



The Doctor Is In

By Dr. David Hill

Accidents Do Happen

Last month in this space we reviewed bedwetting. This month we'll focus on daytime "accidents." It would seem that bedwetting and wetting in the daytime would be the same thing, and in some cases they are, but daytime wetting is usually part of a separate problem called dysfunctional voiding.

Aren't all accidents the same?

Actually, no. The pattern of wetting gives us major clues to the cause. Some vocabulary can be helpful here. Doctors call the release of urine from the bladder *voiding*, mainly because the word "pee" makes us snicker. When voiding occurs at an inappropriate time or involuntarily in a socially unacceptable setting we call that *enuresis*. Enuresis that occurs in the daytime is called *diurnal enuresis*. We can divide diurnal enuresis further into neuropathic and non-neuropathic enuresis. Neuropathic enuresis results from diseases affecting the brain, spinal cord, or nerves.

How common is diurnal enuresis?

Around 5% to 10% of school-age children experience daytime wetting. Girls outnumber boys three to two. Events may occur a few times a week or several times a day. They are often accompanied by related problems such as urinary tract infections or constipation. When constipation is present we call it dysfunctional elimination syndrome.

How is voiding supposed to work?

To review from last month, holding urine in the bladder then releasing it voluntarily requires complex coordination. As the bladder fills with urine, nerve fibers tell the brain how much it has stretched. The brain coordinates two sets of muscles to hold and release urine. The urinary sphincter is a muscular ring at the bladder neck that holds urine in. The detrusor is the web of muscle around the bladder that contracts to push the urine out. To void, a child has to sense a full bladder, relax the urinary sphincter, and contract the detrusor. Different children develop this skill at different rates, but most have it down by age four. The usual sequence of bowel and bladder control is nighttime bowel control then daytime bowel control then daytime control of voiding, and finally, nocturnal control of voiding.

What could possibly go wrong?

Dysfunctional voiding occurs when children suppress voiding for long periods of time by contracting the urinary sphincter. They may even use postures, such as leg-crossing, to overcome the need to void. After a while, the child has a hard time

relaxing the urinary sphincter even when he or she wants to. This means the detrusor is trying to force urine out of the bladder while the sphincter is trying to hold it in, leading the two processes to be "out of sync." Failure to relax the muscles of the pelvic floor can contribute to constipation as part of the same process.

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What will my doctor want to know?

The pattern of voiding and enuresis tells us a lot about what's going on, but once a child is toilet trained, it's easy to lose track of what they're doing in there. You can prepare for your appointment by keeping a three-day elimination diary. Write down how often your child pees and poops, taking note of any accidents or complaints of pain. Some doctors can even provide you with a device that fits inside the toilet to measure the quantity of urine with each void. We're also interested in toilet training: when did it occur, how did it go? A family history of urine or bladder problems can be helpful. Social stresses can precipitate elimination problems, so please be frank with your child's doctor about any difficulties occurring at home or at school.

What kind of exam should my child expect?

Diurnal enuresis may be a sign of a urinary tract infection, diabetes, neurologic problems, or anatomic abnormalities of the urinary tract. Your child's doctor is likely to look head-to-toe, with special attention to

the lower back, reflexes in the legs, and what I call the "pee-er and the pooper." A detailed genitourinary exam is often involved, sometimes including a rectal exam. This is an opportunity to review with your child who is and is not allowed to look "down there" and to rehearse with them how to say "no" and why "secret touch" is never okay.

Are there labs or studies I should expect?

A urinalysis is key, often accompanied by a urine culture. These studies will identify urinary tract infections, kidney stones, and diabetes. Imaging studies can be helpful, especially when a urinary tract infection is present. An ultrasound of the kidneys may identify swelling, atrophy, or abnormal placement of the kidneys. Unfortunately, ultrasound doesn't show where the urine goes, so some children also need a voiding cystourethrogram (VCUG). For this study we use a catheter to inject dye into the bladder. We can then see abnormalities of the ureters, bladder, and urethra and determine whether urine refluxes into the kidneys.

What are some common causes of diurnal enuresis?

While we're looking for serious problems, most enuresis is benign. Minor disorders include giggle incontinence (no description needed), stress incontinence from activity, vaginal urinary reflux (usually cured by improved posture), and extraordinary daytime urinary frequency syndrome. Moderate disorders include the "lazy bladder syndrome," where the bladder has become stretched out from infrequent voiding. This disorder is usually accompanied by constipation, and both respond to an elimination retraining regimen. The overactive bladder is common, especially between ages 5 and 7 years. This problem usually responds to bladder re-training, but sometimes medications are needed to suppress bladder spasms. Severe disorders include Hinman syndrome, Ochoa syndrome, and myogenic detrusor failure. These are all pretty rare, presenting with prolonged and severe symptoms.

How do these kids do?

The good news is that most cases of diurnal enuresis we see are easily treated. With behavioral measures such as timed voiding and therapy for constipation, 75% of children are better within a year. In other words, it all comes out okay in the end.

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