
Lab Dept: Urine/Stool

Test Name: URINALYSIS (UA)

General Information

Lab Order Codes: UA

Synonyms: Urinalysis, Routine

CPT Codes: 81001 - Urinalysis, automated with microscopy
81003 - Urinalysis, automated without microscopy

Test Includes: Bilirubin, blood, clarity, color, glucose, ketones, leukocyte esterase, nitrite, pH, protein, specific gravity, and urobilinogen

Logistics

Test Indications: Useful as a screen for abnormalities of urine; diagnosing and managing renal diseases, urinary tract infections, urinary tract neoplasms, systemic diseases, inflammatory or neoplastic diseases adjacent to the urinary tract and dehydration.

Lab Testing Sections: Urinalysis

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 2 hours

Special Instructions: Send to lab within 30 minutes of collection.

Specimen

Specimen Type: Urine

Container: Urine cup

Draw Volume: Prefer 10 mL urine (Minimum: 1 mL may limit extent of testing)

Processed Volume: Entire volume submitted

Collection: A specimen collected by catheterization is optimal; however, a clean-catch or mid-stream specimen is also acceptable. Random, voided specimens will be accepted, but are the least desirable and are **not** recommended if a urine culture is also being requested. In all cases, a first morning specimen is most desirable. If testing will be delayed for more than one hour, refrigerate upon collection, stable for up to 24 hours.

Special Processing: N/A

Patient Preparation: Collect a clean-catch urine specimen as follows:

Males: Clean glans with soap and water. Rinse area with wet gauze pads. While holding foreskin retracted, begin voiding. After several mL's have passed, collect midstream portion without stopping flow of urine. Place the cap on the cup and **tighten securely**. Refrigerate specimen after collection and promptly forward to the lab.

Females: Thoroughly clean urethral area with soap and water. Rinse area with wet gauze pads. While holding labia apart, begin voiding. After several mL's have passed, collect midstream portion without stopping the flow of urine. Place the cap on the cup and **tighten securely**. Refrigerate specimen after collection and promptly forward to the lab.

Note: Indicate type of specimen (catheterized or void) and time of collection on the label.

Sample Rejection: Contamination with feces; urine in cotton balls; specimen decomposition; bacterial overgrowth; mislabeled or unlabeled specimens; specimens not refrigerated within one hour of collection (verified by the laboratory); specimens >24 hours old

Interpretive

Reference Range:

Urine Chemistries:	
Blood:	Negative
Bilirubin:	Negative
Clarity:	Clear to slightly hazy
Color:	Light yellow to amber
Glucose:	Negative
Ketones:	Negative
Leukocyte esterase:	Negative
Nitrite:	Negative

pH:	5 - 8 pH units	
Protein:	Negative	
Specific gravity:	0 – 1 yr:	1.002 – 1.006
	>1 year:	1.001 – 1.030
Urobilinogen:	0.1 – 1.0 Ehrlich Units	
Microscopic:		
RBC:	0 – 3 /HPF	
WBC:	0 – 5 /HPF	
Epithelial cells:	Few (Squamous Only)	
Casts:	0 - 2 hyaline casts/LPF	
Crystals:	Few Calcium oxalate; few amorphous urates or phosphates	
Mucus:	None to slight	
Bacteria:	None to few/hpf (none for catheterized specimens)	
Yeast:	None	

Critical Values:

N/A

Limitations:

Insufficient volume, <1 mL, may limit the extent of procedures performed. Metabolites of Pyridium® may interfere with the dipstick reactions by producing color interference. High Vitamin C intake may cause an underestimate of glucosuria, or a false-negative nitrate test. Survival of WBC's is decreased by low osmolality, alkalinity, and lack of refrigeration. Formed elements in the urine including casts disintegrate rapidly; therefore the specimen should be analyzed as soon as possible after collection. Specific gravity is affected by glucosuria, mannitol infusion, or prior administration of iodinated contrast material for radiologic studies. False-positive tests for protein can also be due to contamination of the urine by an ammonium-containing cleansing solution.

Because the pH of freshly excreted urine does not reach a pH of 9 in normal or abnormal conditions, a pH of 9.0 is associated with an improperly preserved specimen and indicates that a fresh specimen should be obtained to ensure validity of the results. If a pH is found to be above 9.0, the follow comment will be appended to the result, "Specimen quality is questionable due to high pH, suggest recollect."

Methodology:

Multistix® SG and light microscopy

References:

Howaritz PJ, et al (1977) Timeliness of Urinalysis, Arch Path Lab Medicine, Vol 121: 667-671

Strasinger S (1989) Urinalysis and Body Fluids 2nd ed, FA Davis Company

Brunzel N (1994) Urine and Body Fluid Analysis, WB Saunders Company

Ringsrud K, et al (1995) Urinalysis and Body Fluids: A Color Text and Atlas, Mosby

Updates:

1/26/2006: Preferred volume changed from 5 mL to 10 mL.

6/13/2012: Reference range update. Expanded ages and upper limit for ≥1 year. Upper limit previously listed as 1.035.

9/23/2015: Updated reference ranges for Ur Specific Gravity, Ur WBC, Ur RBC, Epithelial cells.

4/3/2019: Specimens with pH >9.0 will be resulted with comment, specimen stability info updated, specimens >24 hrs old will be rejected.