

Kidney Disease Education

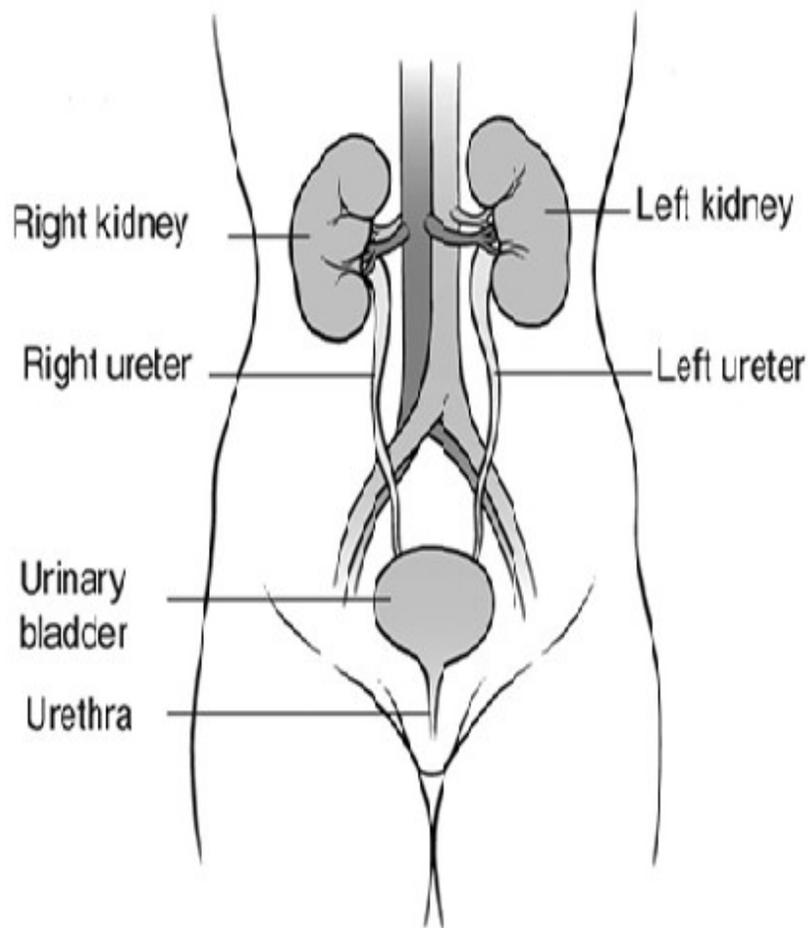
KDE

Education #1 CKD Overview

Today you will learn:

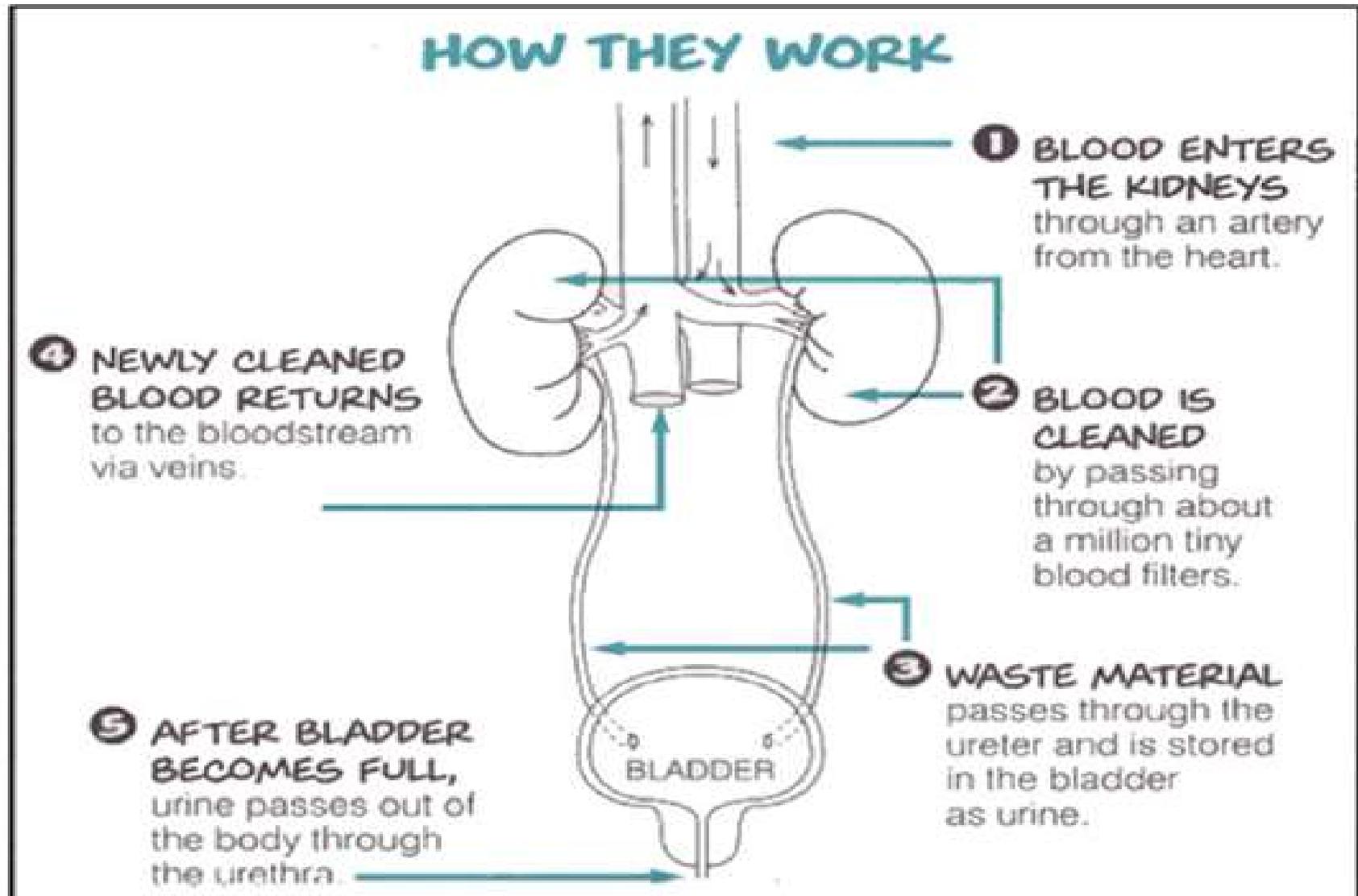
- What chronic kidney disease is
- Why kidneys are important to your health
- Why chronic kidney disease is a serious disease
- What kidney failure is and why treatment for kidney failure is needed to maintain life
- Make informed choices
- Better quality of life

What are your kidneys, and what do they do?



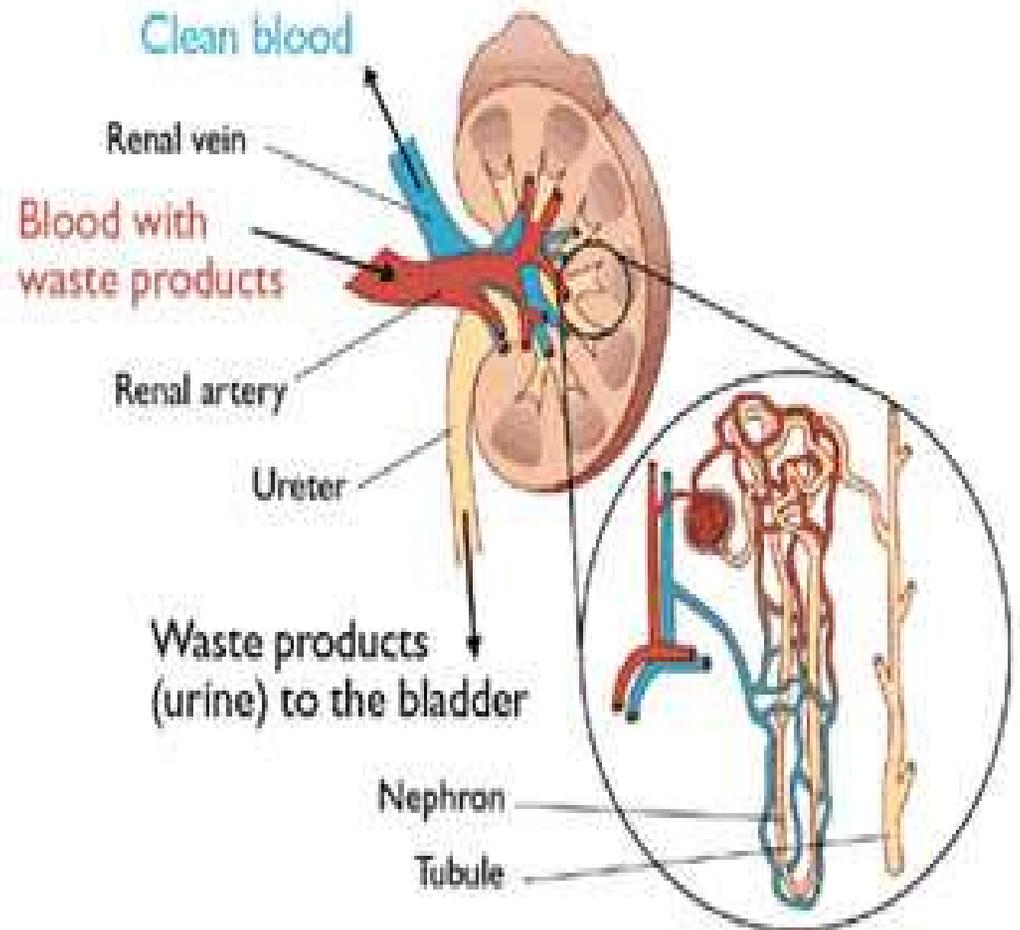
- Kidneys are the filtration system for our bodies
- Kidneys are twin organs shaped like kidney beans
- They are located below your rib cage in the middle of your back
- Each kidney is the size of a closed fist

How Do Kidneys Work?



- Every day a person's kidneys process about 200 quarts of blood to clean out 2 quarts of waste and extra water.
- This waste and extra water becomes urine.
- Kidneys clean the body of waste and keep the body chemistry in balance

How the kidney works



How Do Kidneys Keep You Healthy?

- Remove waste products
- Balance fluids
- Help control blood pressure
- Regulate hormones
- Keep bone healthy
- Balance minerals in the body
- Help make red blood cells

What else do they do besides clean my blood?

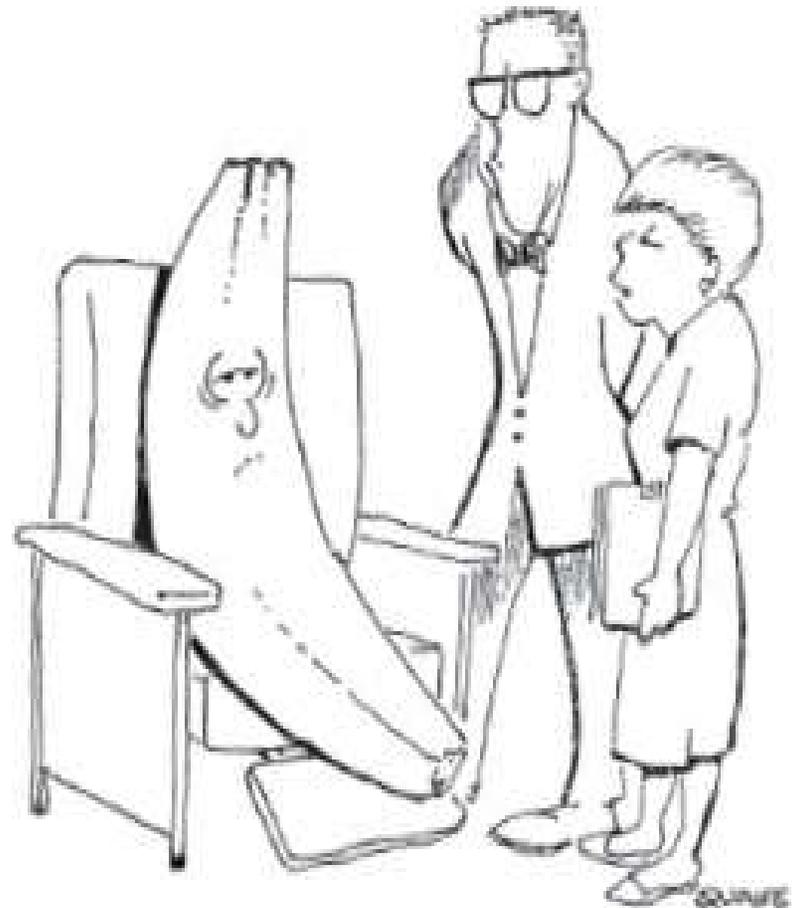
Kidneys release three important hormones

- Erythropoietin (EPO)-which stimulates the bone marrow to make red blood cells
- Renin-regulates blood pressure
- Calcitriol-the active form of vitamin D that help to maintain calcium for strong bones and normal chemical balance of the body.



Kidneys also adjust levels of minerals and other chemicals in the body

- Sodium
- Potassium
- Calcium
- Phosphorus



We're a little concerned about your potassium levels.



What is Chronic Kidney Disease?

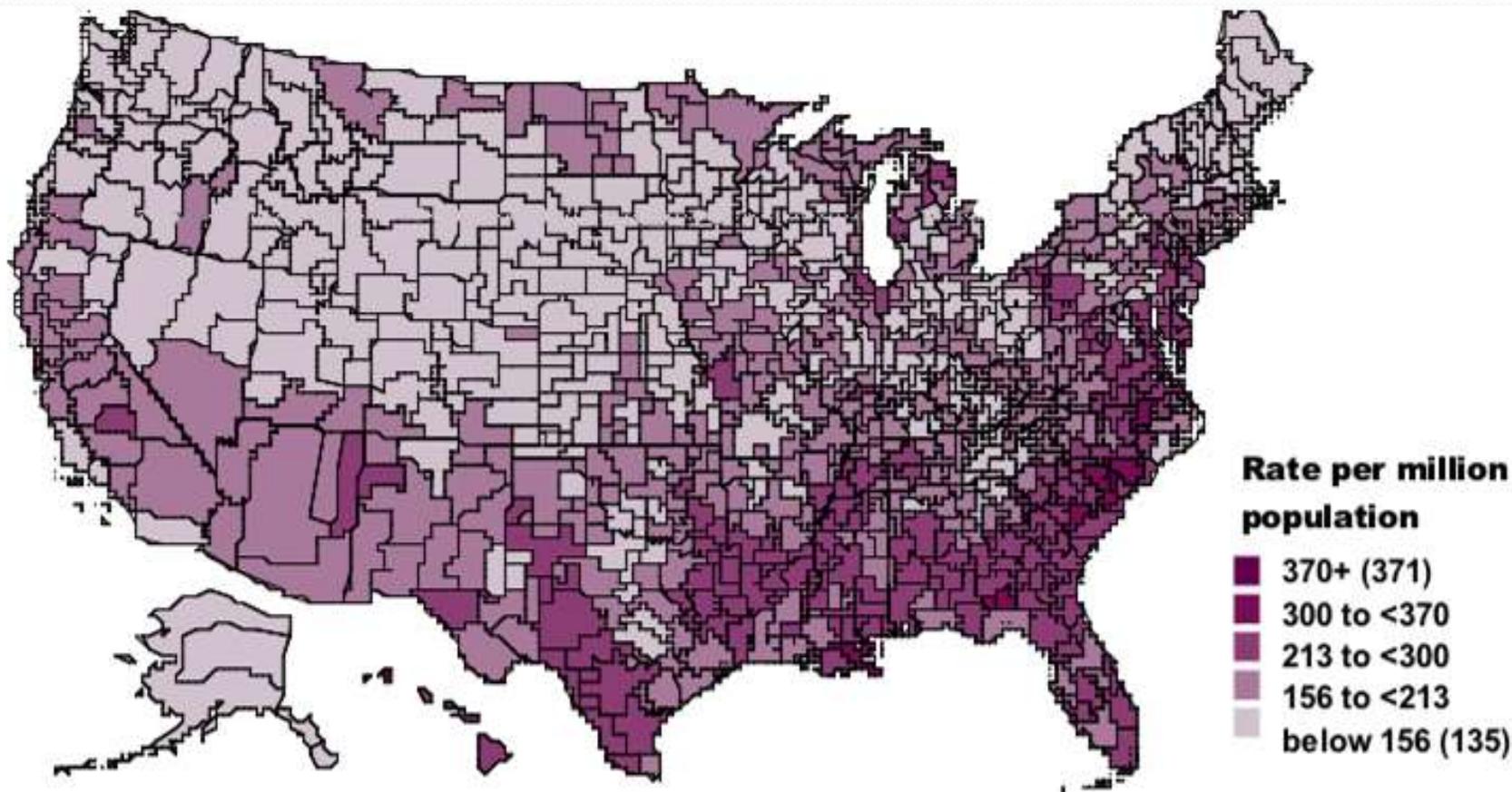


Kidney disease is when your kidneys are losing their ability filter blood or do their jobs well enough to keep you healthy.

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- CKD affects 1 out of 10 people in America
 - CKD has several causes....
 1. Diabetes
 2. High blood pressure
 3. Glomerular diseases –such as auto immune diseases, infection related diseases, etc...
 4. Inherited and congenital disease-
Polycystic
 5. Poisons and trauma to kidneys

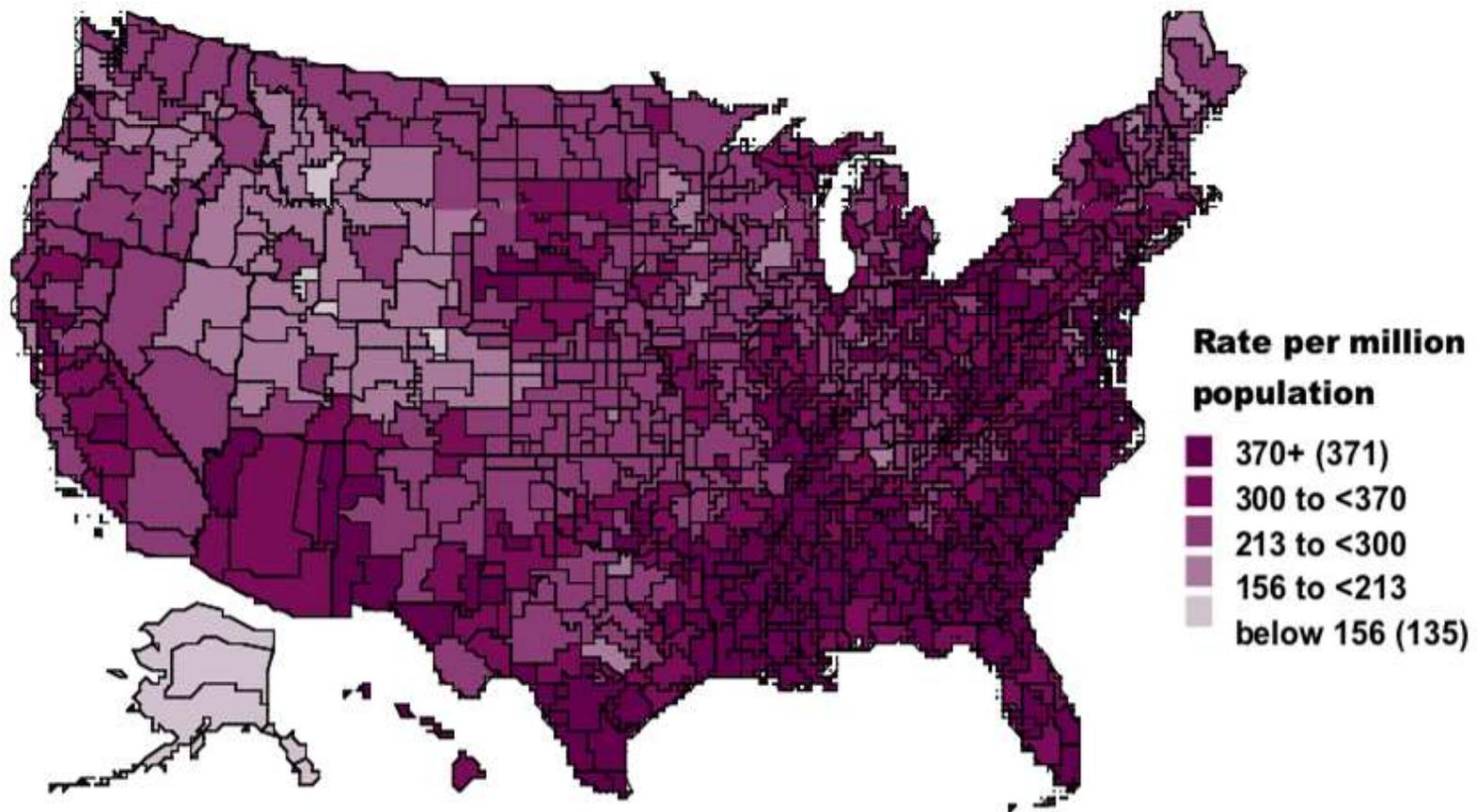
Incidence of Kidney Failure

(per million population, 1990)



Incidence of Kidney Failure

(per million population, 2000)



Who is mostly affected?

- CKD is increasing most rapidly in people ages 65 and older.
- CKD in people ages 65 and older more than doubled between 2000 and 2008



What is Renal Function?

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- Renal function and kidney function mean the same thing
 - Some people born with only one kidney can live completely normal lives
 - People with healthy kidneys have about 100% of their kidney function
 - Serious health problems can occur when renal function starts to decline

Glomerular Filtration Rate

GFR

- Kidney function is measured by GFR
- Normal is 90 or higher
- A formula that calculates your age, race, gender and blood creatinine level
- This helps to estimate how well your kidneys are working



5 Stages of CKD

- Stage 1-GFR 90-Kidney damage with normal GFR
- Stage 2-GFR 60-90-Kidney damage with mild decreased GFR
- Stage 3-GFR 30-60-Moderately decreased GFR
- Stage 4-GFR 15-30-Severely decreased GFR**
- Stage 5-GFR less than 15-kidney failure

Stages of Kidney Disease

Prognosis of CKD by GFR and albuminuria category

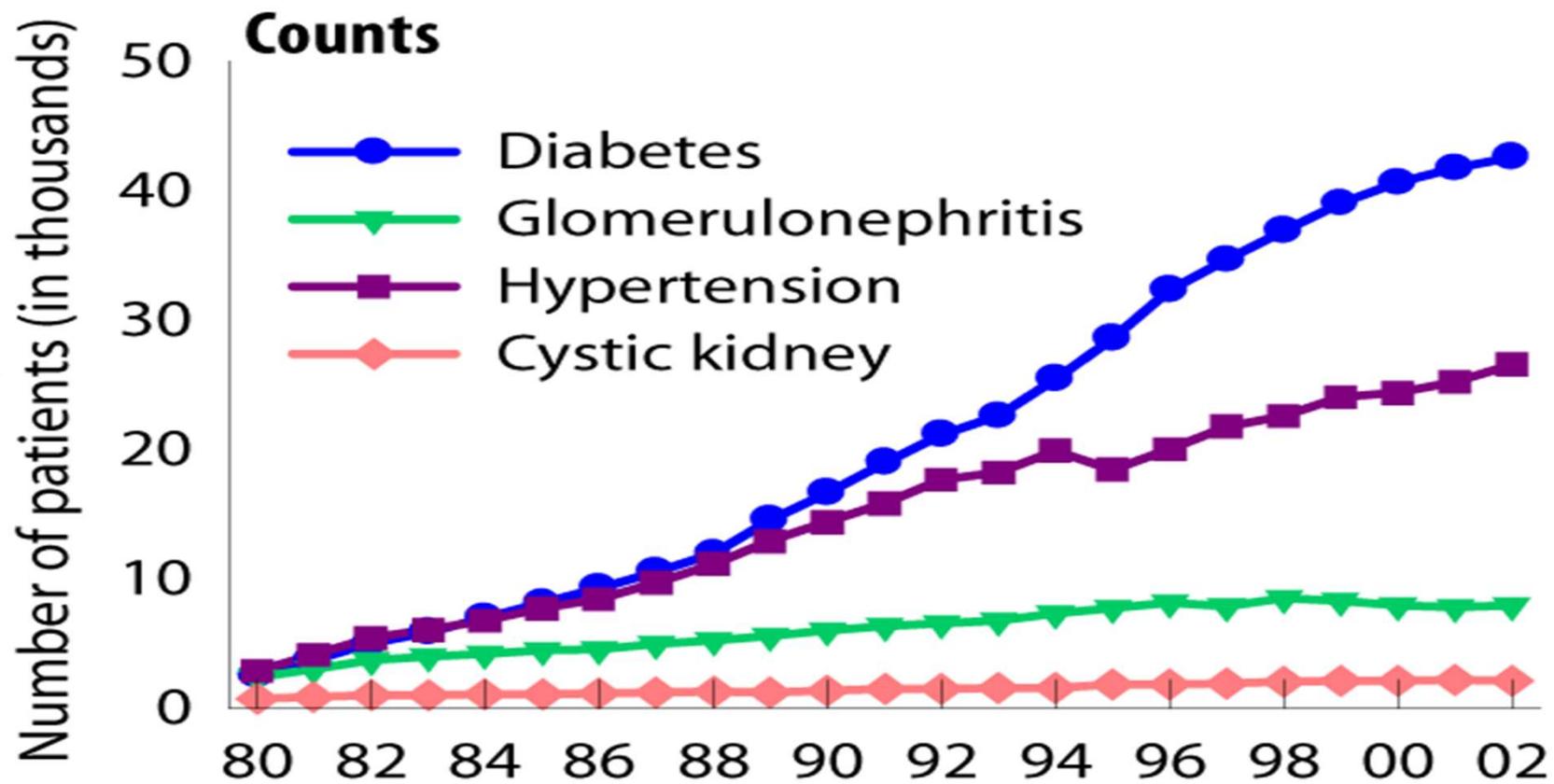
Prognosis of CKD by GFR and Albuminuria Categories: KDIGO 2012

				Persistent albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-300 mg/g 3-30 mg/mmol	>300 mg/g >30 mg/mmol
GFR categories (ml/min/1.73 m ²) Description and range	G1	Normal or high	≥90			
	G2	Mildly decreased	60-89			
	G3a	Mildly to moderately decreased	45-59			
	G3b	Moderately to severely decreased	30-44			
	G4	Severely decreased	15-29			
	G5	Kidney failure	<15			

Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red, very high risk.



Diabetes and hypertension are the leading causes of kidney disease



Why do kidneys fail?

- Most diseases attack the nephrons, or filtering system of the kidneys
- Most kidney diseases and damage happens slowly and silently
- Only after years or decades does the damage show
- Most disease attack **both** kidneys at the same time
- People with a family history of kidney problems are more at risk

Other factors that can affect kidney function



- Dehydration
- Acute viral illness
- Kidney stones
- Certain medications
 - NSAIDS
 - Certain antibiotics
 - IV Contrast

Possible symptoms of uremia (urine in blood)

**Uremic symptoms
(typically begin
with GFR <20
ml/min)**

- Feeling tired or short of breath
- Loss of appetite
- Nausea/vomiting
- Dry itchy skin
- Eating and getting full quickly
- Easily drowsy with poor concentration
- Muscle cramps
- Swollen feet and ankles

Stage 4 CKD

- **Goal of treatment**
 - Slow loss of kidney function
 - Address complications of CKD (anemia, SHPT)
- **Learn**
 - What you can do to keep CKD from getting worse-AND DO IT
 - About options for treatment for kidney failure so you are prepared to choose the one that is best for you