Epidurals during childbirth: What women should know

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When it's time to have a baby, some women head to the hospital with a detailed birth plan that includes a request to avoid epidural anesthesia. Others think an epidural is the only way to get through labor. Regardless

of the specifics of their plan, when women arrive at Yale New Haven Health hospitals for delivery, an anesthesiologist is always ready to talk to them about their options.

"If an expectant mother says she'd like a 'natural' childbirth—one that doesn't entail epidural anesthesia—I always try to honor her preferences and provide as much information as possible to help her make an informed decision," says PJ McGuire, MD, a Yale Medicine obstetric anesthesiologist. "It might be because she wants to experience everything, including feeling what labor pain is like. Or she may have read information online that scared her about epidurals. I will answer her questions and explain any misconceptions."

Used by an estimated 70%–75% of women who give birth, an epidural is the most common—and most effective—type of anesthetic for pain relief during labor.

An epidural is a numbing medicine given by inserting a needle and a catheter (a small, flexible tube) into the lower part of a woman's back. The needle is removed, but the catheter remains to deliver pain medication as needed throughout labor. The epidural creates a band of numbness from the belly button to the top of the legs, allowing women to stay awake and feel the pressure of labor but without the pain. It's primarily used during labor, but the anesthetic is also used for certain surgeries and specific causes of chronic back pain.

The most important thing for women to know is that they have options, explains Dr. McGuire, including the right to change their mind and request an epidural. "If a woman chooses an epidural, we do it. Or, if she decides to have a natural childbirth, we'll do that, too," she says. "And if she changes her mind later, that's not a problem at all."

Below, Dr. McGuire shares answers to common questions women have

about epidurals.

What is in an epidural?

The medication in an epidural is a combination of a local anesthetic—similar to Novocain—and an opioid, typically fentanyl or hydromorphone.

Weak concentrations of the drugs are typically used, and they stay in the spinal space. Only a small amount goes into the mother's bloodstream. Therefore, it is safe for the baby, and the mother will not experience the typical side effects of an opioid, such as drowsiness, that occur when an opioid is taken orally or given via IV.

Does an epidural hurt?

Before the epidural is administered, you'll receive a numbing injection, much like you would at the dentist before a cavity filling. "That initial injection in the lower back can hurt a little. But after that, women should feel no pain—just the pressure of the epidural needle being inserted," Dr. McGuire says.

When will I feel pain relief from the epidural?

Pain relief should begin about 15 minutes after receiving the epidural, which takes about 10 minutes to administer.

It's important to note that an epidural will last as long as a woman is in labor, Dr. McGuire adds, explaining that the medication is delivered continuously until it's time to deliver.

At what point during labor can I receive an epidural?

A woman can get an epidural at almost any time in labor if she can remain relatively still; however, an epidural is generally not given if the baby is close to being delivered.

Some women have heard they need to be dilated (meaning the cervix opens in preparation for birth) a certain amount before an epidural is given. However, according to guidelines from the American College of Obstetricians and Gynecologists (ACOG), a request from the mother is sufficient.

"There isn't a minimum cervical dilation. I have done epidurals at one centimeter and when a woman is fully dilated at 10 centimeters," Dr. McGuire says.

A common concern is that having an epidural early in labor slows down labor and delivery. "There is some evidence that it does slow it down by 20 minutes or a half hour. But in the grand scheme of things, it is not much more time," Dr. McGuire says.

Can I move around after receiving an epidural?

Usually, women have to stay in bed after receiving an epidural because of decreased sensation in their legs, which puts them at risk of falling. However, they are able to move their legs and can move around in bed, Dr. McGuire explains.

Are epidurals safe?

Epidurals are safe, but as with any medical procedure, there are small risks of side effects and complications. Serious risks—including blood clots inside the spine, infection (around the spine or brain), and nerve damage—are very rare.

Other possible complications include low blood pressure, itchy skin, and headaches. Blood pressure in both the baby and mother is constantly monitored during labor. If it goes too far down or up for either, blood pressure medication can be administered intravenously to the mother, which will help the baby.

Additional risks include failed or one-sided pain relief, which would require redoing the epidural, and difficulty emptying the bladder while the epidural is in place. Women may also experience a low-grade fever and heaviness or tingling in their legs during labor, depending on how much medication has been administered.

Do epidurals cause nerve damage?

The risk women are most often worried about is nerve damage, Dr. McGuire explains.

"Nerve damage is very rare and occurs in less than 1% of cases," Dr. McGuire says. "This could occur if the needle is inserted in the wrong location, advances too far, or comes in contact with a nerve root. If nerve damage does occur, it is usually temporary, resolving typically within a matter of weeks."

Women also ask if an epidural could cause chronic back pain, Dr. McGuire adds. "I explain that back pain after childbirth is from labor and is not caused by the epidural. Labor is a process that involves stretching muscles and ligaments."

What is a 'spinal headache?'

"Headaches, often referred to as 'spinal headaches,' occur in less than 1% of all epidurals," Dr. McGuire says. They occur when the epidural

needle goes farther than it should, and spinal fluid leaks out of the tiny hole created by the needle. The fluid loss affects nerves and tissues in the brain, causing a headache that usually arises within 24 hours of the epidural placement. It typically goes away on its own in a week, but sometimes it can last longer.

"The headache is either in the front or back of the head near the neck. It can be a sharp pain, and it feels worse when sitting up but goes away when you lie down," she says. "For treatment, we would provide over-the-counter medications or a special medication we can prescribe. But the gold standard treatment for a spinal headache is what's called an 'epidural blood patch.'"

Dr. McGuire explains that this is, essentially, another epidural in which blood is taken from the woman's hand and injected into the epidural space. The blood creates more buoyancy and seals the hole where the puncture occurred. The relief, Dr. McGuire says, is immediate.

Ideally, the blood patch is done before a mother is discharged, but if she develops the headache after she goes home, she can return to have it done.

Does an epidural affect the baby?

A small amount of epidural medication might reach the baby, but it's much less than medication delivered via IV or general anesthesia, which enters the mother's blood supply and crosses into the placenta. With epidural medicine, however, most of it circulates in the epidural space, and very little reaches the mother's blood.

Still, an epidural has some indirect effects on the baby, including blood pressure fluctuations (mentioned earlier).

Have epidurals changed over time?

The epidural a woman receives in 2023 is not the same as what has been used in years past.

"The changes have to do with the concentration of medicine we use. Over the years, women have told us they don't like being so numb that they can't move their legs," Dr. McGuire says. "So, we administer a lower concentration of medicine. She doesn't feel the sharp pains of contractions, but she is still able to move her legs."

The way the medicine is delivered has changed as well. When the catheter is placed and taped to a woman's back, it is attached to a special pump, she explains. The pump has a button women can press to deliver extra doses of pain medication a few times every hour.

"Once that bag is empty, we will give her another bag until she has the baby," Dr. McGuire says. "At Yale, the epidural pump is programmed to deliver a set amount, or bolus, of medication every 45 minutes. There's evidence that this medication delivery leads to better pain relief and, ultimately, more patient satisfaction. Mothers don't experience 'heavy legs' with this type of medication maintenance. And if the pump isn't enough, I can come back at any time and give her an extra dose of medication to help with the pain."

Will an epidural increase my risk of having a Cesarean section?

No, getting an epidural will not increase the risk of having a Cesarean (or C-section) delivery— the surgical delivery of a baby through an incision made in the mother's abdomen and uterus.

It could, however, slightly increase the risk of needing to deliver the baby with special tools like a vacuum or forceps.

"Through studies, we know that a higher concentration of epidural medicine was associated with this increased risk. However, the lower concentration we now use actually promotes normal spontaneous vaginal delivery without assistance," Dr. McGuire says.

What are some advantages of an epidural?

"Not every woman's birth plan goes as expected; some women need a C-section in the middle of labor. A benefit is that if she already has an epidural, I can give her much stronger medicine—surgical anesthesia—through the same catheter," Dr. McGuire says. "She will be numb from the waist down during the incision and surgery but remain awake. And the medication is continuous."

If a woman who didn't have an epidural requires an emergency C-section, Dr. McGuire says she would have no choice but to give her general anesthesia, which requires a breathing tube. "That is fine, of course, but she would be asleep, and more medicine will get to the baby. Nearly all the medications administered with general anesthesia will cross the placenta. This can lead to the baby being more sedated at delivery, which is why we always expedite the delivery during general anesthesia," Dr. McGuire says. "So, we'd much rather give the epidural and have the mother stay awake."

Epidurals also help lower stress hormone levels, which can help lower blood pressure and heart rate, which can become elevated because of labor pain.

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