Hematology & Urinalysis
Specimen Collection and Processing

Hematology Samples

Introduction

In general, the quality of hematology blood samples is dependent upon good blood collection techniques. The four primary factors necessary for a good quality sample are a trauma free collection, free flow of blood, immediate and proper mixing of blood with the anticoagulant, and gentle handling of sample after collection. A fifth factor, patient's predisposition, also is an important but is outside the control of a phlebotomist (blood collector). If one or more of the primary collection factors fail to meet ideal standards, the sample may be compromised. Common interferences that can compromise the results a hematology sample are platelet clumps, fibrin strands, clots (fibrin mess) and hemolysis.

Urinalysis Samples

Introduction

Proper sample collection and immediately delivery or correct storage are essential factors in providing reliable and truly representative urinalysis report.

It is important to realize that the results of a routine urinalysis can be seriously affected by testing delays and improper storage. The following 10 changes may occur in a urine specimen allowed to remain unpreserved at room temperature for longer than 1-hour.

URINE CHANGES AFTER 1-HOURS WHEN STORED AT ROOM TEMPERATURE	
PH	Increased pH from the breakdown of urea to ammonia by urase-producing bacteria
Glucose	Decreased glucose due to glycolysis and bacterial utilization
Ketones	Decreased ketones because they readily evaporate into the atmosphere
Bilirubin	Decreased bilirubin from exposure to light
Urobilinogen	Decreased urobilinogen as a result of its oxidation to urobilin
Nitrite	Increased nitrite due to bacterial reduction of nitrate
Bacteria Yeast	Increased bacteria and/or yeast
Turbidity	Increased turbidity caused by bacterial growth and possible precipitation of amorphous material
Red Blood Cells (RBC's)	Disintegration of RBC's, particularly in dilute alkaline urine
Casts	Disintegration of casts, particularly in dilute alkaline urine
Color	Changes in color due to oxidation or reduction of metabolites