

# CONTINENCE FACTS



The Canadian  
Continenence  
Foundation  
(Canada)

## URINARY VOIDING DYSFUNCTION IN CHILDREN A Brief Overview for Parents and Primary Care Providers

Chad Wallis, MD

Fellow in Pediatric Urology, The Hospital For Sick Children, University of Toronto and

Darius J. Bāgli, MDCM FRCSC FAAP FACS

Attending Urologist & Associate Scientist, The Hospital For Sick Children

Associate Professor of Surgery, University of Toronto

Member, Board of Governors, The Canadian Continenence Foundation

Potty training is an important developmental milestone for both children and, believe it or not, their parents too! While some children breeze through the transition from diapers to underwear, for many children the transition can be a long and winding road. Time, patience, and above all a positive attitude are the keys to success in resolving most issues. School-age children with persistent wetting episodes and children who develop urinary tract infections warrant a more proactive approach.

### Normal Voiding Function

It is useful to dispel some common misconceptions about elimination habits and behaviors in children. First, there is **no** specific age for potty training. Parents should not compare bladder control age of their own child with that of other children, despite the temptation to do so. While most children generally show an interest in voiding and subsequently develop daytime bladder control around age 24-36 months, some do so remarkably earlier, and some quite later. Parents need to strike a balance between allowing children to develop their own interest in potty training while encouraging but not imposing their own schedule on the child. Also, it is very common to have little or no night-time urine control well beyond age 5. While most children will be dry at night (or when they wake up in the morning), 5% of children are well into their teens before night-time control is achieved, and is rarely if ever a cause for alarm. In fact, late attainment of night-time bladder control can run in families! Developing control of bowel and bladder function usually follows the sequence: nighttime bowel, daytime bowel, daytime bladder, with night-time bladder control the last function to mature. **Secondly, bladder control is a complicated process, which requires normal brain, spinal cord and pelvic nerve function.** Just as a child's nerves and brain mature at specific times to achieve walking, talking, reading and writing, so too does bladder function require the normal maturation of specific nerve centres in the brain and spinal cord before the normal sequence and pattern of day and night-time control are achieved. Proper bladder control or continence in a child is **NEVER** to be taken for granted as simply a socially expected task that just "happens". Bladder control is a physiology that can be modified by behavior. And just as a behavior can be learned correctly, it can also be learned incorrectly or affected by many other features of a child's life and social environment.

### What Is Voiding Dysfunction?

The term voiding dysfunction implies some abnormality related to the manner in which children urinate. Voiding dysfunction is generally manifested by either incontinence or urinary tract infections.

Incontinence means the involuntary loss of urine. It may occur during the day, at night, or at both times. It may occur sporadically, continuously, or only during certain activities. While generally not medically harmful, it becomes a social inconvenience for parents and caregivers in younger children. Older children generally recognize the social stigma that accompanies persistent incontinence and this can become a source of frustration and low self-esteem. However, the degree to which the children vs. their parents are affected by the child's incontinence can become confusing. While some childhood incontinence certainly needs investigation, one needs to be careful not to subject a child to undue investigation and scrutiny of incontinence if it is not warranted, simply because of excessive parental or caregiver reaction or their own sense of inconvenience.

That said, incontinence in children should not be ignored either. Children with voiding dysfunction are also at an increased risk for developing urinary tract infections. Recurrent or febrile infections may put the kidneys at risk by causing scar formation that can decrease the life-long function of the kidney, and may also lead to life-long high blood pressure beginning in childhood. Symptoms of a urinary tract infection include new painful urination, foul-smelling urine, new excessively strong urges to urinate, increased frequency of urination without incontinence, as well as incontinence itself. In severe infections children may develop fevers, flank pain, and nausea with vomiting.

### What Are The Causes Of Voiding Dysfunction?

Causes of voiding dysfunction include a broad range of medical conditions and behaviors. Infrequent voiding is a common cause of voiding dysfunction and is often closely linked with constipation. For example, painful bowel movements can create an avoidance of emptying the bladder as well, even though the bladder had previously normal function. Both conditions increase the risk of developing urinary tract infections.

Irritants to the bladder may represent the cause of voiding dysfunction in some children. Instrumentation of the urinary tract, infections, or some types of food

*(please turn over)*

# CONTINENCE FACTS

Continued



The Canadian  
Continenence  
Foundation  
(Canada)

(caffeine, citrus juices, carbonated beverages) may be a source of bladder or urethral irritability in some children.

Children with neuro-developmental delays are also often slow to develop proper voiding habits. Children with neurologic conditions such as spina bifida, spinal cord injuries, brain disorders, or muscle disease can typically demonstrate signs of voiding dysfunction. Congenital abnormalities of the urinary tract anatomy may also be responsible for voiding dysfunction in some children.

## **How Should My Child Be Evaluated?**

The family doctor or pediatrician can often make the initial evaluation. A careful history and physical examination should be carried out by a physician to determine the type of voiding dysfunction and possible causes. If advised, children can be assessed by a children's urologist. *The Pediatric Urologist is a highly trained surgical sub-specialist qualified first in general urologic surgery of adults, followed by additional experience and training in developmental and disease problems of the kidneys, urinary tract, and genitalia of female and male newborns, infants, children, and adolescents.* The pediatric urologist can focus investigations more specifically to determine urinary habits and function. Keeping voiding diary which records when and how much a child urinates and/or wets, is a useful tool to assist the physician or urologist in determining the nature of a child's voiding habits. Laboratory testing is minimal and often consists only of a simple urine test. An ultrasound of the kidneys and bladder may also be advised, but only after initial consultation has been performed.

## **What Are The Treatment Options?**

The mainstay of treatment for children with voiding dysfunction often consists of some type of bladder behavior retraining program. Establishing more frequent urination every 2-3 hours, increasing daily water consumption, and modifying the child's diet to avoid or correct constipation form the basis of such programs.

When these measures are unsuccessful, some children who have been identified as having an overactive bladder may be started on a medication to help relax the bladder. However, medication should never be a first treatment. These medications may be used temporarily while the bladder retraining is continued, or they may be required long-term.

In some instances the problem may become so severe as to require more intense investigation and management of the bladder. The Pediatric Urologist will best be able to assess and manage such children.

## **When Should My Child Be Seen By A Pediatric Urologist?**

Parents and caregivers can manage many issues relating to voiding dysfunction in their children after consultation with a primary care physician or nurse trained to

recognize the basic and common features of voiding dysfunction in children. There are children, however, who should be referred to the Pediatric Urologist for further evaluation if certain conditions exist. These conditions include the following, *but may also include others not listed here:*

1. Urinary tract infections: Children who develop febrile urinary tract infections or repeated non-febrile infections may have an underlying anatomic abnormality and require further evaluation to prevent scarring of the kidneys.

2. Continuous incontinence or new disturbance in voiding pattern: Children who experience continuous dribbling with only a short or no period of dryness may have a surgically correctable cause for their incontinence. Children whose urinary pattern changes when it was previously normal, should also be considered for initial evaluation.

3. Neurological or Muscular Impairment: Children with known neurological or muscular disorders plus voiding dysfunction, in addition to a primary care doctor and other specialists, should be under the care of a Pediatric Urologist. Patients with suspected neurological or neuromuscular impairment (poor coordination, mobility or sensation) of their lower body may also have an underlying disorder affecting control of their bladder. Sometimes, a new problem with urination is the only telltale sign of a previously undisclosed neurological problem. In these cases, in addition to seeing a Pediatric Urologist, they may also require evaluation by a Pediatric Neurosurgeon.

## **Conclusion**

Taking urination and bladder or bowel behaviors for granted is the single biggest threat to bladder health facing children today.

The vast majority of children develop normal healthy urinary habits on their own, particularly when raised in a healthy social environment. Awareness that true incontinence exists in a child needs to take into account a number of related issues including the child's age, their overall mental and physical health and attitude, the existence of potentially significant medical problems such as urinary tract infection, as well as the attitude and awareness of parents, caregivers, school personnel, and primary care physicians and nurses. Often, up to date advice and information from informed professionals can make the difference between uncontrolled or worsening incontinence and damage, and recognizing an underlying cause and correcting it early.

For more information about incontinence contact:  
P.O. Box 30, Victoria Branch, Westmount, Qc H3Z 2V4  
Tel: (514) 488-8379  
Toll Free: 1-800-265-9575  
Fax: (514) 488-1379

E-mail: [help@continence-fdn.ca](mailto:help@continence-fdn.ca)  
**[www.continence-fdn.ca](http://www.continence-fdn.ca)**

© The Hospital for Sick Children and  
The Canadian Continenence Foundation Copyright 2005