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SATELLITE HEALTHCARE
DIALYSIS · WELLBOUND · RESEARCH

Thanks to our speaker!

- Randy Chen, MD
  - Practicing nephrologist - San Mateo County
  - Has a special interest in slowing progression of CKD and improving the quality of lives in patients with kidney disease.
  - Dr. Chen has won 3 consecutive awards as a medical director for his dialysis unit for outstanding patient care and leadership for Satellite Healthcare.

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Slowing the Progression of Chronic Kidney Disease

Dr. Randy Chen, M.D.

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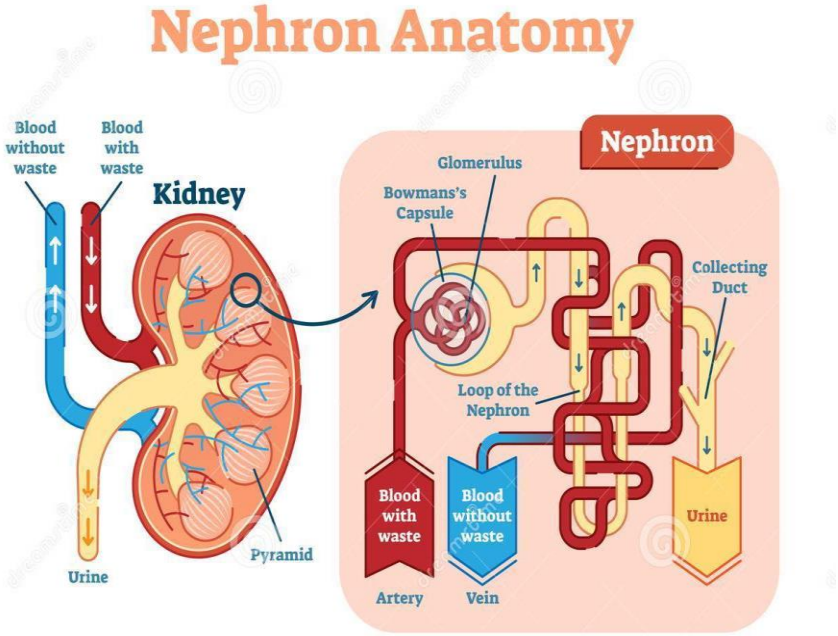
How the Kidneys Work

- The kidneys filter out the blood to produce urine which contains waste products, water and electrolytes.
- The kidneys also make hormones that help with:
  - Blood production
  - Blood pressure regulation and hydration
  - Bone and mineral balance
- The kidneys also regulate acid base, water and electrolyte balance.



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What is Chronic Kidney Disease (CKD)?

- CKD means that there is permanent damage to the kidneys so they cannot work at their full capacity. This is reflected in a decrease in glomerular filtration rate or GFR (estimated by math using the blood creatine level).
- There are 5 stages of CKD. Most patients have stage 3 CKD.
- As the ability of the kidneys to do the job of filtering blood or toxins and producing hormones worsens, health issues may occur.

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Stages of CKD

CKD Classification and Staging

- **Green:** Low risk (LR)
- **Yellow:** Moderate risk (MR)
- **Orange:** High risk (HR)
- **Red:** Very high risk (VHR)

Kidney function stage GFR (ml/min/1.73m²) Description and range				Kidney damage stage Urine albumin/creatinine ratio Description and range		
				A1	A2	A3
				Normal to mild increase <30mg/g	Moderate increase 30-300 mg/g	Severe increase >300mg/g
	G1	Normal or high	≥90	LR	MR	HR
	G2	Mild decrease	60-89	LR	MR	HR
	G3a	Mild to moderate decrease	45-59	MR	HR	VHR
	G3b	Moderate to severe decrease	30-44	HR	VHR	VHR
	G4	Severe decrease	15-29	VHR	VHR	VHR
	G5	Kidney failure	<15	VHR	VHR	VHR

Based on KDIGO staging classification

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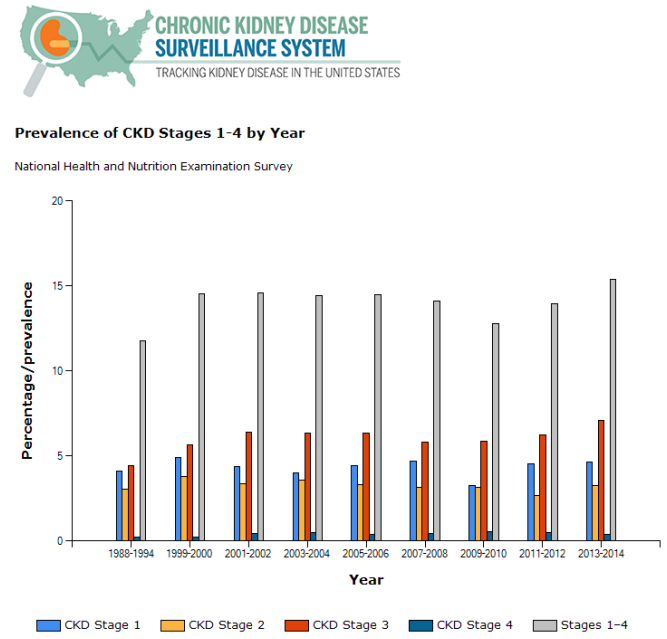
Scope of the Problem

- 14.8% of people in the US have CKD (NHANES data)
- 30 million people are estimated to have CKD
- Nearly half a million patients in the US are on dialysis



Centers for Disease Control and Prevention. Chronic Kidney Disease Surveillance System—United States. website. http://nccd.cdc.gov/CKD.

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What Causes Chronic Kidney Disease?

- Any process that can lead to damage to the kidneys, can lead to CKD.
- **Diabetes mellitus** is the number one cause of CKD in the world.
  - If you have diabetes, there is a high chance you will develop CKD at some point in your life. About 1 in 2 people with DM have CKD.
- **High blood pressure** can lead to damage to the very small arteries of the kidneys and lead to CKD.
- Medications can lead to kidney injury. Ibuprofen and other NSAID's are particularly related to CKD.
- There are specific disease that can cause damage and inflammation directly to the kidneys. Example: Lupus, membranous nephropathy

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How Will I Know if I Have CKD?

- CKD often has no symptoms until the very late stages.
- Many people do not know they have CKD until the later stages.
- Blood and urine tests often reveal CKD.
- The blood creatinine level is used to calculate the rate at which your kidneys are filtering = estimated GFR.
- CKD is most often associated with diabetes and hypertension.

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When Should I Get Worried?

- If your GFR shows a detrimental decline over time, this is a sign that your kidney function is worsening.
- If your diabetes, high blood pressure and other medical problems are not controlled, that may often lead to much faster worsening.
- If the protein in your urine is high or getting higher, that is a bad sign.
- Your doctor will tell you that your kidney function is worse and may refer you to a kidney specialist.

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How Fast Does CKD Progress?

- It depends on the cause and stage.
- Getting blood tests to measure your kidney function (creatinine and GFR) can help your doctor see the trend.
- The poorer the control of you health issues, the faster CKD is likely to progress.
- An example. In late stages, I generally see a 1 mL/min decrease in GFR every month (diabetic nephropathy).
- The creatinine or GFR is like how close the train is from the edge of the cliff. The urine protein level gives an idea of the speed of the train.

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Can I reverse CKD?

- Injury to the kidneys in the setting of CKD is often irreversible.
- Once you lose or scar off the nephron, it cannot grow back.
  - e.g. if you lose a finger, you can't grow that back.
- However, you can prevent further injury to your kidneys and slow or even stop progression of CKD.

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Dietary Recommendations in CKD

- According to one of our lead renal dietitians, follow these steps:
  - Limit salt
  - Limit protein if advised by your physician
  - Protect your heart – eat heart-healthy
  - Maintain blood sugar in a good range
- Dietary management is not only important to help your kidneys but almost all your other medical problems too.

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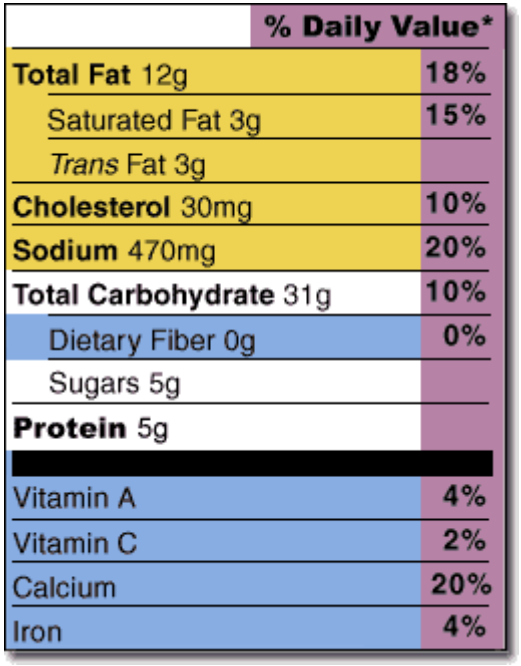
Pay Attention to What You Are Eating

- Read food labels.
- Use smart apps that have food libraries that can track your food.
- Stick to your goals.



	% Daily Value*
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

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Reduce Sodium Intake

- Eat fresh foods. Packaged foods often have added salt.
- Eat less than 2300mg of sodium per day.
- Do not add too much salt to foods; try natural seasonings.
- Read food labels
  - A meal that is more than 20% of Daily Value is HIGH in sodium.
  - A snack that is more than 5% of Daily Value is HIGH in sodium.
- Limit canned foods
  - If eating canned foods, rinse foods to reduce salt.

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Reduce Protein Intake

- Patients with advanced CKD are advised to eat 0.8g/kg a day or less of protein which in most people is about 60 grams.
  - 60 g = about 8 oz (half a pound) or 3 decks of cards
  - 7 grams = 1 ounce
- Build your food plate at home with mostly vegetables (if your doctor has not limited potassium).
- Good sources of protein include: Eggs, Chicken, Fish, Beans and Nuts.

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Cut Back on Unhealthy Fats

- Limit saturated fat that can build in your heart and kidneys.
- Choose lean cuts of meat such as:
  - Poultry without skin
  - Fish
  - Lean ground beef, loin and or round cuts
  - Beans
- Cook meats by grilling, baking or sautéing with olive oil spray.
- Unsaturated fats such as those found in olive oil and nuts should be eaten more frequently than unhealthy fats.

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Watch Your Carbohydrate Intake

- Manage blood sugars with dietary changes, medicines if necessary, and physical activity.
- Limit refined carbohydrates.
  - Avoid/limit desserts, candies, sweetened beverages
- Eat meals at consistent times to avoid spikes in blood glucose and insulin.
- Pay attention to portion size and eating too many starchy foods.

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What About Limiting Potassium and Phosphorous? I read on the internet that I have to do this.

- Don’t always listen to what the internet has to say. Ask your doctor if you need to limit these minerals in your diet.
- Patients with more advanced CKD or other medical problems might need to limit but not always.
- At times, phosphorous containing foods need to be limited (examples: dairy, nuts) but the doctor will decide.
- At times, potassium-containing foods need to be limited (examples: bananas, prunes, OJ) but the doctor will decide.

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Are There Specific Medications that Can Help to Protect My Kidneys?

- Renin-Angiotensin-Aldosterone-System (RAAS) Inhibitors block a hormone system that can worsen kidney injury.
  - Decrease blood pressure inside the kidneys directly
  - ACE-inhibitors, ex. lisinopril
  - Angiotensin-Receptor Blockers or ARBs, ex. Losartan
- General blood pressure lowering medicines

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Blood Pressure Control

- The goal blood pressure in patients with CKD is generally below 130/80.
- Most patients with CKD should be on a RAAS inhibitor.
- Diuretics (water pills) are often helpful in CKD to help control blood pressure as well as water and salt retention.
- Many patients with CKD need several blood pressure medications to get to goal.

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Diabetes and Glucose Control

- Having diabetes mellitus presents a high risk of developing CKD.
- Controlling DM and lowering the damage done by it is crucial in slowing CKD if you have DM.
- Speak with your doctors about ways to use dietary, lifestyle and medication changes to achieve tight control of your diabetes.

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Lower Your Risk of Heart Disease

- CKD is highly associated with heart disease. They both influence each other.
- Major risk factors for heart disease include high BP, DM (insulin resistance), smoking, obesity, hypercholesterolemia.
- Physical activity and exercise can improve heart health.

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Potentially Harmful Medicines

- Be careful with using “over-the-counter” medicines and check with your doctor about their safety for people with CKD.
- Non-steroidal Anti-inflammatory Medications (NSAIDs) such as ibuprofen, high dose aspirin, naproxen, celecoxib.
- Dietary supplements should be used in moderation and caution. They are not tightly regulated.
- Proton-pump inhibitors should be used only as necessary and you should discuss their use with your physicians.

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Some Medications May Need to Be Adjusted

- Dose adjustments in some meds may need to be made if your GFR is not normal. They may accumulate to high levels if not.
- Some meds need to be stopped if your kidney function gets to a certain level as they can be very toxic, ex. Metformin.
- Some meds may start to cause harm to your kidneys if they are not dose adjusted for your GFR. Antibiotics are an example.

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Water and Water pills

- Should I drink more water to help flush my kidneys?
  - Generally not unless you tend to get dehydrated.
- Will water diuretics harm my kidneys?
  - Not permanently generally. Often times they are very necessary.
- You need to work closely with your physicians in terms of water and salt balance if you have CKD.

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Problems That Can Be Caused By CKD

- Hypertension
- Electrolyte and acid-base disorders
- Fluid and salt retention
- Anemia
- Bone disease
- Uremia: Feeling poorly, having no appetite, confusion

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Stage 5 CKD and Dialysis/Transplant

- How will I know if it is time for dialysis or transplant?
- A nephrologist and his or her team can help you prepare for dialysis or transplant.

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What If a Loved One Has CKD?

- CKD is very common and often is a result of other medical problems. Try to understand this.
- Support an improved healthy lifestyle and encourage following medical recommendations.
- Go with them to their appointments.
- Give emotional support. Empathize.

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Living with CKD

- CKD can be treated and slowed
- People can live long and happy lives with CKD
- There is always hope for patients with CKD

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Question and Answer Session

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Join us for our next webinar!

Sagar Nigwekar, MD

Assistant Professor of Medicine
Harvard Medical School

Tips for talking with your doctor

Tuesday, September 25th, 2018 | 1-2 p.m. (EST)

- Tips for talking with your doctor
- Questions you should ask at every visit
- Ways to talk with your doctor about your medicines, procedures, and surgery

Visit KidneyFund.org/webinars to register