

## Researchers identify potential risk factors for urinary tract infections in young girls

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Young girls with an intense, red, itchy rash on their outer genital organs may be at increased risk of developing urinary tract infections (UTIs), according to new research from Wake Forest Baptist Medical Center. The treatment may be as simple as better hygiene and avoiding potential irritants such as bubble baths and swimming pools.

"Vulvitis is a common condition affecting women and girls of all ages," said senior author Steve J. Hodges, M.D., associate professor of urology at Wake Forest Baptist. "We found that girls with vulvitis were at least eight times more likely to have a lab-diagnosed UTI than girls without vulvitis, suggesting that vulvitis is a major contributor to UTIs in young girls."

According to the research, published online ahead of print in *Therapeutic Advances in Urology*, vulvitis may cause UTIs by altering the type of [bacteria](#) normally found in the area between the vagina and anus.

Vulvitis is the most common gynecological condition in pre-menstrual girls and is the greatest reason for referral to a pediatric gynecological specialist. Because vulvitis in postmenopausal women has been shown to change the type of bacteria that binds to cells that line the vagina and increases the risk of UTIs, the scientists wondered whether there might be a link between vulvitis and UTIs in pre-menstrual girls.

The study involved 101 toilet-trained girls between 2 and 8 years with symptoms of UTI, such as urinary frequency, urgency, pain, hesitancy or

night wetting. The children's urine was cultured and a "swab" from the genital area was analyzed in the lab.

More than half (57 percent) of the girls with suspected UTIs also had signs of vulvitis. The urine analyses showed that of the 101 patients, 35 percent had proven UTIs and 86 percent of those had vulvitis.

Almost eight out of 10 (79 percent) of the [girls](#) with vulvitis had organisms commonly associated with UTIs, such as e-coli. Girls without vulvitis were more likely to grow bacteria not associated with UTIs.

The researchers hypothesize that the inflammation associated with vulvitis initiates the process that can lead to UTIs. Hodges said inflammation perturbs the normal bacteria in the area and may allow "competing" UTI-causing bacteria to colonize. Exposure to bubble baths, swimming [pool water](#), urine, feces – all combined with suboptimal hygiene—contribute to a pro-inflammatory environment.

As UTI-causing organisms replicate and spread, they can ascend via the urethra to the bladder and cause a UTI.

The researchers cautioned that the study cannot conclude if vulvitis causes UTIs or vice-versa.

"However, given this association, we recommend that practitioners always assess [young girls](#) for the presence of vulvitis, and if present, work diligently with parents and patients to treat and prevent its recurrence."

The condition is generally treated by preventing the continued irritation by using barrier creams or wipes and keeping possible irritants, such as urine, soaps/bubbles and pool water off the skin. In some cases yeast therapy or steroids are prescribed.

Hodges noted that there has previously been a lot of anecdotal evidence on pools and baths causing UTIs. "With this study, we have found a plausible cause of that relationship as irritation from certain pools or baths may increase the colonization of certain bacteria," Hodges said.

**More information:** Hodges has written a book for consumers that covers this and other pediatric urology issues. "It's No Accident: Breakthrough Solutions To Your Child's Wetting, Constipation, UTIs, and Other Potty Problems," published by Globe Pequot Press, will be released in early February. Hodges also developed astringent wipes for perineal skin irritation and founded a company to market them.

Provided by Wake Forest University Baptist Medical Center

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