') of baby's heartrate and your contractions.

The midwife will continually review the trace to assess how your baby is responding to labour. In addition, another clinician will also review the baby's trace regularly (depending on your hospital protocol). This is called a 'fresh eyes' and provides a regular second professional opinion.

Some hospitals have sensors that are connected to the CTG machine using wires, while other hospitals have sensors that are connected to the CTG machine using Bluetooth ('wireless monitoring').

Wireless monitoring is less restrictive and means that women can be more mobile in labour. Sometimes it is possible for women to use the birthing pool with wireless continuous CTG monitoring.

... midwife's insight
Being on continuous CTG monitoring does not mean that there is something wrong with your baby – it is often recommended because you have a particular risk factor that means baby may not cope so well with labour contractions. The purpose of continuous CTG monitoring is to identify changes in baby's heartrate pattern early to assess how well they are coping in labour.

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What are the risks and benefits of IA and continuous CTG monitoring

Benefits of IA

- Allows for greater freedom of movement and mobility than continuous CTG monitoring
- Creates a less medicalised environment
- Encourages active labour positions

Risks of IA

- Provides only ‘snapshots’ of baby’s heartbeat rather than continuous monitoring which may be less appropriate for women considered more ‘high risk’ in labour
- Women may be advised to move to continuous CTG monitoring if concerns arise in labour

Benefits of continuous CTG

- Provides continuous information about baby’s wellbeing
- Allows for early identification of babies who may be struggling in labour
- Particularly useful in higher risk labours

Risks of continuous CTG

- Can restrict movement somewhat depending on the type of monitor
- Can make labour feel more medicalised
- The use of continuous CTG monitoring may lead to further intervention including an increased risk of instrumental delivery and caesarean birth

What can continuous CTG monitoring tell you that intermittent auscultation can’t tell you

Both intermittent auscultation and continuous CTG monitoring allows the midwife or doctor to assess baby's heartrate in a number of important ways.

Continuous CTG provides additional information because it records your baby's heart rate continuously rather than intermittently. In particular, it allows the midwife or doctor to assess variability, and gives a much more detailed picture of the timing, duration and pattern of decelerations.

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Is there an increased risk of intervention with CTG monitoring

Continuous CTG monitoring has been shown to reduce the risk of seizures in newborn babies, but it has not been shown to reduce the risk of cerebral palsy.

It is also true that CTG monitoring is associated with an increased chance of interventions during labour, including instrumental birth and caesarean birth. This is partly because CTG monitoring can identify changes in your baby's heart rate that are difficult to interpret and do not necessarily mean that your baby is becoming compromised.

The benefits and drawbacks of continuous CTG monitoring should always be weighed against the individual circumstances of your pregnancy and labour.

A note from the labour ward:

How to monitor your baby in labour is a big and complex topic, and I can't cover every nuance in this guide. If you'd like to explore the subject in more detail, I recommend having a look at the following resources:

https://www.nice.org.uk/guidance/ng229

https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.cd005122.pub5/full

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About the author

I'm Perdy, founder of Perdy Maternity Care and a practising NHS midwife. I have supported hundreds of women and families through pregnancy, birth and the postnatal period. I created these guides to provide the evidence-based information and reassurance that I know many parents wish they had more time to receive during routine appointments.

My aim is to provide evidence-based education that helps you feel informed, confident and prepared for whatever your birth may bring.

If you found this guide helpful, and you're looking for personalised antenatal education, birth preparation or postnatal support, I'd love to help:

- One-to-one antenatal sessions
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