B-QuiCK: Urinary tract infections (UTIs) in children

Identifying and diagnosing UTIs in children

- UTI symptoms in young children may be non-specific, e.g. fever, irritability, poor feeding, vomiting
- Older children may report urinary symptoms, e.g. frequent or painful urination, changes to urine colour or smell, abdominal or back pain
- Suprapubic or flank tenderness, palpable bladder or stool in the bowel, abdominal distension, dehydration and/or fever may be present on physical examination

Red flags for paediatric advice or referral

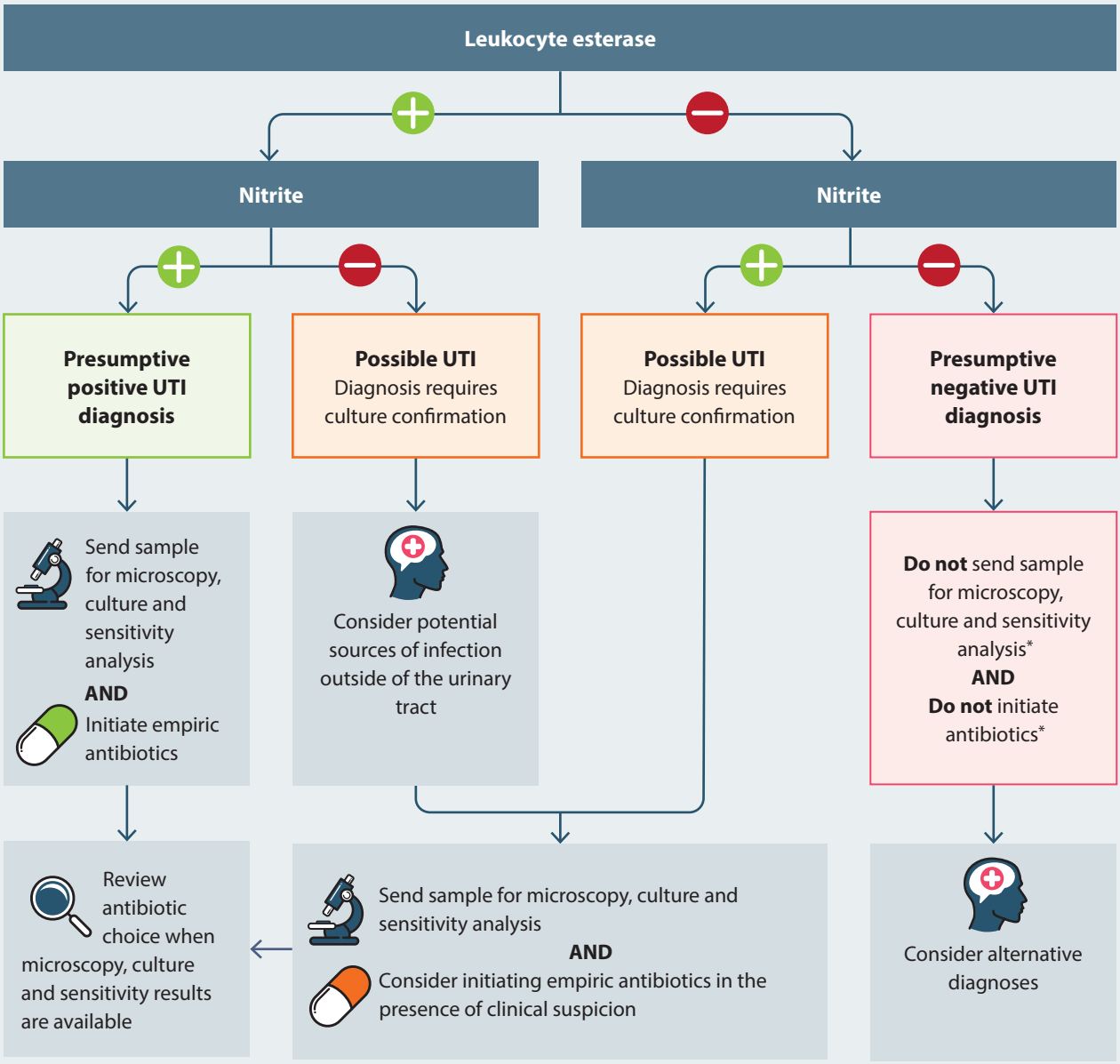
- Seek paediatric advice for children with a suspected upper UTI, i.e. with UTI symptoms accompanied by fever ≥ 38°C and/or loin or flank pain/tenderness
- Acute paediatric referral is indicated for children:
  - Aged under three months
  - With symptoms or signs of significant systemic illness or sepsis
  - With complicating factors, e.g. an abdominal or bladder mass, impaired renal function, anatomic urinary tract abnormalities, previous renal surgery/implants

- Collect a urine sample before initiating antibiotic treatment, if possible. Mid-stream or clean catch urine samples are preferred; see bpac.org.nz/2026/child-uti.aspx for methods of urine sample collection in children.
- Urine dipstick testing can support the diagnosis. However, urine microscopy, culture and sensitivity analysis is required to confirm a UTI and determine microbial sensitivity.
- In children aged over three months, a UTI is unlikely with a negative dipstick test result for **both** leukocyte esterase and nitrite; consider alternative diagnoses
  - In children aged three months to three years, a positive dipstick test result for **either** leukocyte esterase or nitrite is sufficient to initiate empiric antibiotic treatment and send the sample for microscopy, culture and sensitivity analysis
  - Refer to the figure below for the interpretation of dipstick results in children aged 3 – 12 years

B-QuiCK provides short clinical summaries from some of the full articles available on our website. Relevant sections from these resources have been condensed into "notepad pages" or algorithms designed to offer rapid access to practical clinical advice and knowledge. It is strongly recommended to review the original resource at your convenience for full details of recommendations and evidence. See full article here: https://bpac.org.nz/2026/child-uti.aspx

www.bpac.org.nz/b-quick

Interpreting dipstick test results for urine samples obtained from children aged 3 – 12 years.



* Use clinical judgment; if dipstick results do not correlate with the child's symptoms and signs and clinical suspicion of a UTI persists, laboratory urinalysis may be appropriate

Treatment of mild, uncomplicated lower UTIs in children

- Initiate oral empiric antibiotic treatment while awaiting laboratory urinalysis results
- Review antibiotic choice once results are available. If symptoms are not improving and the pathogen is resistant to the empiric choice, select an alternative.
  - Seek paediatric advice if symptoms do not respond to appropriate antibiotic treatment within 48 hours

Oral antibiotics for mild lower UTIs in children aged three months to 12 years.

Order of preference	Empiric treatment	
	Cefalexin	25 mg/kg/**dose**, three times daily (maximum 500 mg/dose), for three days
	Nitrofurantoin* (immediate-release)	1.5 mg/kg/**dose**, four times daily (maximum 50 mg/dose), for three days N.B. There is no funded liquid formulation of nitrofurantoin available. Immediate-release tablets can be compounded into a 10 mg/mL suspension (funded if the child is unable to swallow tablets)
	If bacteria are known to be sensitive	
	Amoxicillin + clavulanic acid	30 mg/kg/**dose**, three times daily (maximum 625 mg/dose), for three days
	Trimethoprim + sulfamethoxazole	24 mg/kg/**dose**, twice daily (maximum 960 mg/dose), for three days

* Avoid in children with renal impairment or if an upper UTI is suspected (paediatric advice is usually indicated)

A longer course, e.g. up to seven days, may be considered in children with more severe symptoms but no red flags for secondary referral

Reducing the risk of recurrent UTIs and renal scarring

- Request a renal ultrasound (ideally to be performed six weeks after presentation) for:
  - **Children aged < 12 months with their first UTI**
  - **Children of any age with an atypical UTI** who have not previously been investigated with a renal ultrasound*, i.e.:
    - Poor response to antibiotics after 48 hours
    - Poor urine flow/suspected urinary obstruction
    - Abdominal or bladder mass
    - Raised creatinine
    - Hypertension
    - Infection with a non-*E. coli* organism
  - **Children of any age with recurrent UTI** who have not previously been investigated with a renal ultrasound*
    - * A repeat renal ultrasound may be indicated if a child re-presents with an atypical or recurrent UTI > 12 months after their previous renal ultrasound; seek paediatric advice
- Provide education about UTI prevention, e.g. sufficient fluid intake, management of constipation, correct toileting technique

Managing recurrent UTIs

- Recurrent UTI in children is defined as ≥ 2 culture-proven UTIs within one year, or ≥ 3 if the symptoms were only mild
- Treat as per acute UTI. Base empiric treatment on previous urine culture and sensitivity results. A renal ultrasound may also be indicated (see above).
- Antibiotic prophylaxis is generally only indicated in children with known genitourinary abnormalities and is usually initiated by a paediatric specialist
  - Treat breakthrough UTIs that occur in children taking antibiotic prophylaxis with a different antibiotic to the one prescribed for prophylaxis