Fetal monitoring in labour
(Intrapartum fetal monitoring)

During your labour your baby’s heart beat will be monitored. This is known as fetal monitoring in labour or intrapartum fetal surveillance.

What is fetal monitoring in labour?
Fetal monitoring is measuring your baby’s heart beat during labour. There are two ways this may be done:

• Intermittent auscultation also known as intermittent monitoring – listening at regular intervals for a short time with a Doppler (microphone) or Pinard stethoscope (made for hearing the baby’s heart beat)
• Continuous electronic fetal monitoring (CEFM) also known as continuous monitoring – using a cardiotocograph (CTG) machine

Why does your baby need to be monitored in labour?
During contractions less blood reaches the placenta. This is normal and most babies cope well with this. If your baby is not coping well the pattern of his/her heart beat may change. This change can be detected during monitoring.

It is recommended that all babies are monitored during labour to ensure they are coping without any problems.

How will your baby be monitored?
Generally if you are well and healthy and have had no complications while you are pregnant (that is you are considered to be low risk) your baby can be safely monitored by intermittent auscultation.

There are a number of known baby and maternal risk factors where continuous electronic monitoring is recommended. These may be present in your pregnancy, or develop during labour.

Your midwife or doctor will discuss any risk factors you may have with you.

What is intermittent monitoring?
Most commonly a small hand held microphone called a Doppler is used. However, this may also be done with a Pinnard stethoscope which is a trumpet shaped device. Using a Doppler means you are also able to hear your baby’s heartbeat. Occasionally a CTG machine may be used if the midwife or doctor is having difficulty hearing your baby’s heartbeat. This will be put on briefly and then removed if all is well with your baby.

The midwife or doctor will place their hand on your abdomen (tummy) to feel for a contraction. They will then listen to (monitor) your baby’s heartbeat for a full minute at the end of the contraction and will also check your pulse at the same time to ensure it is your baby’s heart that is being heard. They will do this more often as your labour progresses.

Benefits
• you can move around as you wish during labour
• you can labour in the bath or birth pool if you choose (if this is available in your birthing facility)
• you are less likely to have any interventions such as a caesarean section provided your pregnancy and labour are low risk and straightforward

Risks or disadvantages
• very sudden changes in your baby’s heartbeat will not be detected. These are very rare in healthy babies.
What is continuous monitoring?

This is done with a CTG (cardiotocography) machine. Two discs (transducers) are placed on your abdomen and held in place by elastic belts. These are not usually uncomfortable. One disc picks up your contractions and the other your baby’s heartbeat. The CTG machine produces a graph of both of these. The graph is usually referred to as ‘the trace’. This type of monitoring is called ‘external fetal monitoring’.

Sometimes it is necessary to attach the monitor directly onto your baby via a special lead. This is called an ‘internal fetal electrode’ or ‘fetal scalp electrode’ or ‘fetal scalp monitoring’. The lead is placed on your baby during an internal vaginal examination.

Some birth suites have machines that can pick up the heartbeat and contractions by telemetry which is a wireless system. Some places may have wireless systems that can be used while you are in the shower, bath or birth pool. Your midwife or doctor will discuss the different monitoring options that are available to your birthing facility.

If you are having more than one baby often the first baby will be monitored by the internal electrode and the other(s) by the external transducer(s) or disc(s).

Benefits
• your baby’s heart rate pattern can be monitored over a longer continuous period of time
• if your monitoring is normal, you can be disconnected from the machine for short periods of time (e.g. to go to the toilet or having a shower)

Risks or disadvantages
• if the telemetry (the wireless) system is not available your freedom to move about may be restricted
• if continuous fetal monitoring is used unnecessarily it may increase the chance of interventions in labour (such as having a caesarean section)

How do the midwives and doctors interpret the trace?

The CTG machine produces a continuous record which the midwives and doctors will review on a regular basis. They will be looking at:

• your baby’s heart rate also referred to as ‘fetal heart rate’
• any time your baby’s heart rate speeds up (and for how long) also known as ‘accelerations’
• any time your baby’s heart rate slows down (and for how long) known as ‘decelerations’
• very small changes to your baby’s heart rate (which are normal) also called ‘beat to beat variation’ or ‘variability’

If there are any concerns about how your baby is, these will be discussed with you. Your doctor may recommend that a blood sample is taken from your baby. This is called ‘fetal blood sampling’ or ‘FBS’. They may also recommend that your baby’s birth be hastened, for example by caesarean section.

What is fetal blood sampling?

This is where a very small sample of blood is taken from your baby’s scalp during an internal vaginal examination. The result is obtained quickly and provides more information about how well your baby is coping with the labour. Sometimes the result may indicate that your baby needs to be born as soon as possible and an emergency caesarean section may be recommended to you. Fetal blood sampling is not available in all facilities.

Figure 2. Woman having continuous monitoring by CTG