

Plain language summary

Fetal Heart Rate Monitoring

Who is this summary for?

This summary is for pregnant women and their partners.

What is this summary about?

The National Women and Infants Health Programme (NWIHP) has developed a number of clinical guidelines to help healthcare professionals deliver evidence-informed care. One of these guidelines is around monitoring the baby's heart rate during pregnancy and labour. This plain language summary provides an overview of the National Guideline on Fetal Heart Rate Monitoring.

What is fetal heart rate monitoring?

Fetal heart rate monitoring checks the baby's well-being at that moment by listening to and recording the baby's heartbeat. It can help healthcare professionals detect changes in the baby's heart rate but cannot predict birth outcomes. This type of monitoring is done at different stages throughout pregnancy, labour, and birth.

When should fetal heart rate monitoring be discussed?

The options for monitoring the baby's heart rate during labour and birth should be discussed with the woman before labour, ideally starting at 32 weeks of pregnancy and as part of antenatal education. The discussion should include the possible reasons for offering monitoring of a baby's heart rate and evidence to support the recommendation of monitoring based on the pregnancy risk profile, as well as the limitations of monitoring.

How is a baby's heart rate monitored?

A baby's heart rate can be monitored using a Pinard (a hand held device where one end rests on the woman's abdomen and the user listens in from the other side), Doppler (a hand held battery operated device, one end rests on the woman's abdomen and then echoes the sound of the fetal heartbeat) or cardiotocograph (CTG) (an electronic device with two probes placed on the woman's abdomen, one records the baby's heart rate and the other records muscle activity of the uterus (womb) during a contraction).

A Pinard or Doppler is used to listen to the baby's heartbeat during pregnancy. This option can be used by Midwives and Doctors from 23+0 weeks' of pregnancy onwards.

During labour, a Pinard or Doppler can be used if there are no reasons to monitor the baby's heart rate using CTG. This is also called intermittent auscultation (IA) or 'listening in'.

<https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/>

<https://www.rcpi.ie/Faculties-Institutes/Institute-of-Obstetricians-and-Gynaecologists/National-Clinical-Guidelines-in-Obstetrics-and-Gynaecology>

A CTG monitors the changes in the baby's heart rate and provides a visual and/or print out tracing of the baby's heart rate and the woman's contractions in labour.

When is a baby's heart rate monitored?

Antenatal CTG is not recommended as part of routine antenatal care. Women with at-risk pregnancies are offered an increased level of fetal surveillance and this may include antenatal CTG monitoring as part of their individualised care plan.

Some examples of at-risk pregnancies include:

- Women reporting a change or reduction to their baby's normal pattern of movements (reduced fetal movements)
- When the water around the baby breaks before 37 weeks of pregnancy, but labour doesn't start
- Threatened early labour before 37 weeks of pregnancy
- Where there are concerns about the baby's growth
- If the labour is started artificially (induction of labour)

The decision to start antenatal CTG monitoring should be made together with the woman after discussing its risks, benefits, and efficacy.

CTG monitoring during labour is recommended for women with the following risk factors.

Maternal (woman)

- High blood pressure during pregnancy that needs medication
- Waters breaking for more than 24 hours
- Any bleeding from the vagina
- Suspected infection
- Pre-existing diabetes and diabetes during pregnancy
- Previous caesarean section
- No antenatal care or missing more than two antenatal appointments

Fetal (baby)

- Baby is not in the head-down position, including while a decision is made about the mode of birth
- Baby is small for their gestational age (estimated fetal weight below the 10th percentile)
- Pregnancy is more than 42 weeks at the start of established labour
- No amniotic fluid, too little amniotic fluid, or too much amniotic fluid, as confirmed by a scan
- Labour before 37 weeks of pregnancy

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When should intermittent auscultation (listening for short periods of time with time in between each episode) move to CTG monitoring?

Monitoring the baby's heart rate during labour requires ongoing risk assessment.

If new risks or problems arise, switching from intermittent auscultation (IA) to continuous CTG monitoring is recommended, for example, if the baby passes meconium (newborn stool), or the woman requests an epidural anaesthetic, or has vaginal bleeding during labour.

CTG monitoring may be recommended in circumstances where the midwife has concerns about the fetal heart rate, such as a possible change in the fetal heart rate.

If the CTG shows normal results after 20 minutes and there are no other risks, the woman can return to IA if she wishes.

What steps should be taken if there are concerns about the baby's heart rate during labour?

The following steps may address possible causes of concern.

- Changing the woman's position (e.g., to lie on her left side) to improve the blood flow to the uterus and reduce cord compression
- If the woman has low blood pressure, giving intravenous (IV) fluids, changing position, and calling an anaesthetic doctor if this might be related to epidural anaesthesia
- If contractions are too frequent, there are some actions and medications to reduce or stop the frequency of contractions

It is not routinely recommended to give the woman intravenous fluids through a drip in the arm (unless she has low blood pressure) or oxygen to address concerns about the baby's heart rate.

If the fetal heart rate concerns continue, the midwife will escalate concerns to the multidisciplinary team.

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Are there other tests available to check the baby's wellbeing during labour?

Healthcare professionals can use the following tests to help guide the care they provide in labour.

Fetal Scalp Stimulation (FSS) is where the baby's scalp is stimulated vaginally in an attempt to cause an increase in the baby's heart rate. This healthy response suggests that the baby is receiving enough oxygen.

Fetal Blood Sampling (FBS) is a more difficult procedure to carry out than FSS and is not offered in all maternity services in Ireland. It involves taking a small blood sample from the baby's scalp and testing the acid-base level in the blood.

When deciding whether to use FSS or FBS, healthcare professionals weigh up the reasons for testing, what resources are available, how long the test takes, and what the woman wants.

The results of any tests should be looked at together with the full clinical picture – such as how labour is progressing and any risk factors—to make sure both the mother and baby stay as safe as possible.

Where to go for more information?

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