

Key points: Urine test results Acute care | Adults

1. Urinalysis (UA)–macroscopy / dipstick

Positive UA or dipstick

- leukocytes \geq 1+, *or*
- $>$ 5 WBC/hpf on microscopy

Nitrates and bacteria are not reliable for diagnosing infection

UA positive

Negative UA

- leukocytes negative or $<$ 1+, *or*
- \leq 5 WBC/hpf on microscopy

This reasonably rules out urinary tract infections (UTIs) in most patients.

UA negative

In older adults, microscopy is more accurate than dipstick for ruling out UTIs

2. Urine Culture

Positive urine culture

- 10^6 CFU/L: May be a significant colony count if patient has UTI symptoms.

Urine culture positive

Negative urine culture

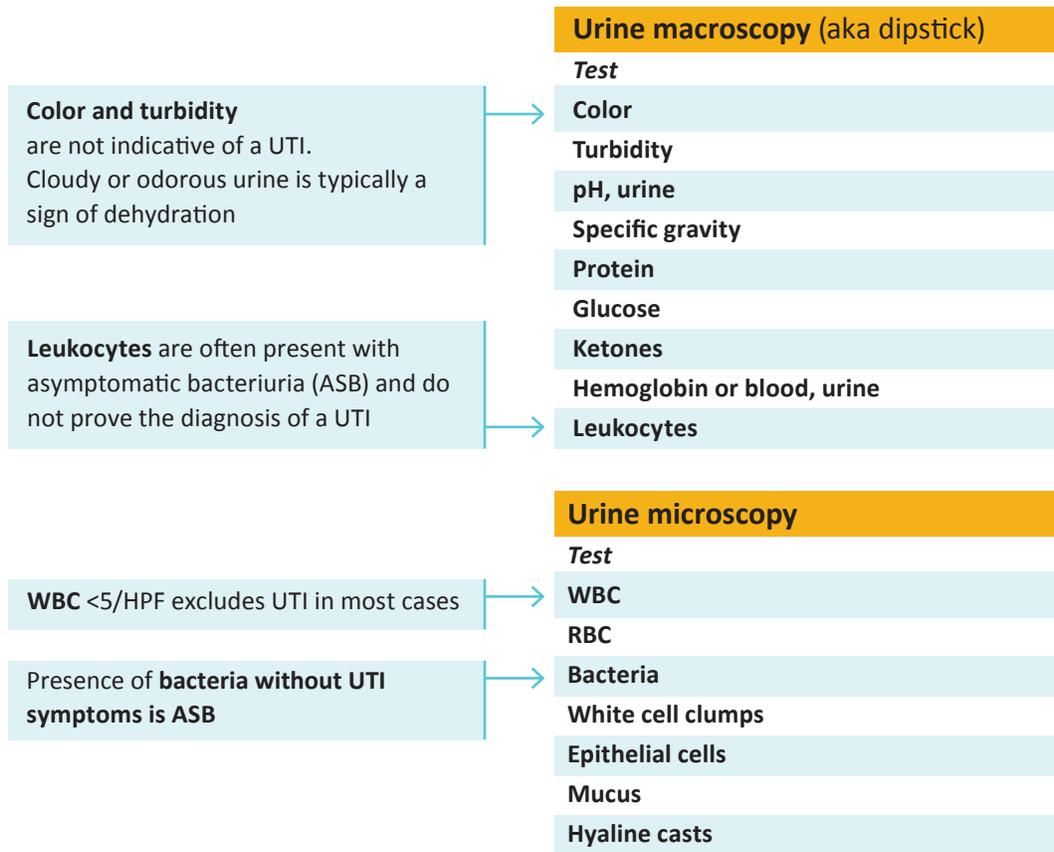
Urine culture negative + UA negative

Urine culture negative + UA positive

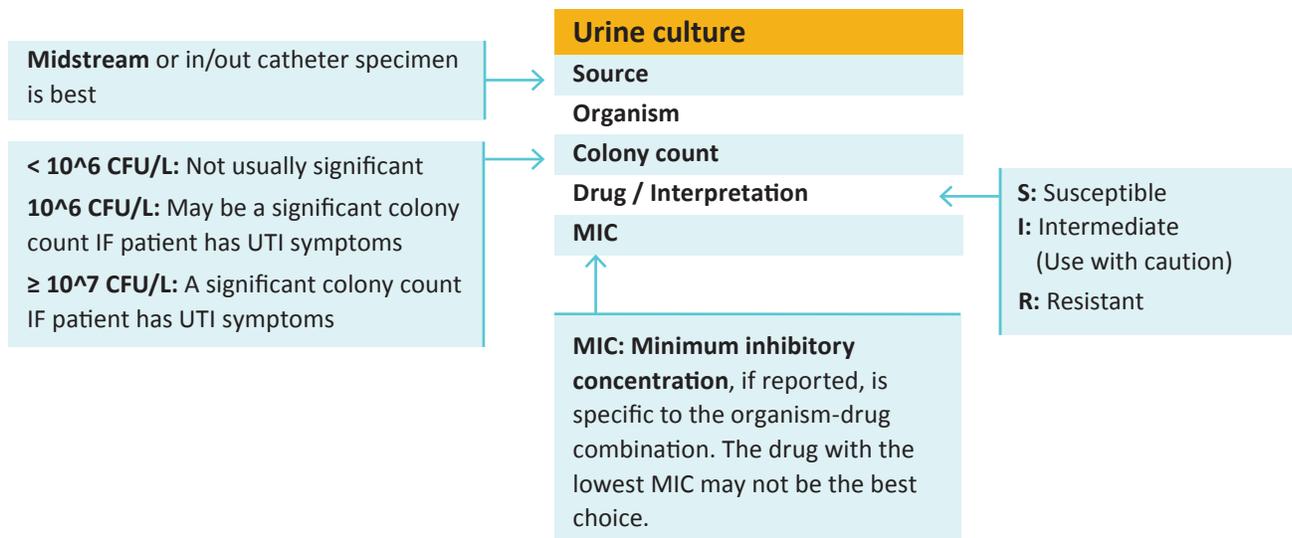
March 8, 2019

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Interpreting Urine Test Results Acute Care | Adults



Select the agent most appropriate for the patient and with the narrowest spectrum of activity



March 8, 2019

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Urinary Tract Infection (UTI) & Asymptomatic Bacteriuria (ASB)

When to Test for Urine Infections Backgrounder



Do not send

1. **Do not test** for changes in urine colour, cloudiness or smell alone.
2. **Do not test urine for infection in asymptomatic patients**, unless septic, pregnant or undergoing invasive urologic procedure.
3. **Do not test urine** for infection in older adults unless there is a strong clinical suspicion of a UTI.



Wait

1. **Diagnosis of UTI should not be assigned without typical UTI symptoms.**
2. **Non-specific changes in older adults:** weakness, falls, aggression and confusion do not mean that the patient has a UTI.
3. **Individualize care and investigate for other causes of non-specific changes.**
Consider: dehydration, pain, medications, sleep disturbances, constipation, hypoxia, hypoglycemia, environment changes, other infections

Dehydration is the most common cause of non-specific changes.

Cloudy or foul smelling urine is NOT a UTI.

Rehydration (unless fluid restricted) will resolve symptoms in many patients.

Consider clysis, IV fluids and regular fluid “rounds” to increase intake in patients with swallowing or communication difficulties.



Order

Order urinalysis and culture for the following *typical* UTI symptoms in patients without urinary catheters:

Acute dysuria (painful urination). Dysuria alone can justify testing
Or

Temperature >38°C

Plus any new or increased

New or increased frequency, urgency, or incontinence

Flank pain / suprapubic pain

Blood in the urine

Key points

1. Patients with positive urine culture results should NOT be treated with antibiotics unless there are clinical signs of a UTI. Except in pregnancy or prior to invasive urologic procedure.
2. Patients with pyuria and positive urine cultures, and NO UTI symptoms have *asymptomatic bacteriuria* (i.e., bladder colonization), and NOT a UTI.
3. Treating ASB does not prevent UTIs and increases the risk of harm: resistance, adverse and allergic reactions, and *Clostridium difficile* infection.
4. Non-specific changes (e.g. weakness, lethargy, falls, confusion, aggression) in older adults are not indicative of a UTI without typical symptoms.

Resources & references: www.albertahealthservices.ca/info/Page15718.aspx
email: urinedxstewardship@ahs.ca

March 8, 2019

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Alberta Health
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Antimicrobial
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Covenant
Health



Physician
Learning
Program



Urinary Infection Testing

Patients with NO catheter



Order

- Acute dysuria** (alone can justify a urine test)
- Or**
- Temperature $>38^{\circ}\text{C}$** or 1.1°C above baseline

Plus any new or increased

- Urinary frequency**
- Urgency**
- Incontinence**
- Flank pain or tenderness**
- Suprapubic pain or tenderness**
- Gross hematuria**



Do not order

Do not order urine tests for

- changes in colour cloudiness or smell alone
- catheter insertion or change

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Assess

- **Weakness, falls, confusion or fever without a focus in older adults**
- **Individualize care:**
 - a. **Investigate** for other causes
 - b. **Dehydration** is a common cause

Hydrate

Encourage increased fluid intake for 24 hrs
Except if fluid restricted

Do NOT treat asymptomatic patients with positive urine cultures unless:

- patient is pregnant, or
- undergoing an invasive urologic procedure

Resources & references

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Antimicrobial
Stewardship Program

