

Lucile Packard  
Children's Hospital  
at Stanford

# Pain Relief Options for Labor

Providing You with Quality Care, Information  
and Support



# What can I expect during my labor and delivery?

As a patient in the Labor and Delivery Suite at Lucile Packard Children's Hospital at Stanford you can expect:

- To receive information about pain relief options
- Treatment by concerned staff committed to pain management
- A timely response to your pain
- State-of-the-art pain management tailored to you and your labor
- Dedicated pain relief specialists (anesthesiologists) available on a 24-hour basis
- Pain management aimed at making labor as safe, pleasant and natural as possible

## WHAT WILL LABOR BE LIKE?

The birth of your child is one of the most memorable events in your life. Each woman's labor is unique, and each woman experiences labor discomfort differently. Many factors influence how you feel – the size and position of your baby, how well labor progresses, how tired you feel, and your level of pain tolerance. Although some women cope with labor using only breathing and relaxation techniques learned in childbirth classes, many choose to combine these techniques with pain medications or an epidural.

## WHAT OPTIONS ARE AVAILABLE FOR LABOR AND DELIVERY PAIN RELIEF?

Your preferences and medical condition are important in selecting pain relief. Your anesthesiologist, obstetrician and nurse will help you choose the best technique for you, your labor and your baby. Your choices may include the following:

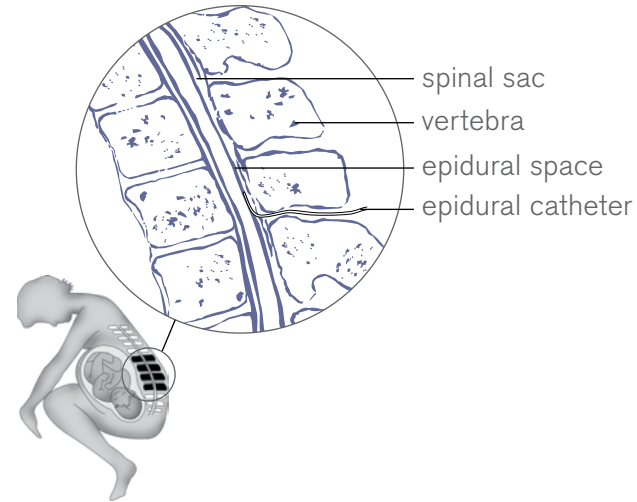
- **Intravenous (IV) or Intramuscular (IM) Medication:** Your obstetrician may prescribe narcotics (morphine-like pain medicines) such as fentanyl or Demerol (meperidine). These are injected into a vein or muscle to help dull the pain. However, they do not usually eliminate it. Because they can make you and your baby sleepy, we limit dosage and use these drugs mainly in early labor.
- **Local Anesthesia:** Local anesthetics (drugs like Novocaine) cause decreased sensation and numbness. Your obstetrician can inject them into the vaginal and perineal area to decrease pain during delivery. However, this technique does not lessen the pain of contractions.

- **Regional Blocks:** Epidural and spinal blocks reduce pain during labor while allowing you to remain awake and able to participate in your delivery. Regional blocks are administered in the lower part of your back by a specialist physician called an anesthesiologist. Local anesthetics and other medications are used in these techniques to reduce or “block” pain in the lower part of the body. They can provide analgesia (decrease in painful sensations) for labor and delivery, or anesthesia (no sensation) for cesarean section or other operative procedures. Sometimes a combined spinal-epidural is used to relieve labor pain or to provide cesarean section anesthesia.



# Regional Analgesia For Labor

Regional blocks have become popular because they are the most effective techniques for providing pain relief during childbirth. At what stage of labor you receive an epidural depends upon the progress of labor, your level of discomfort, and other individual factors. If you request epidural analgesia, your obstetrician and the anesthesiologist will evaluate you and your baby. Epidural and spinal blocks may not be good choices in some situations such as when the mother is bleeding or her blood clotting is abnormal.



## HOW ARE REGIONAL BLOCKS PERFORMED?

An **epidural block** is performed in the lower part of the back known as the lumbar area. You will be asked to sit up or lie on your side, relax and curve your back out to widen the spaces between the vertebral bones. Most of the procedure is done between contractions to minimize the time you need to keep still during contractions. First, we cleanse the skin with antiseptic solution, then inject some local anesthetic solution to numb a small area of the back. Although this stings for a few seconds, you should feel only pressure during the rest of the procedure. A special needle is placed in the epidural space (a long, sleeve-like space inside the bony vertebral column but outside the spinal fluid sac). A tiny flexible tube called an epidural catheter is threaded through the needle, then the needle is removed and the catheter is taped in place (see illustration). A brief tingling sensation sometimes occurs in the back or legs if the catheter brushes against a nerve on insertion, but this usually lasts only seconds. Medication given through the epidural catheter surrounds the nerves passing through the epidural space, keeping you comfortable until delivery without additional procedures.

A **combined spinal-epidural block (CSE)** is similar to the epidural, but produces pain relief much faster and may be recommended if labor is progressing rapidly. Because it may cause less numbness than the epidural, some refer to it as a “walking epidural.” The procedure is similar to that described for the epidural, but a small amount of medication is injected into the spinal fluid before the epidural catheter is inserted. Pain management after the initial placement is the same as for the epidural.

A **spinal block** is occasionally used when labor is progressing rapidly and delivery is expected in the immediate future. Pain relief occurs rapidly and lasts about an hour and a half. The procedure is similar to the epidural or CSE, but is quicker to perform. A very small, specially designed spinal needle is used that results in a very low risk of a headache. Because a catheter is not placed, this technique cannot be prolonged without additional procedures.

## HOW FAST WILL THE BLOCK WORK?

After an epidural, pain relief occurs gradually over 10 to 20 minutes with contractions feeling progressively shorter and less intense. A combined spinal-epidural or spinal block often provides good pain relief within five minutes.

## WILL I REMAIN COMFORTABLE UNTIL DELIVERY?

To maintain comfort throughout labor and delivery, a very low dose of medication is continually infused through the catheter until delivery has occurred. We routinely use low concentrations of medications (“ultra-light epidurals”) to avoid excessive numbness and to allow you to push effectively during delivery. As labor progresses and becomes more intense, additional doses (“boluses”) of medication may be required. These doses may be self-administered if you are using a patient-controlled epidural analgesia (PCEA) pump, or they may be given by the anesthesiologist. Epidural blocks provide considerable pain relief, although you may feel pressure with contractions and be aware of examinations by the obstetrician or nurse. Realistic expectations for the pain (on a scale of 0 to 10 where 0 is no pain and 10 is most pain you can imagine) are 0 to 2 during the first stage of labor and 0 to 5 during the second (pushing) stage of labor. We will assess your pain and degree of pain relief at regular intervals throughout labor and recommend appropriate treatment. Occasionally, we decrease the epidural infusion rate during delivery if you feel too numb and cannot push well. Rarely, we may need to adjust or replace the epidural catheter if you do not obtain adequate pain relief despite additional doses.

## HOW MOBILE WILL I BE AFTER A REGIONAL BLOCK?

Newer techniques and medications in regional blocks allow you to be comfortable with much less numbness than in the past. However, your legs may temporarily feel

warm, heavy or weak. Despite this, muscle power usually remains normal so that you can move around in bed or sit in a chair without difficulty. Many women can also walk to the bathroom with our usual low-dose epidural or combined techniques. Whether you can walk with a regional block will depend on your sensation and muscle strength and the condition of you and your baby. A hospital caregiver will evaluate you before you attempt walking and must accompany you at all times.

## WILL A REGIONAL BLOCK SLOW LABOR AND AFFECT DELIVERY?

Every woman wants a speedy labor and a normal delivery. However, many factors influence the progress of labor and the need for assisted vaginal delivery or cesarean section. In some women, contractions may briefly decrease in frequency after an epidural, whereas in others labor progresses more rapidly once pain is relieved and the mother is relaxed and stress-free. Recent studies using up-to-date regional block techniques similar to those we use have found no increased risk of cesarean section with epidural as compared with other forms of pain relief (e.g., narcotics).

## WHAT ARE THE RISKS OF A REGIONAL BLOCK?

As with any medical treatment, side effects or complications occasionally occur. We will monitor you and your baby carefully and take precautions to prevent problems. Because blood pressure can decrease following a block, we place an IV and administer fluids

beforehand. It is important to lie on your side as much as possible during labor to help your blood pressure (and blood flow to the baby) remain at its normal level. Although uncommon, a headache occasionally (about 1 in 100 times) follows a regional block. Holding still during the epidural needle placement decreases the likelihood of a headache. If the discomfort does not resolve with rest or pain medicines, additional treatment can be given.

Very rarely, the medication in regional blocks can cause the chest wall to feel numb and make it feel hard to breathe. This sensation usually disappears by itself, but may be helped by breathing oxygen. Occasionally, the epidural needle or catheter enters an epidural vein, because these become swollen during pregnancy like varicose veins and hemorrhoids. If this occurs, the epidural needle or catheter is repositioned to ensure that the medication is placed where it can provide effective pain relief. Serious adverse reactions to drugs entering a vein or the spinal fluid are very rare because such low doses of medications are used. When larger doses of medications are given, such as for cesarean section anesthesia, we usually give a small “test dose” first to make sure the medication is in the right place.

Shivering, nausea and vomiting can occur during labor, with or without a regional block. If these symptoms are troublesome, medication is available to help treat them. Backache is common during pregnancy and often continues after your baby is born. There is good evidence that regional blocks do not cause long-term backache, although there may be slight local tenderness for a few days.

Life-threatening or serious complications (such as unusual drug reactions or nerve damage due to bleeding or infection near the spinal cord) are extremely rare with regional blocks given for labor pain relief. You should feel free to discuss any concerns with your anesthesiologist

## HOW WILL A REGIONAL BLOCK AFFECT MY BABY?

There is considerable evidence that an uncomplicated regional block is safe for the baby. Some experts believe that relief of severe maternal pain and stress may actually benefit the baby. A regional block relaxes the mother while avoiding the sedative effects of IV or IM narcotic drugs. Temporary changes in the fetal heart rate occur frequently in normal labors and can occur with both regional blocks and narcotic medications. When not caused by other reasons, these changes are not associated with any long-term effects.

Some studies have found small increases in maternal temperature with prolonged epidural blocks, not caused by maternal or newborn infection. Therefore, if the mother has received epidural analgesia, a slight increase in maternal temperature does not result in our screening the baby for infection unless other risk factors are present. A regional block will not affect your ability to hold the baby immediately after birth or to breast-feed.



# Anesthesia For Cesarean Births

Epidural, spinal and general anesthesia can all be used safely for cesarean deliveries. The choice will depend on the urgency of the procedure, your medical condition and that of your baby, and your preferences. Regardless of the choice of anesthesia, more intensive monitoring is needed than when you are in labor and additional oxygen is given to benefit you and your baby. If you have regional anesthesia you will be awake, but your legs and abdomen will feel very numb. Although you should not feel pain, you may feel pressure during the surgery or the birth of your baby. Your partner or support person can be present throughout when you have a regional block for cesarean section and can observe the delivery in many instances when a general anesthetic is necessary.

## EPIDURAL ANESTHESIA

If an epidural catheter is already in place when a cesarean section becomes necessary, it can usually be used to provide surgical anesthesia. Your anesthesiologist will inject a stronger concentration of local anesthetic through the catheter to make your abdomen and legs completely numb. Because it takes about 10 to 15 minutes to work effectively, it may not be possible to use the epidural in very urgent situations. An epidural block is sometimes used to provide anesthesia even when no catheter is in place. This is performed like a labor epidural block, but uses larger doses of stronger medicines and takes place in our operative delivery room.

## SPINAL ANESTHESIA

Spinal anesthesia is the technique most often used for planned and some urgent cesarean sections. A single spinal dose rapidly results in good anesthesia, which lasts long enough for routine cesarean sections. A much smaller dose of anesthetic is needed than with an epidural block; and a very fine needle is used which rarely results in a headache. In certain circumstances, we may recommend a combined-spinal epidural (as described for labor analgesia) to allow greater flexibility of dosing.

## GENERAL ANESTHESIA

Some cesarean sections are so urgent that there is no time to perform a regional block. Also, regional block may not be a good choice with some maternal conditions (such as bleeding or previous spinal surgery). General anesthesia can be started quickly to make the mother unconscious during the delivery. Pregnant

women (particularly when in labor) have slower stomach emptying and are at greater risk of aspiration (stomach contents entering the lungs during unconsciousness or anesthesia). This can result in serious pneumonia. To decrease this risk, your anesthesiologist will take special precautions to protect the lungs, including placing a breathing tube in your wind-pipe after you are asleep. You will also be given an antacid to drink before anesthesia to neutralize any acid in the stomach. For your safety, it is important not to eat any solid food (including milk products) once you are in active labor, regardless of your plans for delivery or pain relief. Moderate amounts of clear fluids and ice chips are usually allowed in normal labors. You should check with your nurse or doctor to see what is best for you.

## PAIN CONTROL AFTER CESAREAN DELIVERY

It is usual to experience discomfort for several days after cesarean delivery, from the wound itself and from uterine contractions.

Pain medication will be available to you, given either via the IV, as an intramuscular shot, or as pain pills. If you have a regional block we often include narcotic medication with the local anesthetic to provide pain relief for most of the first day after surgery, after the numbness from the anesthetic has worn off. Epidural or spinal narcotics give pain relief by acting at special sites in the spinal cord. Given this way, tiny narcotic doses can keep you comfortable without making you or the baby sleepy. Narcotics given by any route can cause itching or nausea. If these symptoms are troublesome, medications are available to treat them. You should not hesitate to take medications to make you comfortable after delivery. The doses of pain medicine you receive will not affect your baby. In fact, if you are comfortable you are more likely to be able to care for your baby and succeed in breastfeeding.



## Summary

Please feel free to ask the anesthesiologist any questions you still have about pain relief options. If you have any special medical or obstetric problems, your obstetrician may refer you for consultation to the Obstetric Anesthesia team before your delivery. You can contact an anesthesiologist by calling Labor and Delivery: (650) 723-5403.

A free course offered each month through our Becoming Parents Program provides information about pain relief options from a Packard Children's obstetric anesthesiologist. For more information, please call (650) 723-4600.

This information is provided as one resource to educate and support you as you make decisions about your anesthetic care. You will also have the opportunity to discuss your care plan with your anesthesiologist prior to your procedure. Please contact us at any time if you have questions. Spanish and other language translators are available.

**If you have side effects after you go home, please call us directly in Labor and Delivery at (650) 723-5403.**



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