



Fetal Heart Rate Monitoring

Patient Information Leaflet

The Rotunda Hospital has designed this leaflet to give you information about fetal heart rate monitoring. We hope it will help you to choose the appropriate type of monitoring for your baby in pregnancy and during labour. This information is intended to complement a full discussion with the midwives and/or doctors caring for you.

What is fetal heart rate monitoring?

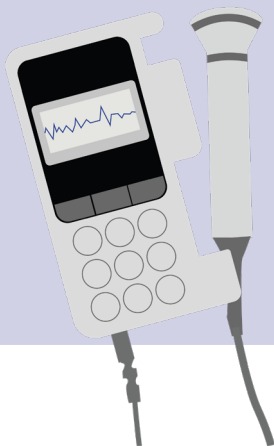
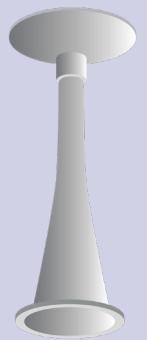
The term “fetal heart rate monitoring” refers to the methods used to assess your baby’s heart rate during your pregnancy and during labour. Monitoring your baby’s heart rate is one of the ways we can be reassured that your baby is doing well. It is important to remember that fetal heart rate monitoring is a screening tool and is used to identify concerns about your baby’s wellbeing during pregnancy and labour. It does not predict birth outcomes but gives us a snapshot of how your baby is at that moment.

What methods of monitoring may be offered to you?

There are two main options for fetal monitoring, depending on your circumstances:

- **Fetal heart auscultation:** Your midwife or doctor will use a Pinard or a doppler either for one-off assessments of your baby’s heart rate (for example, at antenatal appointments) or at regular intervals during labour (called intermittent auscultation or IA). During fetal heart auscultation, your baby’s heart rate will be listened to for at least 60 seconds and your pulse will be taken at the same time.

- **Pinard stethoscope:** A trumpet shaped instrument made of wood, metal or plastic which is used to listen to your baby’s heartbeat through your abdomen. You will not be able to hear the heart rate in this case.

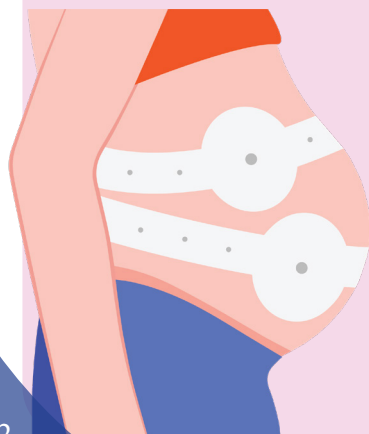
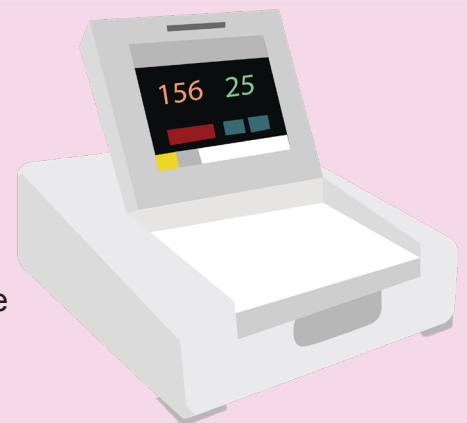


- **Handheld doppler:** A pocket-sized, battery-operated handset that sends out high-frequency ultrasound waves. These are translated into the sound of your baby’s heartbeat which both you and your midwife or doctor will be able to hear. A doppler is waterproof and can be used if you are labouring in the pool.

- Continuous monitoring by **cardiotocography (CTG)**: A monitor used to record your baby’s heart rate by ultrasound, either for short periods of time in the antenatal period or continuously during labour. Two probes are placed on your abdomen, one to monitor the baby’s heartbeat and one to monitor the frequency of contractions, along with your heart rate. The baby’s heart rate

and your contractions are recorded on graph paper (called a “trace”). CTG is commonly recommended if you present with a concern

to the Emergency and Assessment Unit later in pregnancy. CTG is also often used continuously during labour where risk factors are present. Being monitored by CTG often means you will be connected by wires to the CTG monitor, but wireless CTG monitors are available in our Delivery Suite which means you will be able to walk around.



Fetal heart rate monitoring during pregnancy

Your baby's heart rate will be checked by your GP, midwife or obstetrician when you attend routine antenatal appointments. You will be routinely offered IA at your antenatal appointments from 24 weeks.

If you attend the Emergency and Assessment Unit (EAU) over a certain gestation with a concern about your baby, either IA or CTG may be used depending on the circumstances.

If you have been admitted for any reason during your pregnancy for a concern related to your baby's wellbeing, you may also be offered a CTG on a daily basis.



PLEASE NOTE: We strongly advise against buying any equipment or apps to listen to your baby's heartbeat at home. These pieces of medical equipment should only be used by a trained professional.

Fetal heart rate monitoring during labour

Fetal heart rate monitoring is very important during labour. We expect to see changes in your baby's heart rate, for example, when they are asleep, moving around or towards the end of labour. It is important for us to be able to detect these changes, or any signs that your baby is not coping with labour. Monitoring your baby in the appropriate way and interpreting the heart rate allows for timely intervention.

Which method of monitoring is best in labour?

Your baby's heartbeat may be monitored either at regular intervals (intermittent auscultation) or continuously by cardiotocography (CTG). All women undergo a risk assessment on admission to the Rotunda Hospital and are offered a form of fetal heart rate monitoring for labour. Care will be individualised to you and your baby's needs. ***The method of monitoring recommended will depend on a range of factors which will be discussed with you and our recommendation could change over the course of your labour.***

It is important to recognise that no one form of fetal heart rate monitoring is superior. Intermittent auscultation may be the appropriate choice for monitoring your baby at the start of your labour, but if there is concern about your baby's heart rate, we may recommend switching to continuous monitoring via CTG. This might continue until your baby is born, or if no further problems are detected your midwife or doctor may recommend that we revert to IA.

Intermittent auscultation (IA) in labour

If you are healthy, have no previous medical issues and have had an uncomplicated pregnancy, you will be offered intermittent auscultation by Pinard or handheld doppler during labour. The Rotunda Hospital's guidelines recommend that your midwife listens to your baby's heart rate for at least 60 seconds every 15 minutes in established labour (first stage) and then every five minutes when you are pushing (second stage). We will listen to your baby's heartbeat immediately after a contraction as this is the best time to detect how your baby is coping with labour.

IA: Benefits

Allows you to move freely around the delivery room, with short periods where your midwife will "listen in".

When used appropriately, intermittent auscultation can reduce your risk of intervention.

IA: Risks

Very sudden changes in your baby's heart rate may not be detected immediately; however, your midwife will listen in directly after a contraction which can help us identify if your baby is not coping with labour. This is in line with Rotunda Hospital and national guidelines.

Cardiotocography (CTG) in labour

If you have a complex medical history or a complicated pregnancy, your midwife or doctors might recommend continuous monitoring by CTG.

CTG is also recommended if any persistent problems are detected during your labour.

Some examples of when CTG is recommended include:

- Induction of labour or use of oxytocin
- If you choose an epidural
- If you or your baby are showing signs of developing an infection (for example raised maternal temperature or a high fetal heart rate)
- Previous caesarean birth
- If you have a known complication, for example, high blood pressure, diabetes or obstetric cholestasis
- Vaginal bleeding
- If your baby is small for gestational age (SGA or IUGR)
- If your baby is premature (<37 weeks of pregnancy)
- You are a multiple pregnancy, twins or triplets
- There is too little or too much fluid around the baby, as seen on scan
- If your baby passes meconium (opens bowels) before they are born



CTG: Benefits

You will be able to hear and see a recording of your baby's heartbeat, which you might find reassuring.

CTG allows your midwife and/or doctors to monitor your baby continuously and respond quickly to events in labour.

CTG: Risks

Your mobility will be limited as you will be attached to a monitor, although you should still be able to stand, sit down, use a birthing ball and walk around within a small area depending on the length of the leads attached to the monitor. The Rotunda Hospital has some wireless monitors (telemetry) which can promote mobility within proximity to the CTG monitor.

At times, it can be hard to interpret a CTG. The trace doesn't always reflect accurately how well the baby is coping with labour and this can sometimes lead to extra intervention.

Continuous CTG is associated with increased rates of caesarean sections and instrumental births (vacuum or forceps), both of which carry some risks to mothers and babies.

What happens when there is difficulty recording your baby's heart rate?

Occasionally your midwife or doctor may recommend the use of a probe called a fetal scalp electrode (FSE) for a better recording of your baby's heart rate. This happens when we are having difficulty listening to your baby's heartbeat through your abdomen. This can be due to your baby's position, a poor quality signal or your position. During a vaginal examination, the electrode is attached to your baby's scalp and connected to the monitor. This allows us to monitor your baby's heartbeat directly. An FSE will only be offered during labour, if your waters have broken and if no contraindications are detected.

If the CTG identifies irregular changes to your baby's heartbeat we will review the trace closely and might recommend one or all of the following interventions:

- Changing your position
- Fluids – either orally or through a drip
- Fetal blood sampling (FBS)

If these actions are recommended these will be discussed with you at the time and your consent will be sought.

**For further information,
please use the following resources:**



Rotunda Labour & Birth Key Resources

rotunda.ie/pregnancy-journey/labour-and-birth/

Rotunda Monitoring Your Baby's Wellbeing



rotunda.ie/pregnancy-journey/labour-and-birth/#babywellbeing



HSE Labour Resources

www2.hse.ie/pregnancy-birth/labour/



HSE Patient Information Leaflet “Monitoring your baby’s heart rate when you are in labour”

www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/intrapartum-fetal-heart-rate-monitoring-patient-information-leaflet.pdf

NICE Intrapartum Care Guideline (2022)



www.nice.org.uk/guidance/ng235/resources/intrapartum-care-pdf-66143897812933

This patient information leaflet was written following a review of the following resources:

- Our Lady of Lourdes Maternity Unit “Monitoring you baby’s heartbeat in labour”
- Royal Berkshire NHS Foundation Trust, “Monitoring your baby’s heartbeat in labour”
- St George’s University Hospitals NHS Foundation Trust, “Fetal Monitoring”
- Norfolk and Suffolk NHS Foundation Trust, “Fetal heart rate monitoring in labour – your choices”



NICE National Institute for Health and Care Excellence

