Bryce Lund, MD

Dr. Lund received his medical degree as well as Internal Medicine residency training through the University of Nebraska Medical Center. He subsequently completed a fellowship in Nephrology at University of Iowa. He now provides Nephrology services at the Fremont Area Medical Center and surrounding communities.

The mission of the Nebraska Kidney Association is to improve the lives of all Nebraskans through advocacy, education, early disease detection and patient services.

For additional information on the programs and services of the Nebraska Kidney Association, please call 402.932.7200 or NE Toll Free: 800.642.1255. or visit our website: www.kidneyne.org E-mail us at: nkaoffice@kidneyne.org

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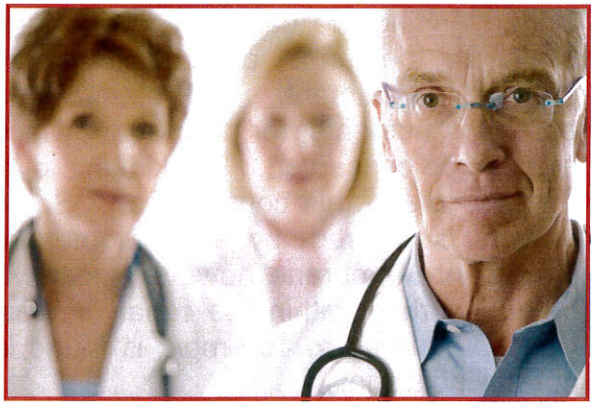
Urine Tests for Kidney Disease

Doctor to Doctor

Urine Tests for Kidney Disease



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This newsletter made possible by a grant from the Gilbert & Martha Hitchcock Foundation

Urine Tests for Kidney Disease

Bryce Lund, MD

Individuals with kidney disease or those at risk for developing kidney disease will need urine testing to help with diagnosis and management. Understanding the cause of protein and blood in the urine can help provide effective treatment. Proteins are essential nutrients for the body which need to be conserved. The kidneys play a major role in this conservation. Some protein is filtered by the Glomerular Basement Membrane however most will be reabsorbed within the renal tubules. Urine protein up to 150 mg/d is found in normal individuals.

Using spot urine Protein/Creatinine ratios

If the traditional dipstick UA is positive for protein then further testing will be required to determine the quantitative amount. A 24 hour urine collection can be used to measure proteinuria however a spot urine Protein/Creatinine ratio will provide a close estimate of proteinuria with less burden to the patient. Urine protein greater than 3 grams/day is seen in Nephrotic Syndromes. Other findings in Nephrotic syndromes include the following: Active urinary sediment (dysmorphic red blood cells and red cell casts), edema, hypertension, low albumin, and elevated lipids. Proteinuria of less than 3 grams may accompany many other causes of Chronic Kidney Disease without having these associated findings. Lowering urine protein is an effective way to slow kidney disease. Use of spot urine Protein/Creatinine ratios helps simplify follow up and treatment.

Even lower levels of urine protein, called microalbuminuria, can detect early stages of diabetic kidney disease. Microalbuminuria is referred to as excretion of 30-300 mg/d of albumin. These levels are too small to be detected by routine dipstick and require a specific test for microalbumin.

Proteinuria of any kind can be transient due to stresses on the body such as infections and hospitalizations. Because of this and day to day variability it is recommended to perform at least three separate tests using spot urine samples to confirm persistent proteinuria.

The two types of Hematuria

The pathophysiology of hematuria depends on the anatomic site from which the blood loss has occurred. Blood originating from the kidney is typically referred to as glomerular hematuria. This is frequently from disruption in the glomerulus as can occur with various forms of glomerulonephritis such as Lupus, IgA nephropathy, Wegener's glomerulonephritis, and many others. Frequently the urinary findings in these cases will show dysmorphic red blood cells such as shistocytes and RBC casts. Significant proteinuria may also be present depending on the disease.

Hematuria without proteinuria or casts is referred to as isolated hematuria and is frequently from the lower urinary tract. These RBC are typically not dysmorphic when seen on microscopy. Tumors, kidney stones, and infections are frequent causes for this type of hematuria.

FOR MORE INFORMATION
Contact Dr. Lund at 402.727.5863 or via e-mail at office@nephrologycare.net