# URINE MICROSCOPY AND CULTURE

**TESTS: AUTOMATED MICROSCOPY, CULTURE AND SENSITIVITY (C&S)**

**Related investigations:** Chlamydia Investigations (Urine); Legionella and Pneumococcal Urinary Antigen Detection.

<table>
<thead>
<tr>
<th>Specimen type</th>
<th>Urine, mid-stream urine (MSU), clean-catch urine (CCU), catheter specimen urine (CSU), pad/bag urine, ileal conduit specimen, uroscopy specimen, cystoscopy urine, supra-pubic aspirate (SPA), etc.</th>
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| Container     | Routine adult urine samples: 10 mL sterile, CE marked, leak-proof container with boric acid preservative (powder)  
Routine paediatric urines and small samples: 5 mL sterile, CE marked, leak-proof paediatric container with boric acid preservative (powder)  
Invasive procedure urine e.g. SPA: sterile, CE marked, leak-proof universal container (without boric acid) |
| Volume / quantity requirements | Adult specimen (boric acid): minimum volume 3 mL*; maximum volume 10 mL (fill line on container)  
Paediatric specimen (boric acid): minimum volume 1mL*, maximum volume 4 mL (fill line on container)  
Invasive procedure urine: minimum volume 1 mL, maximum volume 25 mL |
| Optimal time and method of collection | • Collect prior to starting antibiotics where possible  
• MSU is the sample of choice for routine investigations  
• Perirethral cleaning with water prior to sample collection may help reduce contamination  
• CSU specimens should be collected from a sample port or the tubing, never from the collection bag  
• Uries collected by invasive procedures should be performed under strict aseptic conditions |
| Transportation | • Place the labelled swab inside a sealed plastic bag attached to a correctly filled in microbiology request form.  
• Transport the specimen to the Microbiology Department at UHND as soon as possible.  
• For general transportation information refer to the transport page. |
| Storage | Specimens that cannot be transported or processed immediately should be refrigerated (2-8°C). Boric acid stabilises the bacterial population for up to 96 hours and cellular components remain intact.  
Non-boric acid containers should be sent to the laboratory within 4 hours of collection |
| Special considerations and limitations | Antimicrobial therapy may inhibit bacteria in the urine leading to false negative culture results  
Under-filling boric acid containers can lead to high concentrations that are inhibitory to bacteria  
Poorly taken specimens are prone to contamination and culture results will not accurately reflect the clinical picture  
Urines catheter tips are not acceptable for culture |
| Relevant clinical information | • State the symptoms and any presumptive clinical diagnoses  
• State if the patient is immunocompromised  
• State if the patient is pregnant  
• Please include details of recent, current or proposed antibiotic therapy, including allergies |
| Consent information | Healthcare professionals: follow local procedures for obtaining consent from patients. |
| Biological reference intervals and clinical decision values | Microscopy is performed using an automated system. Urines that do not contain more than 40 white blood cells per µL are not cultured* as there is no evidence of significant pyuria.  
Interpretation of culture results and reporting depends upon many factors including; the clinical information given with the request, presence of white cells, growth of normal flora, growth of potential pathogens, etc.  
*Some specimens are cultured regardless of microscopy results including children under 5yrs, pregnancy, immunocompromised, ITU patients, etc. |
| Availability of testing | Urines are processed 6 days a week (Mon to Sat) during routine laboratory hours. Urgent requests are not available outside of routine laboratory hours. |
| Measured turnaround time | Refer to the Microbiology Turnaround Times page for current information. |

* Boric acid crystals must be completely dissolved in the volume of urine

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[Image: Microscope and culture results]