

This **Fact Sheet** is intended as a guide only and does not equate to expert opinion. Interpretation of results should always be taken in context with the patient's current condition and clinical review.

Urine MC&S – *interpretation of results*



- Urine microscopy, culture and susceptibility (MC&S) testing is used to detect a urinary tract infection (UTI):
 - in the *lower* parts of the urinary tract (the bladder), this infection is called **cystitis**
 - in the *upper* part of the urinary tract (the kidneys), this infection is called **pyelonephritis**
- Sometimes bacteria are found in urine samples without an infection being present, this is **asymptomatic bacteriuria**; up to 25% of elderly women have this and treatment is generally not recommended.

Microscopy



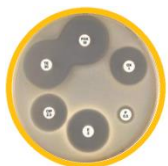
- If there is a high *white cell*, *polymorph* or *pus cell* count $>40 \times 10^6/L$, ++ or +++ in urine, this suggests an infection is more likely to be present.
- If *squamous epithelial cells* are present $>10 \times 10^6/L$, ++ or +++, this suggests contamination from the skin and the urine specimen is **not a good** sample.

Culture



- If there is a colony count of $>10^6/L$, ++ or +++ of a bacteria, this is more likely to be a **true infection**.
- Growth of more than one bacteria species is uncommon and suggests possible **contamination** (especially in non-catheter specimens).
- Common bacteria likely to cause UTIs include: *Escherichia coli*, *Proteus*, *Klebsiella*, *Enterococcus* and *Staphylococcus saprophyticus*.

Susceptibility



- If the patient is taking an antibiotic to which the bacteria is reported as *resistant (R)* or *intermediate (I)*, then this treatment may need to be changed to an antibiotic that is reported as *susceptible (S)*.
- If there is more than one antibiotic to which the bacteria are reported as *susceptible (S)*, the patient should be prescribed the one with the *narrowest spectrum*.

Note:

Dipsticks: dipsticks alone are **not** reliable in the diagnosis of a UTI, a urine sample should be sent for culture for confirmation where ever possible.

Catheter specimens: samples taken through a urinary catheter are almost always colonised by bacteria, these do not need to be treated if the patient is otherwise well.

Whether or not antibiotics are given, it is important to remember that infection **will not** clear without changing the catheter and in many cases this is all that is required; antibiotics may then be avoided.