

# URINE DIPSTICK ANALYSIS WITH MULTISTIX GP

(\*refer to manufacturer's instructions if using an alternative dipstick)

You are reminded that dipsticks should only be used as an aid to diagnosis in symptomatic, non-catheterised females.

Should you Dipstick?	SIGN guidance no. 160
Does patient have 2 or more of key diagnostic signs/symptoms?	If answer is yes, dipstick is required
Does patient have 1 of the key diagnostic signs/symptom?	If answer is yes, do NOT dipstick, provide selfcare advice and safety net

## Instructions for using dipsticks (use dipstick only when necessary – see above).

1. Collect fresh urine specimen in a clean, dry container. Mix well immediately before testing. All samples should be midstream. Ideally, the urine must remain in the bladder for about four hours for bacteria to produce nitrites, hence capture of first urine of the day is best but not always practical:

- The patient washes hands and opens the collection cup without touching the inside of the cup
- Clean the urethral area with an antiseptic
- Patient should be advised not to touch the cup to the urethra or any skin when collecting the sample
- If the container/sample becomes contaminated with faeces, pubic hair or other substances, then a new collection cup/sample needs to be used.
- The patient must then urinate for 5 seconds, move the collection cup into the urine stream, fill the collection cup, remove the cup and continue urinating, making sure that that no skin aside from the urethra touches the urine.
- Place the lid on the collection cup.

2. Remove one strip from the bottle of strips and replace the cap. Completely immerse reagent areas of the strip in the urine and remove immediately to avoid dissolving out of reagents.

3. While removing, run the edge of the strip against the rim of the urine container to remove excess urine. Hold the strip in a horizontal position to prevent possible mixing of chemicals from adjacent reagent areas and/or contaminating the hands with urine.

4. Compare reagent areas to corresponding colour chart on the bottle label at the time specified. Hold strip close to colour blocks and match carefully. Avoid laying the strip directly on the colour chart, as this will result in the urine soiling the chart.

### PROPER READ TIME IS CRITICAL FOR OPTIMAL RESULTS.

The following are specific readings and timings required for diagnosis of UTI.

- Read protein, blood, and nitrite at 60 seconds;
- Read leukocytes at 2 minutes.

Colour changes that occur after 2 minutes are of no diagnostic value.

## Reporting Results

Results are reported in the amounts expressed on the charts on the bottle label.

## Expected Values

### Nitrite

This test relies on the breakdown of urinary nitrates to nitrites, which are not found in normal urine. Many Gram-negative and some Gram-positive bacteria are capable of producing this reaction and a positive test suggests their presence in significant numbers. A negative test does not rule out a UTI.

### Blood

The significance of the trace reaction may vary among patients and clinical judgement is required for assessment in an individual case. Development of green spots or green colour on the reagent area within 60 seconds indicates the need for further investigation.

False positive readings are most often due to contamination with menstrual blood; they are also seen with dehydration which concentrates the number of RBCs produced, and exercise.

False negative readings: captopril, vitamin C, proteinuria, elevated SG, pH less than 5.1 and bacteriuria.

### Protein

Normally no protein is detectable in urine, although a minute amount is excreted by the normal kidney. A colour matching any block greater than trace indicates significant proteinuria. For urine with a high specific gravity, the test area may most closely match the trace colour block even though only normal concentrations of protein are present. Clinical judgement is needed to evaluate the significance of trace results.

### Leukocytes

Normal urine specimens generally yield negative results. Positive results (small or greater) are clinically significant. Trace results observed individually may be of questionable clinical significance. Trace results observed repeatedly may be clinically significant. Positive and repeated trace results indicate the need for further testing of the patient and/or urine specimen.

<b>Interpreting Dipstick Result (where used)</b>	<b>SIGN Guidance and Advice</b>
Positive nitrite (+/- leucocyte, +/- protein) = Probable UTI	If mild symptoms consider watch + wait or if severe symptoms consider immediate Ab
Negative nitrite (+ve leucocyte) = UTI equally likely to other diagnosis	If mild symptoms consider watch + wait or if severe refer to GP or urgent treatment service for possible urine culture
Negative nitrite and leucocyte (+ve protein) = Unlikely UTI	Reassure, give Target UTI leaflet - highlight possible future actions for patient i.e. safety net.
All dipstick tests negative = UTI very unlikely	Reassure, give Target UTI leaflet - highlight possible future actions for patient i.e. safety net.