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URINE TESTING

URINE: GENERAL INFORMATION

Urine is a fluid formed and excreted by the kidneys, passed through the ureters, stored in the bladder, and discharged through the urethra.

The kidneys filter about 15 gallons of blood per hour and excrete the end products of body metabolism in the form of one to two quarts of urine per day.

The kidneys are highly selective filters that excrete waste products and at the same time preserve vital substances that the body needs. The kidneys regulate the volume, composition and acidity of body fluids. They also regulate the concentration of hydrogen, sodium, potassium, phosphate and other ions in the extracellular fluid.

Composition of urine can vary quite dramatically depending on the time of day, dietary intake, fluid intake, exercise and the metabolic activity of all the cells in the body.

Normal urine has an amber color, a slight acid reaction, a peculiar odor, and a bitter, saline taste. One thousand parts of healthy urine contain about 960 parts of water and 40 parts of solutes consisting of urea, sodium chloride, phosphoric acid, sulfuric acid, uric acid, hippuric acid, leukomaines, urobilin and minerals.

COLLECTION OF URINE SPECIMEN

The first morning urine is usually suggested as this covers the longest time without voiding and the urine is more concentrated and is the most likely to show any abnormal material excreted by the kidneys.

URINE TESTS

The following urine tests are recommended and results should be obtained for use in making nutritional assessments:

Urine pH: This reflects the acid or alkaline condition of the urinary tract.

Optimum range:	5.5 - 6.4
Usual range:	4.0 - 7.5

ELEVATED pH indicates alkaline urine which is a perfect environment for bacteria and yeast infections. It also suggests a loss of minerals.

LOW pH indicates higher acidity in the urine. This condition can be reversed by avoiding red meats and getting more exercise.

Specific Gravity: This is a function of water consumption and kidney excretion. It should be within the optimum if liquid balance is being maintained.

Optimum range:	1.010 - 1.020
Usual range:	1.003 - 1.030

ELEVATED U.S.G. suggests too little liquid intake and dehydration. The exhaustive phase of stress to the kidneys will also raise the specific gravity of the urine.

LOW U.S.G. indicates excessive kidney function usually due to a low level of B vitamins or an early adrenal response to stress.

Urine VITAMIN C: Vitamin C in the urine shows that ascorbic acid is being excreted by the kidneys. There should be a slight spillage of vitamin C into the urine to reflect an adequate level in your body.

A high level of vitamin C indicates that the body is saturated with it. This may be desirable to protect the body under some conditions.

A low level of vitamin C reflects exhaustion of the body's reserves or fast utilization. Either condition necessitates an increase in intake.

Any of the following found in the urine is considered abnormal. They can, however, reflect the body's ability to excrete harmful substances in an attempt to maintain homeostasis.

Urine BILIRUBIN: indicates a malfunction of the liver and subsequent excretion by the kidneys. In healthy people no bilirubin should be present in the urine.

The presence of BILIRUBIN suggests stress on the liver or gallbladder and requires specific support for these organs.

Urine BLOOD: indicates possible tissue trauma from kidney stones or infection, bladder infection or bleeding in the urinary tract. Blood will, of course, be present during a woman's menses.

The presence of blood suggests kidney or bladder infection or tissue trauma from stones.

Urine GLUCOSE: is seen in uncontrolled diabetes and when kidney disease is present.

The presence of glucose suggests diabetes or severe kidney stress such as that which occurs during pregnancy.

Urine INDICAN: indicates the relative degree of protein putrification in the intestinal tract. The presence of any significant amount of this substance indicates a need for improved protein digestion. Foul gas usually is associated with any amount above + 1 or positive.

The presence of indican suggests poor protein digestion and requires gastric analysis to determine the cause. Excessive protein can lead to this.

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Urine KETONES: are found in fasting or diabetes people.

The presence of ketones suggest diabetes or prolonged fasting.
Urine NITROGEN: indicates the body is tearing down cellular protein and using it for energy.

The presence of nitrogen indicates the body is tearing down protein in cells and using them for energy. This is often seen during fad dieting or metabolic imbalance.

Urine PROTEIN: reveals a kidney malfunction.

The presence of protein suggests failure of the kidneys to spare blood albumin. This is seen in kidney failure, chronic infection and reaction to stress.

Urine UROBILINOGEN: The absence of urobilinogen is consistent with health.

The presence of urobilinogen indicates kidney and liver malfunction, often, evidenced by jaundice. It may also indicate hemolytic anemias (those destructive of red blood cells). This condition is serious, and requires immediate discovery and treatment of its cause.

DISCLAIMERS

This information is reference material and considers only the urine as it is used in nutritional assessment. It is not intended to diagnose disease or suggest therapy for any disease. Diagnosis and treatment should be made by a licensed physician taking into consideration all aspects of laboratory results, physical examination findings and patient history.

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