UNIVERSITÄTS-
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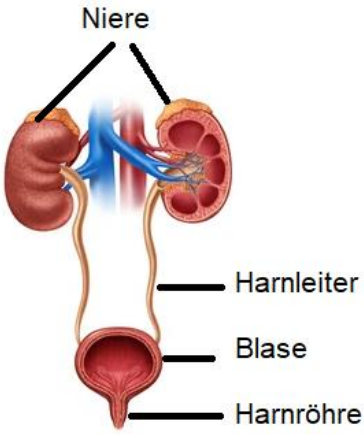
Patienten-/Elterninformation

Urinary Tract Infection (UTI): Symptoms and Measures

1. Introduction

Urinary tract infections are caused by bacteria that enter the urethra or bladder and cause inflammation. Most often, the bacteria come from the intestines. Inflammation can occur in different parts of the urinary tract.



Kidneys: Inflammation of the kidneys is called **pyelonephritis**; typically with fever.

Bladder: Inflammation of the bladder is called **cystitis**; typically without fever.

In children who empty their bladder using a catheter, bacteria are very commonly found in the urine. However, these bacteria usually do not cause inflammation. This is called **bacteriuria**.

2. Preventive Measures

- Drink enough fluids, especially when the child is ill (e.g., diarrhea, cold…).
- Empty the bladder regularly, approximately every 2–4 hours.
- For girls: clean the genital area from front to back.
- Ensure regular bowel movements. If bowel problems such as very frequent stools, stool smearing, or constipation occur, contact the continence counseling service.

3. Beobachtungen und Massnahmen

Uri	Symptome	Interventions
Cloudy, flaky, strong-smelling, unusual color	No physical symptoms Child in good general condition	**Bacteriuria:** – Increase fluid intake – For children who catheterize: • Empty bladder 1-2x more frequently than usual • Rinse bladder 2x/d (instruction by continence couseling – If unsure, or for children under 6 months: telephone consultation
Cloudy, flaky, strong-smelling, unusual color	**One or more symptoms:** − Increased incontinence (urine leakage) − Pain/discomfort in the lower abdomen − Pain during catheterization or urination − Frequent urge to urinate − Blood in the urine **Child in good general condition**	**Bladder infection (cystitis):** − Increase fluid intake − Empty the bladder more frequently – For children who catheterize: • Empty bladder 1-2x more frequently than usual • Rinse bladder 2x/d (instruction by continence couseling - Medication such as pain relief, after consultation If symptoms do not improve within 24–48 hours, or if red-category symptoms appear → doctor`s visit.
Cloudy, flaky, strong-smelling, unusual color	**One or more symptoms:** − Fever, chills − Flank pain **Especially in small children or children with disabilities:** − Reduced general condition: discomfort, restlessness, irritability, hypersensitivity, apathy, fatigue − Poor fluid intake, loss of appetite − Vomiting − Spasticity, goosebumps, flushed face	**Suspected kidney infection (pyelonephritis):** − Doctor visit: examination to assess whether symptoms may have other causes (e.g., a cold). − Urine examination. − If a treatable infection is confirmed, therapy is necessary. − Inform the children's hospital including available laboratory results. − Additional measures as listed under "Bladder infection".

4. Urine Examination

In order to treat a symptomatic urinary tract infection, a urinalysis (urine microscopy) and a urine culture are required. The urine examination is performed by a paediatrician or in the emergen-cy department. The urine is collected directly in a sterile cup as midstream urine sample or by single catheterization. Collecting urine via a urine bag is not recommended, as contamination may occur due to contact with the skin.
Before starting antibiotic treatment, a urinalysis and urine culture should be taken.
However, the results of the urine culture are usually only available after a few days.
We advise against routine urine testing with a dipsticks (urine strips). Especially in children who are catheterized, dipsticks are often positive, but the results have no clinical consequence

5. Antibiotic Resistance

Antibiotics are an important part of treating urinary tract infections. However, they should only be used when truly necessary and only if prescribed by a physician. It is also essential that antibiotics are taken exactly at the prescribed dose and for the prescribed duration. This helps prevent the development of antibiotic-resistant bacteria. Resistant bacteria can no longer be treated with usual antibiotics; in some cases, intravenous treatment is required. This makes future UTIs harder to treat.

This information leaflet is intended to help guide decisions when abnormalities occur. However, each situation must be assessed individually. If you are unsure, it is recommended to contact the continence counseling service or your pediatrician.

If you have any questions or concerns, please do not hesitate to contact us:

Continence Counseling

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Literature:
Buettcher, M., Trueck, J., Niederer-Loher, A. *et al.* Swiss consensus recommendations on urinary tract infections in children. *Eur J Pediatr* **180**, 663–674 (2021).
Sherry S. Ross MD [a], Catherine S. Forster MD, MS [b], Kristy Borawski MD. (November 2024) Urinary tract infection and neuropathic Bladder,
Public Health England, Urinary tract infection (UTI) information leaflet