



## Changes in Pelvic Floor Function at Childbirth and After Delivery

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### Introduction

There is no doubt that the structures of the pelvis go through dramatic changes during pregnancy and at the time of vaginal childbirth. The term “pelvic floor” refers to the collection of pelvic muscles (the levator ani) that provide support to the pelvic organs, including the vagina (sometimes called the birth canal), the urinary bladder (which holds urine and expels it through the urethra, a small tubular structure leading from the bladder to outside the body), and the rectum (which leads to the anus, surrounded by the anal sphincter muscles that control the passage of stool and gas). For vaginal childbirth to occur, the baby must be able to fit past the pelvic muscles and connective tissue. There is usually some amount of stretching or tearing that allows this to happen.

Only some of the currently unanswered questions include:

- How many of these changes at delivery are “normal” and do not result in adverse effects, compared to changes that represent true injury and result in symptoms either immediately or later in life?
- Can the management of pregnancy or delivery be modified to minimize the chance of injury?
- If injury occurs, what can be done to maximize the chance of recovery so that symptoms do not develop?
- Should women having their first delivery receive different recommendations for delivery than women who have already had one delivery (either vaginal or cesarean)?
- Should recommendations for management at a second delivery be influenced by what occurred at the first delivery?

Currently, changes in obstetric practice related to pelvic floor function are very controversial; unfortunately, women and their doctors have incomplete information about the risks and benefits of different approaches. At one extreme, a few obstetricians recommend cesarean delivery for all women having their first delivery, with the stated goal of avoiding injury to the pelvic floor and thus protecting against the development of pelvic floor

disorders. At the other extreme are doctors who insist that elective cesarean delivery should never be performed at the request of the mother. Somewhere in between those two extremes lies the right answer, but the right answer is not necessarily the same answer for all women. At the very least, all expectant mothers should expect the best available information from their doctors, with the understanding that not all questions can be definitively answered at this point. [1]

This article will review the use of episiotomy at delivery, which women should discuss with their clinicians during pregnancy. In addition, common symptoms related to bowel function after delivery will be discussed, including when women should alert their clinicians for further evaluation and possible treatment.

### Episiotomy

Episiotomy is a surgical incision in the perineum, which is the structure between the opening of the vagina and the anus that contains muscles and connective tissue. There are two types of episiotomies: midline (or median) and mediolateral. Midline episiotomies are made in a vertical line (from the doctor’s perspective, at six o’clock); almost all episiotomies performed in the United States are midline. Mediolateral episiotomies are performed on an angle (at five o’clock [left] or seven o’clock [right]); because of differences in training and experience, mediolateral episiotomies are most commonly performed by doctors in England and Europe. Most women, especially women having their first vaginal delivery, have some tears (also called lacerations) of the vagina or perineum. These tears are classified into four categories by the depth of tissue involved. First-degree tears involve only the skin of the vagina or perineum; these tears often do not need stitches, heal quickly, and usually have no lasting consequences. Second-degree tears involve the skin and the layer of tissue under the skin; when an episiotomy is performed, it is usually intended to be second-degree. Third-degree tears involve the skin, tissue under the skin, and the muscles of the anal sphincter. Fourth-degree tears involve all the same layers as a third-degree tear plus the rectal lining.

In the past, episiotomies were performed at almost all vaginal births, especially for women having their first delivery. Doctors were taught that episiotomy was better for the mother and baby, although this hadn't been proven by scientific evidence. By enlarging the opening through which the baby had to pass, doctors believed that episiotomies protected pelvic floor function by eliminating tearing and stretching, and replacing it with a surgical incision that would be easier to repair and would heal better.

However, scientific evidence accumulated over the past twenty years has proven that the exact opposite is true. Episiotomy does not protect pelvic floor function. In studies of outcomes after delivery, pelvic floor function (for example, muscle strength) was better in women with spontaneous lacerations compared to women who had episiotomies [2]. In fact, not only does episiotomy not protect pelvic floor function, it actually greatly increases the potential for a serious complication of vaginal childbirth, anal sphincter laceration. In one study, anal sphincter laceration occurred in 8.3% of women (on average, 1 in 12) with episiotomy, compared to 3.8% of women (1 in 26) delivered without episiotomy [3]. Among clinicians, obstetricians have the highest rate of episiotomy use compared to family practitioners or midwives [4]; among obstetricians, private practitioners have a much higher rate than faculty and residents in the same hospital (in one study, 67% versus 18% [5]).

When anal sphincter laceration occurs at childbirth (as described above, a third or fourth degree perineal laceration), the sphincter muscles are repaired with stitches after delivery. However, even when anal sphincter damage is recognized at delivery, current methods of surgical repair are inadequate. Persistent anal sphincter defects are present in up to 85% of women who sustain anal sphincter damage and repair at the time of vaginal delivery [6, 7]. After sphincter damage and repair, 42–54% of women still experience symptoms of gas or fecal incontinence after delivery [6, 8]. Especially since surgical repair cannot restore normal anorectal anatomy and function, it is critically important to prevent the initial damage at vaginal delivery.

### **How can anal sphincter laceration be prevented?**

The most important step in preventing anal sphincter laceration at vaginal delivery is restricting the use of midline episiotomy. I suggest that during pregnancy each woman should have an open discussion with her clinician about how often episiotomy is used. For example, you might ask, “On average, for your last 100 vaginal deliveries, how many women received an episiotomy?” Doctors and midwives should have these statistics available to them through their hospital; many departments now collect and report these statistics as one indicator of the level of care provided, similar to statistics on the rate of cesarean delivery. If the first answer you get is “I don't know,” then politely ask your clinician to find

out for you and ask again at the next visit. If your clinician says “Only when necessary,” you should press for an answer that includes an average number. “Only when necessary” might mean 90% of the time to one clinician, and 10% of the time to another. There is no one “right” answer; however, if the average number is high (for example, higher than 30%), you should discuss with your clinician your concern about the risk of anal sphincter laceration and ask to discuss the situations and reasons why episiotomy is used at such a high rate. If your clinician seems bothered or upset at your questions, or if the average number of episiotomies is high and your clinician can't or won't explain why, you might want to consider finding a different clinician to provide care for you during and after pregnancy.

### **After delivery**

As noted above, about half of women who had anal sphincter laceration and repair at delivery will experience some changes related to their bowel control. Even women who did not have direct anal sphincter damage at delivery may notice some bowel changes. These changes can include fecal urgency or incontinence. *Fecal urgency* means that there is very little time (five minutes or less) between the first urge to have a bowel movement and the need to pass stool. *Fecal incontinence* includes loss of control of gas, liquid stool, mucous, or solid stool. Fecal urgency and incontinence to gas are particularly common in the first few months after vaginal delivery. (Urinary urgency and incontinence are also very common during this time.) For many women, these symptoms improve or even disappear altogether in the first few months after delivery. However, for other women the symptoms persist and worsen with time. Some women find that their symptoms disappear after their first delivery, but return after their second or later deliveries. This is especially likely if the anal sphincters were torn at the first delivery, repaired, and then torn again at the next delivery.

If you notice changes with bowel control after delivery, the first step is to let your clinician know. Depending on how severe your symptoms are and whether they seem to be getting better or worse with time, your clinician might ask you to come to the office for an evaluation. Important questions to think about include whether your symptoms are affected by anything that you eat or drink; whether you had any symptoms like this before pregnancy and delivery; and whether anyone in your family has a bowel disorder, such as Crohn's disease or ulcerative colitis (inflammatory bowel disease). Physical examination of the vagina, rectum, anal sphincter muscles, and pelvic muscles can often determine what the problem is. If anal sphincter laceration and repair occurred at delivery, it may be possible to tell by physical examination whether the muscles are healing well or whether the muscles have separated. Sometimes, ultrasound is used to closely examine the sphincter muscles.

### Surgical Treatment

Colon and rectal surgeons have completed advanced training in the treatment of colon and rectal problems in addition to full training in general surgery. Surgery is not the answer for all patients with incontinence. Surgery to repair muscle damage is sometimes suggested to treat incontinence and different techniques apply depending on the type or extent of damage. When considering surgical treatment, be sure to discuss the risks as well as potential benefits, including chances and degree of expected improvement.

If the anal sphincter muscles are healing but weak, physical therapy for muscle strengthening might be recommended. Provided that the nerve supply to the sphincter muscles is still functioning normally and physical therapy exercises are performed regularly, then physical therapy is usually successful in improving symptoms of bowel control. If the sphincter muscles have separated, surgery to repair the muscles might be suggested; physical therapy might be recommended in this situation as well. Unfortunately, once the sphincter muscles have been damaged, surgery may be able to repair the separation but may not restore normal function to the muscles. More complex surgery to construct new sphincter muscles or to create an artificial anal sphincter is sometimes effective; these procedures should only be performed by specialists at centers with experience in these types of surgery. If all else fails, surgery to create a colostomy [a surgically created opening of the colon to the abdominal wall, allowing the diversion of fecal waste] can at least provide a sense of control and allow return to normal daily activities.

### Suggested reading

Lowry AC. *Surgical Treatment of Fecal Incontinence*, IFFGD Fact Sheet No. 303, 2003.

Lowry AC. *Medical Management of Fecal Incontinence*, IFFGD Fact Sheet No. 306, 2003.

Plummer M. *Strategies for Establishing Bowel Control*, IFFGD Brochure No. 302, 2002.

Plummer MK. *Biofeedback & Bowel Disorders: Teaching Yourself to Live Without the Problem*, IFFGD Fact Sheet No. 112, 2003.

More information can be found at this IFFGD web site: [www.aboutincontinence.org](http://www.aboutincontinence.org)

### References

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5. Howden NL, Weber AM, Meyn L. Episiotomy use by residents and faculty compared to private practitioners. *Obstet Gynecol* 2002; 99: S49 [abstract].
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7. Fitzpatrick M, Behan M, O'Connell PR, O'Herlihy C. A randomized clinical trial comparing primary overlap with approximation repair of third-degree obstetric tears. *Am J Obstet Gynecol* 2000; 183: 1220-4.
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