

Information for Parents About Incontinence (urine leakage)

Urinary incontinence (leakage of urine) is a common problem among children. Most children are out of diapers and able to urinate in the toilet by age 3 ½ years. Nighttime urine control may come later (age 5-7). Daytime incontinence causes frustration for children, their parents and school teachers. Several conditions can cause urinary incontinence. For this reason, it is important to determine the cause so that the proper treatment can begin.

Normal urinary tract function

In the normal urine system, the urine drains from the kidneys to the bladder where it is stored. A normal bladder can stretch to hold at least 3-4 hours worth of urine at a time. There are two muscle groups that allow the bladder to store and then empty urine. The **sphincter** (sfink-tur) muscle wraps around the urine channel as it leaves the bladder. When the sphincter muscle is active (when it contracts), the urine channel is closed to prevent urine from draining. The **detrusor** (dee-true-zor) muscle wraps around the bladder. When it contracts, it squeezes the bladder to empty the urine.

When the bladder is full, special nerves within the bladder send a message to the brain. If it is not an appropriate time for the bladder to empty, the brain sends a message to the detrusor (bladder emptying) muscle to relax and to stretch further, holding more urine. At the appropriate time (in the bathroom) the brain sends a message to the sphincter (control muscle), instructing it to relax and open the urine channel. The brain also sends a message to the detrusor muscle causing it to squeeze in order to empty the bladder. The two muscles (the sphincter and detrusor) must work together in a coordinated fashion. In other words, they should take turns contracting and relaxing. Incontinence can occur when these two muscles don't function properly.

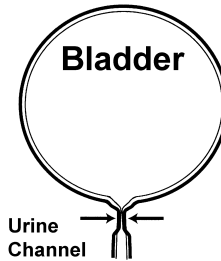
Causes of incontinence

Several conditions may cause urinary incontinence. Urine infection is one of the most common causes of incontinence. Infection causes inflammation in the bladder. This can irritate the nerves that control the detrusor muscle, making it more anxious to empty the bladder. Other conditions unrelated to infection can also cause incontinence. For example, if the detrusor (emptying muscle of the bladder) cannot relax for an extended period of time, or if it will not stretch enough, the bladder may leak. Sometimes the detrusor muscle is so active that it has frequent contractions, putting stress on the control muscle (sphincter). In some children, the detrusor muscle appears to be overly sensitive. A slight irritation, perhaps from a cough or sneeze, results in a full bladder contraction and emptying of the bladder. Less commonly, the sphincter muscle malfunctions, allowing the urine to leak out of the bladder. Sometimes a discoordination in the function of the detrusor and sphincter muscles can result in incontinence. If the detrusor muscle contracts while the sphincter is closed, the bladder may develop dangerously high pressures. This can lead to urinary tract infections and other problems in addition to incontinence. Sometimes the bladder doesn't empty completely. If, after a trip to the bladder, a child starts with a bladder that is half full, the bladder will reach the point of overflowing too quickly.

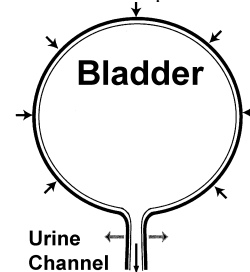
Sometimes conditions in organs adjacent to the bladder can irritate the urinary tract, causing incontinence. For example, an accumulation of stool in the large intestine directly behind the bladder can cause irritation of the bladder base, the most sensitive part, resulting in incontinence. It is often surprising for parents to learn that their child has constipation. Even though a child is moving her/his bowels daily, there may still be an accumulation of stool in the lower intestine causing bladder irritability.

Effects of Incontinence

Urinary incontinence results in the inconvenience and embarrassment of wet and smelly underwear and clothing. But incontinence can also have other more dangerous undesirable effects such as emotional stress. One of the most significant developmental milestones for children is achieving urinary and bowel control. Continence is an important sign of maturity; babies wear diapers and big girls wear underpants. Because of this, urinary incontinence can have a devastating effect on self-image.



Bladder Filling. The sphincter (control muscle) is closed around the urine channel and the bladder emptying muscle (detrusor) is relaxed. The bladder fills with low pressure.



Bladder Emptying. The sphincter (control muscle) is relaxed, opening up the urine channel while the detrusor muscle squeezes the bladder wall to push the urine out.

Some children respond to the overwhelming stress their urinary incontinence by ignoring it. This can be frustrating for parents. A parent may ask, "Didn't you know you were wetting?" And the child may respond defensively by saying "No!" Many parents interpret this answer as a form of dishonesty. It is probably more helpful to the child for a parent to recognize this as denial, a common emotional defense mechanism. Concentrating on treatment of the incontinence rather than trying to teach the child to be honest about incontinence will ultimately be more helpful.

Evaluation of Incontinence

To understand the cause or causes of urinary incontinence, it will be useful to measure bladder function. The first test we usually use is a **voiding diary**, a record of how often a child urinates and how much comes out with each trip to the bathroom. Keeping track of a child's bowel movements using the diary is helpful in detecting constipation. We may recommend a **uroflow** test to measure how fast the urine drains through the urine channel. In this simple and painless test, the child urinates into a special toilet that can detect urine flow. If the rate of drainage is slow or if the urine flow is intermittent rather than continuous, discoordination of the sphincter and detrusor muscles may be present. Following bladder emptying, a **post-void residual** measurement may be obtained. In this test, a hand-held ultrasound machine is used to measure how much urine remains in the bladder after urination. This can help us identify incomplete emptying or discoordination of the detrusor and sphincter muscles.

Treatment of Incontinence

Once the cause is known, therapy for incontinence can begin. If constipation contributes to the problem, a **bowel program** will be helpful. If the bladder is over-active or irritable, or if it doesn't stretch enough, more frequent trips to the bathroom (we call this a **timed voiding schedule**) may help. In some children with these problems, **medication** to relax the detrusor muscle is necessary. If discoordination of the detrusor and sphincter muscles is the cause of incontinence, retraining of those muscles through **biofeedback** is often helpful. Rarely, surgery is necessary to correct a problem contributing to incontinence.

Finally, it is important for parents to give support to children with incontinence. For most children, behavior problems are not the cause of the incontinence. Usually, it is the other way around. Incontinence brings embarrassment and emotional stress. And the frustration and discouragement of wetting can cause behavior problems. Rather than punishing a child for wetting, it is more helpful to praise and reward a child for success in staying dry. Whatever the cause of the incontinence, rewarding a child for improvement will be helpful.

Sometimes parents may get the feeling that their children are trying to punish them through incontinence.

"I asked him if he had to go to the bathroom just before we got in the car to go to the store and he said, 'No.' Then, as soon as we got to the store he asked me to take him to the bathroom, but by the time we found one it was too late. Why wouldn't he listen to me before we got in the car?"

"Sometimes when I see her crossing her legs tightly or holding her crotch, I'll tell her to go to the bathroom. She'll tell me she doesn't have to go and then a few minutes later she'll be wet. Why doesn't she just go to the bathroom when she feels the urge to urinate? It doesn't make any sense!"

What may seem simple and straightforward to parents (staying dry), is sometimes a very complicated and confusing problem for children with bladder function problems. It may well be that the boy who wet his pants in the store didn't "feel" the urge to urinate before he got in the car. Children with an over-active bladder may frequently get a sensation of bladder contraction that they try to control by tightening the sphincter muscle. They may get these sensations so frequently that it would be impossible for them to run to the bathroom each time they get this feeling. They may detect or define the need to urinate only when their bladders are filled to the point of leaking.

Although parents should avoid punishing a child for urinary incontinence, they should help them take responsibility for it. There are natural consequences of urine incontinence: wet clothes and underwear and sometimes wet furniture or floors. It is helpful for parents to expect a child to take age-appropriate responsibility by asking him/her to put wet clothes in the washing machine and to help in the clean up. This is not punishment, but a way of helping the child to be responsible. "Oh, that's too bad you had an accident. Why don't you take your wet clothes off and put them in the laundry and I'll help you turn on the washing machine." By taking such an approach, a parent sends a clear message to the child that the problem is hers, not the parent's and that her parent is anxious to help her solve her problem, not punish her. Patience is important in dealing with a child with urinary incontinence. Remember, incontinence is almost always out of your child's control. The goal of incontinence treatment is to identify the cause or causes and eliminate the conditions that keep your child from controlling his/her bladder.

For more information about Dr. Hatch please visit our web site [www.luhs.org/urology]

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7/28/2010