Obstetrical Interventions during Childbirth

These interventions are used during labor and birth to screen for, diagnose, prevent, or treat problems for mother or baby. Some interventions are more routinely used than others. Use the information below, along with the Key Questions for Making an Informed Decision on page 10 of *Pregnancy, Childbirth, and the Newborn*, to aid your discussion with your caregiver when planning the birth, or when a problem arises.

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<tr>
<th>Intervention/how it is done</th>
<th>Benefits and/or purposes</th>
<th>Risks and/or disadvantages</th>
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<tr>
<td>Intravenous (IV) fluids</td>
<td>Maintains hydration (adequate fluid intake) when you’re not allowed to drink liquids or are unable to keep them down. Allows immediate access to a vein if medication or a blood transfusion is necessary. Needed for administration of Pitocin (to augment or induce labor), some pain medications, antibiotics, and other medications. IV fluids given before regional analgesia to counteract potential side effects. Provides some calories for energy, if fluid contains dextrose (sugar).</td>
<td>Restricts easy movement during labor; walking is more difficult because you need to push IV pole along with you. Fluids may leak into tissues near puncture site, causing tenderness and swelling. If excessive fluid is given, fluid overload may disturb blood chemistry and cause excessive swelling in early postpartum. If you receive large amounts of fluid containing dextrose (sugar), your baby may become hypoglycemic at birth and require special care.</td>
<td>Unnecessary if you’re drinking sufficient fluids, receiving no medication, and labor is progressing normally. Some caregivers and institutions routinely allow only IV fluids (nothing by mouth) from admission until after delivery. Such policies are not supported by scientific evidence. If liquids are prohibited and feelings of dry mouth occur, ice chips can help. With a high volume of IV fluids, the baby may be born with excessive tissue fluid. These babies are heavier at birth and then may lose a higher percentage of their birth weight than other babies. If infant weight loss in the first few days exceeds 10 percent, the mother’s IV fluid intake in labor should be considered.</td>
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<td>Heparin lock or saline flush</td>
<td>This maintains an open line in case medications are needed quickly later in labor. Is preferable to many women who don’t want IV fluids. Less restrictive than an IV line and fluids.</td>
<td>Slightly restrictive of your movements. You may be disturbed at the sight of the apparatus in your arm.</td>
<td>Helpful for a woman who has a high chance of needing medications quickly.</td>
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<td>Artificial rupture of membranes (AROM)</td>
<td>May be used with the intention to induce (start) or augment (speed up) labor.</td>
<td>The amniotic membrane helps to protect the baby from infection. When it is ruptured, this protection is lost. Your caregiver may then set a time limit on labor to reduce the chance that baby will be exposed to infection. Amniotic fluid cushions the baby during contractions and also makes it easier for him to change positions. These advantages are lost after AROM.</td>
<td>Research does not support the idea that amniotomy will speed labor, and it may increase cesarean section. It is not recommended as part of routine care.</td>
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*Pregnancy, Childbirth, and the Newborn*
### Fetal Heart Rate Monitoring: Options are listed in order from least interventional/least accurate (stethoscope) to most interventional/most accurate (internal EFM)

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| **Fetal heart rate monitoring**  
A. Listening (auscultation) with fetal stethoscope | Enables assessment of FHR.  
Noninvasive.  
Allows you to be mobile and active.  
Encourages frequent attention from your caregiver or nurse.  
Helps determine fetal position when determining location of heart tones. | Heart tones may be difficult to hear.  
May require you to lie supine (flat) in bed in order to hear heart tones.  
Does not provide continuous printed or electronic record of FHR and contraction pattern.  
Pressure of stethoscope against your abdomen may be uncomfortable.  
Assessing relationship between FHR and contraction is more difficult than with EFM (see below). | Rarely used.  
Because FHR is more difficult to hear with this device than with ultrasonic devices, the caregiver must place stethoscope very close to the baby’s heart. This has the added advantage of assisting the caregiver in determining the baby’s position (OP or OA). |
| **Fetal heart rate monitoring**  
B. Listening (auscultation) with a hand-held ultrasonic fetal stethoscope (often called a Doppler).  
This device is placed on your abdomen and audibly and/or visually transmits the fetal heart tones. The caregiver counts as described in part A. above. | Enables assessment of FHR.  
Is most comfortable method of FHR monitoring.  
Encourages frequent attention from your caregiver or nurse.  
Allows you to be mobile and active.  
Is more sensitive in picking up fetal heart tones than fetal stethoscope.  
Volume can be increased so others in room may hear the heartbeat. | Does not provide a continuous record of FHR and contraction pattern, and requires staff to record FHR manually.  
Assessing relationship between FHR and contraction is more difficult than with EFM (see below). | Waterproof Doppler devices are available if you plan to labor in water. |
| **Fetal heart rate monitoring**  
C. External electronic fetal monitor (EFM)  
An ultrasound device, held in place by a belt around your abdomen, sends and receives sound waves to detect FHR. Another belt holds a pressure-sensitive device in place over your fundus to detect uterine contractions.  
These devices are attached by wires to a monitor that displays and permanently records the FHR and uterine contractions. They are also connected to screens in the nurses’ station.  
External EFM can be intermittent (10–20 minutes every hour) or continuous. | Enables assessment of how contractions affect FHR.  
Enables assessment of fetal well-being when complications arise or when Pitocin or other medical interventions are used.  
Provides information needed to determine whether more sophisticated monitoring is warranted.  
Provides information on frequency of uterine contractions.  
Provides a continuous electronic and/or printed record of FHR and contraction pattern.  
Does not require artificial rupture of membranes. | Information from external EFM is not sufficient by itself to make many clinical decisions, which require further assessments.  
Needs frequent readjustment when you or your baby moves.  
May be uncomfortable and restrict movement (immobility may slow labor).  
Does not provide accurate measurement of strength of contractions.  
May tempt your birth partner to watch monitor instead of you.  
Interpretation of FHR patterns varies among practitioners; fetal distress is sometimes diagnosed when not actually present.  
Leads to higher rates of instrumental and cesarean deliveries than when intermittent auscultation is used. | Scientific trials comparing intermittent auscultation with continuous EFM have found them comparable in terms of neonatal outcomes.  
Though auscultation is a safe method, most nurses and caregivers prefer to read EFM tracings, as they have not been trained to use a fetal stethoscope or Doppler in labor.  
EFM can’t distinguish your heart rate from fetal heart tones; what looks like a sudden drop in FHR may actually be due to the fetus moving and your heart rate being picked up. |
| **Fetal heart rate monitoring**  
D. Telemetry unit for external EFM.  
The recording devices contain tiny wireless remote transmitters, along with the FHR and contraction detectors. The transmitter sends data to monitors located in your labor room and in the nurses’ station. | Same as with external electronic fetal monitoring described above, but you are not connected by wires to a machine.  
Allows you more movement, including walking around matenity area, using bathtubs (without jets), and showers. | Same as with external electronic fetal monitoring, except that it allows mobility. | Most hospitals have only a few telemetry units. If your hospital usually uses continuous EFM and you want to be able to walk, request a telemetry unit in your birth plan, on the phone when you call before going to the hospital, or as soon as you arrive. |
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<td><strong>Fetal heart rate monitoring</strong></td>
<td>Enables accurate assessment of how contractions affect FHR. Enables assessment of fetal well-being when complications arise during induction or augmentation with Pitocin or when other interventions are used. Provides information on intensity and frequency of uterine contractions. Provides information needed to determine if further medical assistance or testing is warranted. Is more accurate than external monitor. Is less restrictive of your movements in bed than external monitor.</td>
<td>Requires rupture of membranes. Restricts free movement out of bed, including walking (unless telemetry used). May cause infection of uterus and/or infection of baby’s scalp. Interpretation of FHR patterns varies among practitioners; fetal distress is sometimes diagnosed when not actually present. Pressure catheter may need frequent adjustment with your change of position.</td>
<td>Sometimes, a combination of internal and external electronic monitoring is used (for example, the internal fetal scalp electrode and the external uterine pressure device). As with external EFM, studies comparing periodic auscultation and internal EFM found no differences in newborn outcome, except for labors in which Pitocin was used.² The sounds of the internal FHR are more distinct (sounding like “clap, clap, clap”) than those with the external EFM (which has a shushing sound). Because of the additional risks, internal EFM is only used when external EFM is not giving adequate information.</td>
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<td><strong>Fetal scalp stimulation test</strong></td>
<td>Allows accurate assessment of fetal well-being if EFM indicates problems. Sometimes prevents an unnecessary cesarean birth if test indicates fetal well-being. Noninvasive to the fetus. Rapid and reliable test that can be repeated whenever desired. No cost.</td>
<td>Requires a vaginal exam. Can only inform on fetus’s present condition; not how long the fetus will be able to handle the stress.</td>
<td>This simple test helps to distinguish fetal “stress” (in which the fetus is able to handle the temporary shortage of oxygen caused by contractions) from fetal “distress” (in which the fetus no longer has the ability to compensate).</td>
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<td><strong>Fetal oxygen saturation testing</strong></td>
<td>Had initially shown promise as a means for assessing fetal well-being. Useful during epidural/spinal analgesia/anesthesia and during a cesarean to ensure that your oxygen levels allow adequate oxygen transfer to the fetus. Noninvasive, easily applied.</td>
<td>Expensive, difficult to administer, ineffective at presenting unnecessary cesareans.</td>
<td>Rarely used.</td>
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<td><strong>Maternal pulse oximetry</strong></td>
<td>Enables caregiver to continually assess whether you have adequate oxygen. Useful during epidural/spinal analgesia/anesthesia and during a cesarean to ensure that your oxygen levels allow adequate oxygen transfer to the fetus. Noninvasive, easily applied.</td>
<td>None, except for minor inconvenience of the device squeezing a finger.</td>
<td>If oxygen level is too low, you’re asked to breathe more deeply or given oxygen by mask. Pulse oximetry is also used with newborn babies whose APGAR scores are low or who have breathing problems. The sensor is attached to the baby’s skin, usually on the foot.</td>
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<td><strong>Amnioinfusion</strong></td>
<td>Reduces fetal distress. Allows labor to continue when a cesarean might otherwise be the only solution. If umbilical cord is being compressed during contractions and causing fetal distress, the added fluid cushions the cord and protects against fetal distress. Requires that you remain in bed. Requires that your membranes be ruptured. Possible risk of fetal hypothermia (low temperature), or intrauterine infection.</td>
<td></td>
<td>When cord compression occurs or meconium is present, amnioinfusion reduces incidence of FHR decelerations, cesareans for fetal distress, and low Apgar scores. Fluid may be injected repeatedly or continuously. A simple, low-cost, though invasive way to improve newborn outcomes.</td>
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Intervention/how it is done | Benefits and/or purposes | Risks and/or disadvantages | Comments
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**Episiotomy**
A surgical incision is made into your perineum just before the birth of your baby’s head. | Enlarges birth canal. May speed delivery of baby by a few minutes, an advantage with fetal distress. Provides a straight incision, which is easier to repair than some large tears (however, it also increases the chance of a large tear). Provides more space for application of forceps. Reduces compression from vaginal tissues on head of a premature baby. | Causes discomfort in early postpartum period. Sometimes performed routinely when not necessary. May disturb early mother-infant interaction as episiotomy is repaired. Site of incision may become infected or bleed. May cause pain with intercourse for several months after birth. Serious tears of the perineum are more likely with episiotomy than without. | Should be done only when medically indicated; should not be done routinely. Some of the disadvantages of episiotomy also occur with a spontaneous tear. However, when an episiotomy is not done, the likelihood of an intact perineum (no tear) ranges from 25 to 60 percent, depending on the skill of the caregiver. And, even when a spontaneous tear occurs, it’s usually smaller or no larger than the average episiotomy. Healing from a tear is more rapid and postpartum pain is less than with most episiotomies.

**Vacuum extractor**
Used in the second stage, a silicone caplike device is applied to the baby’s head. It is then pumped to create suction. During contractions, the caregiver pulls on a handle attached to the cap to assist the baby’s descent. | Helps descent of baby’s head. Can sometimes be applied when fetus is at a higher station than is safe for use of forceps. Requires less space in vagina than forceps, so less need for episiotomy and anesthesia. | May cause bruising or swelling of baby’s soft scalp tissues or of your perineum. Not helpful with rotation. | If three attempts with the vacuum extractor fail, a cesarean is done.
You may be asked to push as hard as you can while the vacuum is being used to enhance the chances of a vaginal delivery.
The US Food and Drug Administration (FDA) has published guidelines for its safe use.
The amount of suction is controlled so that the cap releases if the caregiver pulls too hard. This protects the baby’s head from serious injury.

**Forceps**
Two spoonlike instruments or tongs are inserted, one at a time, into your vagina and applied to each side of your baby’s head. The doctor turns and/or pulls on the handles to aid rotation and descent. Used only in second stage when the baby is at a low station. | Helps rotate baby’s head from an asynclitic to an anterior position. Helps bring baby down when anesthesia is used or bearing-down efforts are insufficient. May be used to facilitate birth of head with a breech vaginal birth. Speeds delivery if fetus is in trouble. | Usually requires an episiotomy. May bruise soft tissues of baby’s head or face. Usually requires regional or local anesthesia. May bruise or tear vaginal tissues. | The decision between forceps and vacuum extraction is usually made by the doctor and is based on his or her training and experience.
Forceps are used much less in North America than the vacuum extractor. Fewer doctors are trained in their use.
If forceps attempts are unsuccessful, a cesarean is done to ensure the health of the baby.

Endnotes
4. See note 3 above.