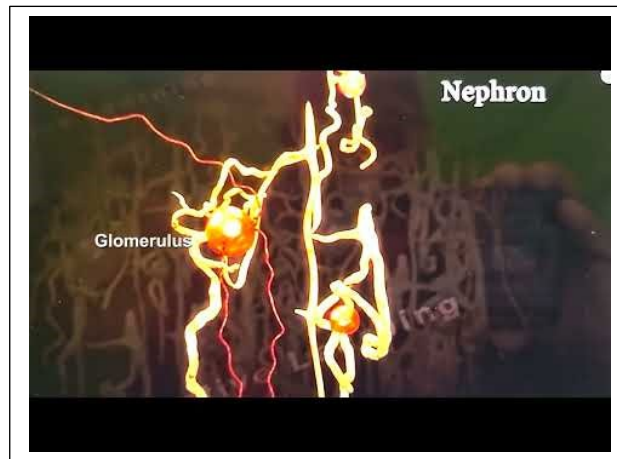


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<https://youtu.be/LwqAWeBCJzA>

## What is eGFR (estimated Glomerular Filtration Rate)

Transcript:

What is its significance

Why should you know about it?

*Glomerular filtration rate (eGFR) is a measure your doctor can take of how well your kidneys work. You can improve your GFR and kidney function by looking at your lifestyle, diet, and medications and making specific changes.*

This video talk compiled by me is a critical topic and all viewers over 60 years must view, as the kidneys tend to deteriorate and lead to irreversible chronic kidney disease with failure through neglect and unawareness, terminating in dialysis and kidney transplant.

Before discussing eGFR, let us find out what a glomerulus is and its functions. The renal artery enters the kidneys and forms tiny clusters of looping blood vessels. Each group is called the glomerulus. There are approximately 1 million glomeruli, or filters, in each kidney.

Each kidney is made up of about a million filtering units called nephrons. Each nephron includes a filter called the glomerulus and a tubule.

The primary function of the glomerulus is to filter plasma to produce glomerular filtrate, which passes down the length of the nephron tubules to form urine.

Blood enters each glomerulus, filters the unwanted waste products, ions, and glucose into the urine, and the pure blood returns to the circulation.

The glomerular filtration rate measurement comes from the name of the filtering units inside your kidneys, called the glomeruli, as mentioned.

**What is filtered from the blood during glomerular filtration?** The main waste products that are screened in the kidneys from the blood are urea; other materials eliminated

via the kidney include nitrogenous waste products (ammonia, uric acid, urea, creatine, creatinine, sodium, potassium and amino acids), excess quantities of salts and water that may be taken into the body.

If your kidneys are not functioning efficiently, these waste products can accumulate in your blood and make your life most miserable.

### **Glomerular filtration rate eGFR**

Glomerular filtration rate (GFR) is used to check how well the kidneys work, i.e. urine formation. Specifically, it estimates how much blood passes through the glomeruli each minute. Glomeruli are the tiny filters in the kidneys that forms part of the nephron that filter waste from the blood, as mentioned before.

Each kidney is made up of about a million filtering units called nephrons. Each nephron includes a filter called the glomerulus and a tubule. The nephrons work through a two-step process: the glomerulus filters your blood, and the tubule returns needed substances to your blood and removes wastes.

### **What is the relation between creatinine and GFR?**

A normal eGFR should read 60 or more. If your eGFR is less than 60 for three months or more, your kidneys may not be working well.

Creatinine is a waste from normal wear and tears on the body's muscles. Everyone has creatinine in their bloodstream.

### **What happens if creatinine is high?**

High creatinine levels in the blood or urine indicate that the kidneys are not effectively filtering the blood. High creatinine levels are not life-threatening but may indicate a severe health issue, such as chronic kidney disease.

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A routine blood test can measure creatinine levels in your blood.

Factors that raise your creatinine levels include:

certain medications, including some antibiotics and nonsteroidal anti-inflammatory drugs, or NSAIDs

creatine supplements

dietary factors, such as a high intake of protein

strenuous exercise

impaired kidney function.

Low blood flow to the kidney as in renal artery stenosis.

dehydration

If you do vigorous exercise, avoid it for 24 hours before a creatinine blood test.

According to a 2014 study, eating red meat may increase creatinine levels. Red meat is muscle tissue, which naturally contains creatine, and cooking causes the creatine to break down into creatinine. When a person eats the meat, their body absorbs the creatinine, and their levels may rise.

Eating less red meat and fewer fish products may reduce high creatinine levels.

People might try incorporating more vegetable protein sources, such as beans, into their diet.

If the glomerulus — the part of the kidney that filters waste — is damaged or otherwise not working efficiently, a person may have high levels of creatinine in the

blood but low levels in the urine. This indicates that the kidneys are not functioning optimally.

Diseases that can affect kidney function and raise creatinine levels include:

diabetes

tumours

some infections, such as hepatitis B and C, HIV, and syphilis

systemic lupus erythematosus is sometimes called SLE or just “lupus.”

A doctor will recommend treatment if a person has high creatinine levels due to a kidney disorder. Diet and lifestyle changes may also help.

### **eGFR declines with age**

eGFR gets lower with age, even in people without kidney disease. The older you are, the lower your eGFR. The eGFR calculation accounts for the period. At any age, an eGFR below 60 for three months or more indicates kidney disease, as mentioned earlier.

However, we know that GFR physiologically decreases with age, and in adults older than 70 years, values below 60 mL/min/1.73 m<sup>2</sup> could be considered normal.

### **How fast can GFR drop?**

The average drop in the estimated glomerular filtration rate (eGFR) is about one cc per minute per 1.73 meters squared yearly, based on natural ageing. Patients with some forms of kidney disease such as diabetes and glomerulonephritis can drop by 5 to 10 per year.

### **Can you reverse eGFR?**

If the decrease in the estimated glomerular filtration rate (eGFR) is due to acute kidney injury with a sudden reduction in kidney function, this can commonly be reversed. If the kidney disease is due to chronic kidney disease (CKD), the recovery of eGFR is usually not possible.

### **How can you control eGFR?**

Avoid processed foods and choose fresh fruits and vegetables instead. Follow a low-salt diet. Salt should be limited, especially if you have high blood pressure, protein in your urine, swelling, or difficulty breathing. Eating less than 2000 mg a day of sodium is recommended.

Controlling blood pressure is essential. You can manage high blood pressure through exercise, diet, stress reduction, and limiting alcohol, among other lifestyle choices.

Make sure you're not deficient in vitamin D. ...

Metabolic conditions such as diabetes, among others.

### **How is it tested?**

Estimated glomerular filtration of eGFR is calculated using serum creatinine and other factors such as age, race and gender.

The blood sample is sent to a lab. There, the creatinine level in the blood sample is tested. Creatinine is a chemical waste product of creatine. Creatine is the body's chemical to supply energy, mainly to muscles.

The lab specialist combines your blood creatinine level with several other factors to estimate your GFR. Different formulas are used for adults and children. The formula includes some or all of the following:

Age

Blood creatinine measurement

Ethnicity

Sex

Height

Weight

The creatinine clearance test, which involves a 24-hour urine collection, can also estimate kidney function.

Hello viewers, this video talk on eGFR may be a bit confusing, but what you should take home is that it is an important test to check your kidney health. Could you not allow it to drop too fast? When it falls less than 15, you may need dialysis to remove the waste products mentioned from your kidneys.

Exercise daily, keep your BP within the normal range, enjoy a vegetable-based low salt diet, drink plenty of water daily, and control your diabetes, to maintain good kidney functions.

Get your doctor to do blood creatinine levels in your blood and an eGFR test to assess the state of your kidney.

Please stay safe and say goodbye until we meet again.