



Understanding Laboratory Values for Persons with Chronic Kidney Disease/Not on Dialysis: What It Means

When kidney function is reduced, certain substances begin to build up in the bloodstream. Blood and urine tests will help the doctor tell how well your kidneys are working. The following are common tests used to measure your kidney function:

1. **Glomerular Filtration Rate (GFR):** This blood test gives the best number to tell you how well your kidneys are working. It is like a percentage of your kidney function. For example, a GFR of 30 means you have 30% of the normal kidney function. The GFR gives your “stage” of Kidney Disease. Higher GFR numbers mean your kidneys are working better. Lower GFR numbers means that your kidneys are not working as well.

There are five stages of CKD based on GFR:

- **Stage 1:** GFR is 90 or higher. There may be slight kidney damage.
- **Stage 2:** GFR is 60-90. There is a mild decrease in kidney function.
- **Stage 3:** GFR is 30-60. Moderate decrease in kidney function.
- **Stage 4:** GFR is 15-30. There is severe decrease in kidney function.
- **Stage 5:** GFR is 15 or less. This is considered kidney disease. Treatment such as dialysis or a kidney transplant is necessary to sustain life.

2. **Creatinine:** This blood test measures the waste products of your muscles that are gotten rid of (eliminated) by the kidneys. When kidney function is lower, the creatinine number goes up because waste products are building up in your blood.

**It is important to know your numbers (GFR and creatinine) and to let any doctors and nurses know that you have kidney disease if you go to an emergency room (ER) or to a new doctor.

3. **Blood Urea Nitrogen (BUN):** Urea is a waste product from protein that is eliminated by the kidneys. When kidney function is lower, the BUN number goes up because these waste products are building up in your blood.
4. **Blood Electrolyte tests:** also known as Blood Chemistries. These substances (chemicals) are normally filtered out of the blood by the kidneys. Too high or too low levels may be due to lower kidney function. Electrolyte (chemistry) testing may include potassium, sodium, phosphorus, calcium and magnesium levels.

5. **Hemoglobin:** This blood test measures the amount of red blood cells (RBCs) in your blood. They carry oxygen (or energy) to your body. The kidneys usually make a substance (hormone) called erythropoietin (EPO) that tells your body to make red blood cells. When your kidneys are not working well, there is less of this hormone and your hemoglobin may become low. If your hemoglobin is low, you may feel more tired or have less energy than usual.

6. **Urine Dipstick:** This test on your urine tells if there is any protein present in the urine. Protein in the urine (proteinuria) may indicate that something is wrong with the kidneys' ability to filter the blood properly. Many diseases can cause proteinuria, such as diabetes and hypertension.