URINALYSIS MANUAL PROCEDURE

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# MANUAL DIPSTICK ANALYSIS

## Indications for Manual Testing

Perform manual dipstick analysis only when:

* • CLINITEK Novus is out of service
* • Emergency backup testing is required
* • Confirmation of automated results is needed
* • Special circumstances as directed by supervisor

## Materials Required

* • Multistix 10 SG or equivalent reagent strips
* • Fresh urine specimen (well-mixed)
* • Timer or stopwatch
* • Color comparison chart (from reagent strip bottle)
* • Clean, dry container if transfer is needed
* • Absorbent paper

## Pre-Analytical Considerations

**IMPORTANT: Check reagent strip expiration date before use. Do not use expired strips.**

* • Store reagent strips in original container at room temperature (15-30°C)
* • Keep container tightly closed when not in use
* • Do not remove desiccant from bottle
* • Do not touch test areas with fingers
* • Specimen should be at room temperature before testing

## Procedure

1. Specimen Preparation

* • Mix specimen gently but thoroughly by inverting container 8-10 times
* • Do not centrifuge specimen before chemical testing
* • Test within 2 hours of collection if kept at room temperature

2. Remove Reagent Strip

* • Remove one strip from container
* • Immediately replace cap tightly
* • Do not remove strip until ready to test

3. Immerse Strip

* • Completely immerse all reagent areas in fresh, well-mixed urine
* • Remove immediately - do not leave strip in urine

4. Remove Excess Urine

* • While removing, run edge of strip against rim of container
* • Turn strip on its side and tap on absorbent paper
* • This prevents reagents from running together

5. Begin Timing

* • Start timing immediately after removing excess urine
* • Hold strip horizontal during entire read time
* • Do not allow reagent areas to touch anything

6. Read Results

* • Compare each test pad to corresponding color blocks on bottle label
* • Read at exact times specified for each test
* • Read in good lighting conditions
* • Record results immediately

## Reading Times and Interpretation

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| Test Parameter | Reading Time | Normal Range | Clinical Significance |
| Glucose | 30 seconds | Negative | Screens for diabetes mellitus, renal glycosuria |
| Bilirubin | 30 seconds | Negative | Liver disease, biliary obstruction |
| Ketone | 40 seconds | Negative | Diabetic ketoacidosis, starvation, vomiting |
| Specific Gravity | 45 seconds | 1.003-1.030 | Kidney concentrating ability, hydration status |
| Blood | 60 seconds | Negative | Hematuria, hemoglobinuria, myoglobinuria |
| pH | 60 seconds | 4.5-8.0 | Acid-base balance, UTI, renal stones |
| Protein | 60 seconds | Negative-Trace | Renal disease, pre-eclampsia, multiple myeloma |
| Urobilinogen | 60 seconds | 0.2-1.0 mg/dL | Liver disease, hemolytic disorders |
| Nitrite | 60 seconds | Negative | Bacterial infection (gram-negative) |
| Leukocytes | 120 seconds | Negative | Urinary tract infection, inflammation |

# Quality Assurance for Reagent Strips

## Daily Quality Control

1. Control Testing

* • Test both positive and negative controls each day of use
* • Test new lot numbers before placing in use
* • Document all control results in QC log
* • Controls must be within acceptable ranges before patient testing

2. Visual Inspection

* • Check for discoloration of pads
* • Ensure pads are firmly attached
* • Verify expiration date
* • Note any unusual odor upon opening container