Understanding Your Kidney Related Labs

This webinar will start shortly

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Reminders

- All lines are muted
- Ask questions or make comments through the Chat Box
- Written questions will usually be answered at the end of the program
- You will receive the link to the **recording** and **slides** within a week
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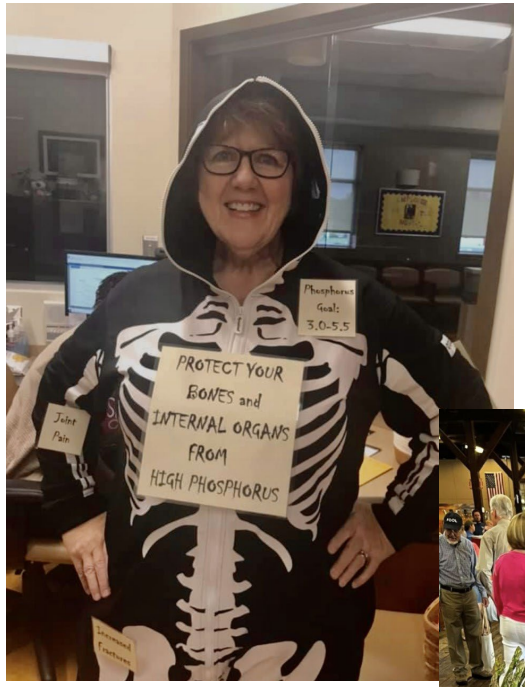
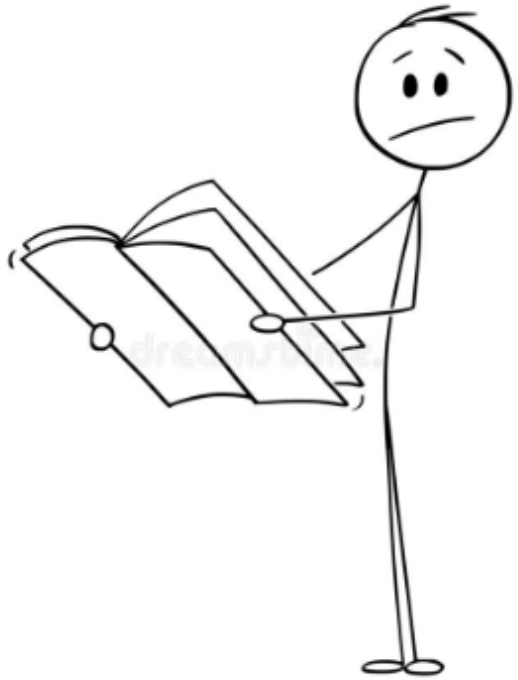
Today's Presenter is Judy Gourley, RDN, LDN



Judy is a Dietitian with Fresenius Kidney Care in South Boston, Virginia. She has worked for 41 years in North Carolina and Virginia in various positions as Director of Nutrition Services at O'Berry Neurological Center, a consultant dietitian for several community group homes, and an acute care dietitian with Sodexo.

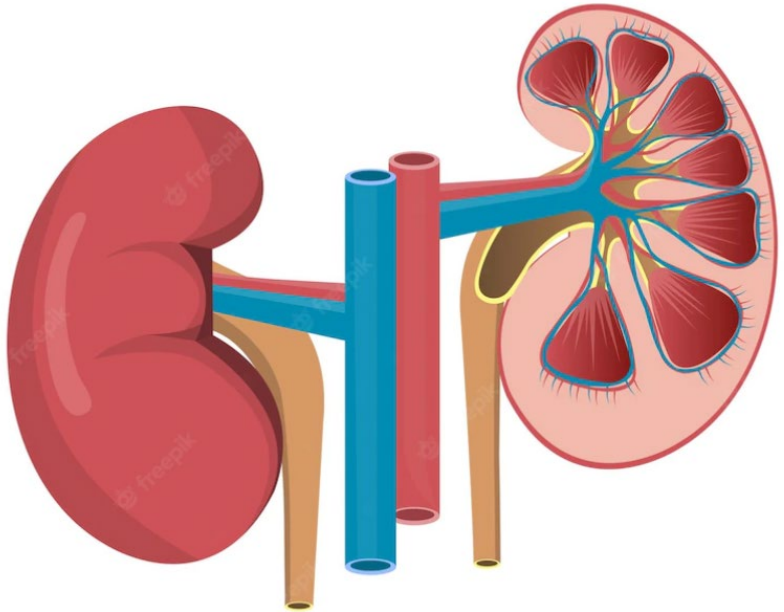
She loves to find creative ways to educate her patients and provide tools to empower them and enable them to make good decisions.

Trying to Understand Kidney Related Labs Why is it important



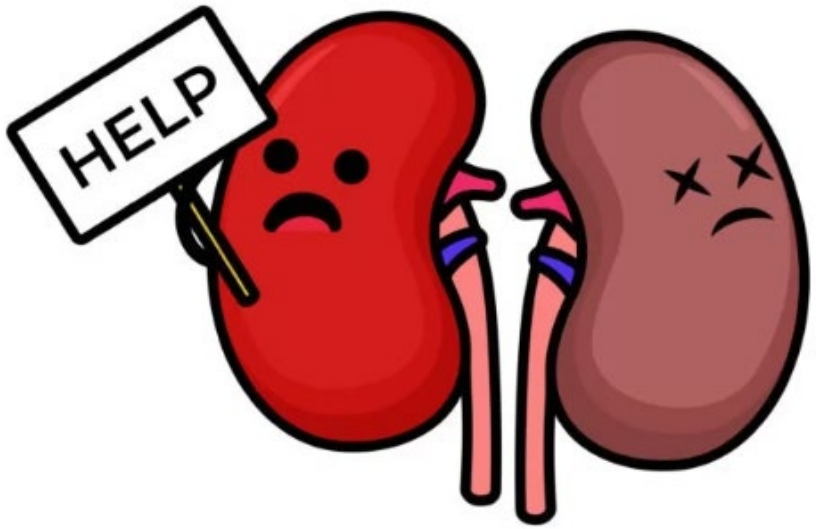
- How do the kidneys affect my labs?
- Why should I know what my lab results are?
- Which labs are important?
- What can I do to improve or keep my labs in goal?

What do your kidneys do?



- Filter waste and removes extra fluid from the blood and help urine to be removed from the body.
- They help:
  - Keep the bones healthy
  - Control blood pressure
  - Make red blood cells

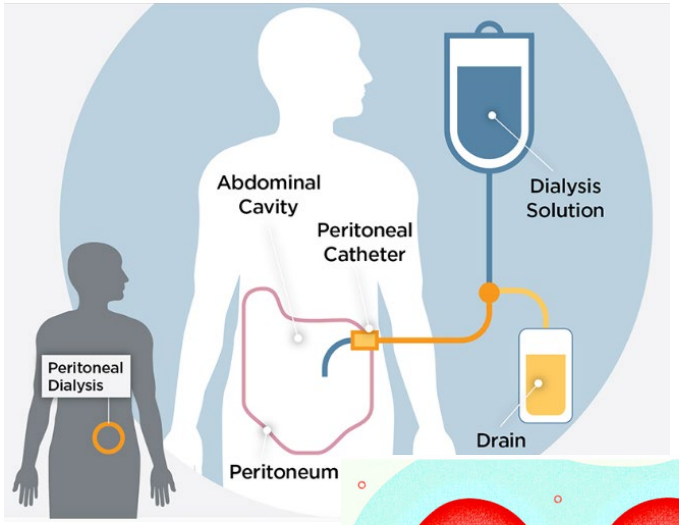
What happens when the kidneys don’t work like they should?

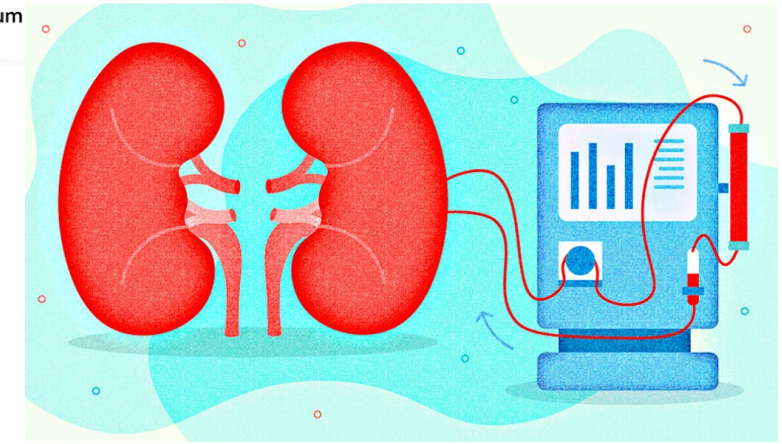


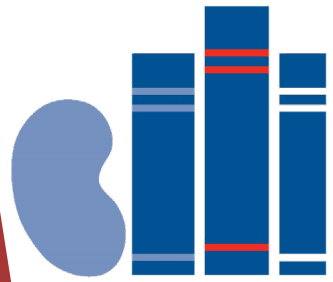
- Damage to your kidneys keeps them from working as they should
- Extra waste and fluid stays in the body because your body can’t get rid of it
- Waste products can affect how you feel and how your body functions
- May develop chronic kidney disease and/or eventually may need dialysis

What impact does Dialysis have on the body and labs?

- Dialysis is a treatment that
  - Can be done at home or incenter
  - Cleans the blood
  - Removes excess fluid from the body that the kidneys are not able to remove
  - Also removes small amounts of healthy items, such as red blood cells, vitamins, and albumin

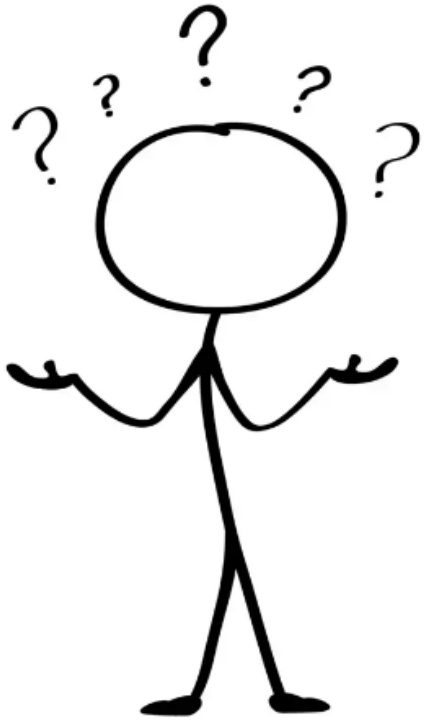






The intestines, kidneys, bones, and parathyroid gland play a role to maintain a balance of minerals in the body. These minerals have specific jobs in our bodies to keep it healthy.

What labs are important to track?

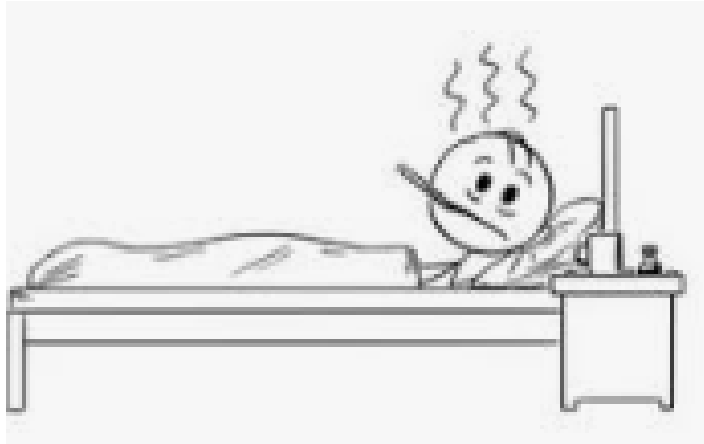


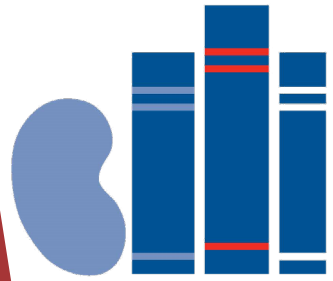
Albumin
Goal: Greater than 4.0gm/dL

- Is a protein made in the liver
- Helps keep you healthy
- Helps you feel strong and prevent muscle loss
- Helps to keep fluids in your bloodstream
- Helps to keep heart and blood vessels healthy
- Carries vitamins and nutrients throughout the body
- Helps you heal faster and stay out of the hospital

Possible causes of a low Albumin

- Inflammation – how your body reacts to an infection, injury or other illness
- Poor nutrition intake – possibly because you don't feel well
- Kidney Issues
- Chronic disease/Critical illness
- Blood loss
- Not enough made by the body
- High fluid intake
- Wounds





<u>Signs of a potential low Albumin</u>

Swelling in your legs, feet, and hands; weakness or exhaustion; nausea or appetite changes; and dry or itchy skin

What can you do to improve your Albumin level?

- Eat good sources of protein such as Eggs, Chicken, Turkey, Fish, Lean Beef and Pork
- Plant based foods such as Soy, Nuts, Dried Beans and Peas and some grains
- Consider adding a Protein Powder or nutritional supplement to diet.
- Maintain good fluid management
- Keep medical appointments
- Talk with your care team

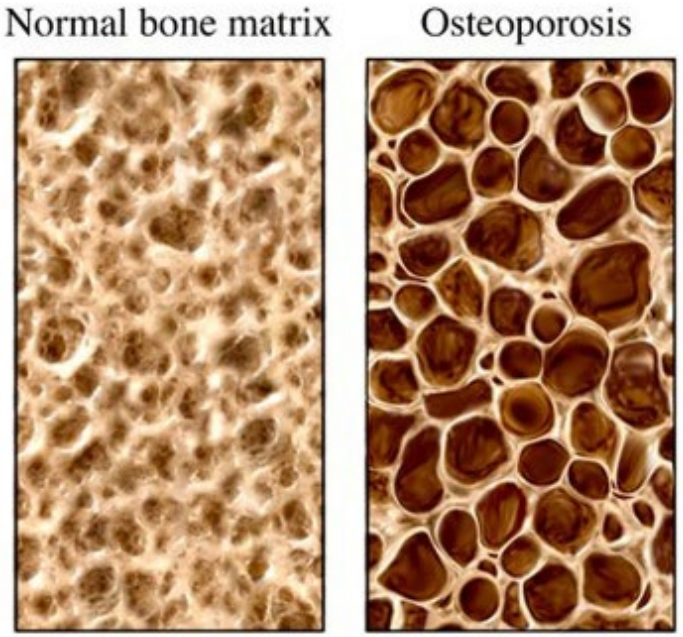
Symptoms of Mineral Bone Disorders

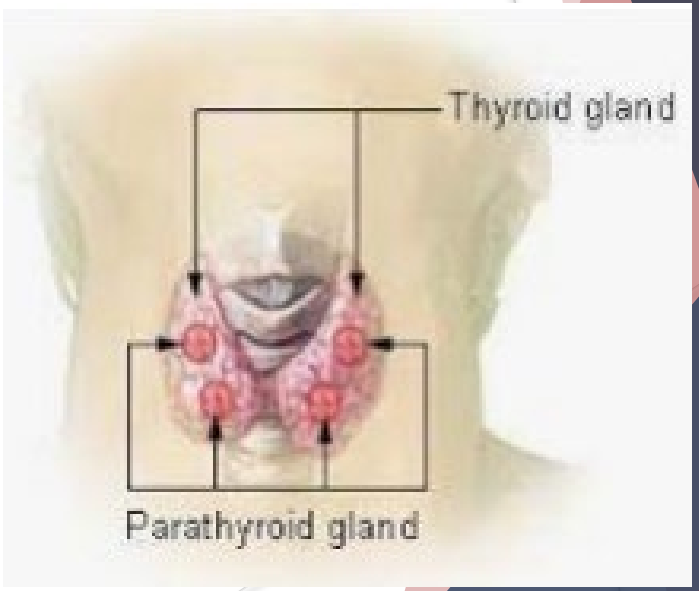
Calcium:
Goal: 8.5-10.0mg/dL

- Calcium in food is absorbed in the intestine.
- It is stored in the bones and used for different body functions.
- Excess calcium is removed in urine and stool.

What happens to calcium levels when my kidneys develop problems?

- Can contribute to weakened bones
- May affect the parathyroid gland which regulates calcium and phosphorus in the body





High Calcium levels

Results when the calcium level in the blood is above normal because the kidneys cannot remove the extra calcium.

Too much calcium in your blood:

1. Can weaken your bones
2. Can create kidney stones
3. Leads to calciphylaxis (moves calcium out of the bones and into blood vessels or tissues and makes them hard)
4. Heart problems

Common Causes of a High Calcium level

- Consuming too much calcium in foods, supplements, or medications
- Some medications
- Elevated parathyroid hormone lab
- Other diseases
- Too much Vitamin D

Calcium

Limit to 1 serving of Dairy Products Daily

Calcium Based “Over The Counter” Medications

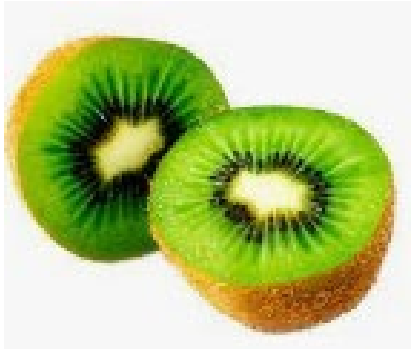
Potassium
Normal Range: 3.5-5.5mEq/L

- A mineral found in many foods that keeps your heartbeat regular and your muscles and nerves working well.
- With kidney disease, kidneys have trouble keeping your potassium level in balance
- If your potassium level is too high or low, your care team can help you choose the right amount of the best fruits and vegetables to maintain a healthy potassium balance.

Foods high in potassium










Phosphorus
Normal Range: 3.0-5.5mg/dL

Phosphorus is a mineral that works with calcium and Vitamin D to keep your bones healthy and strong.

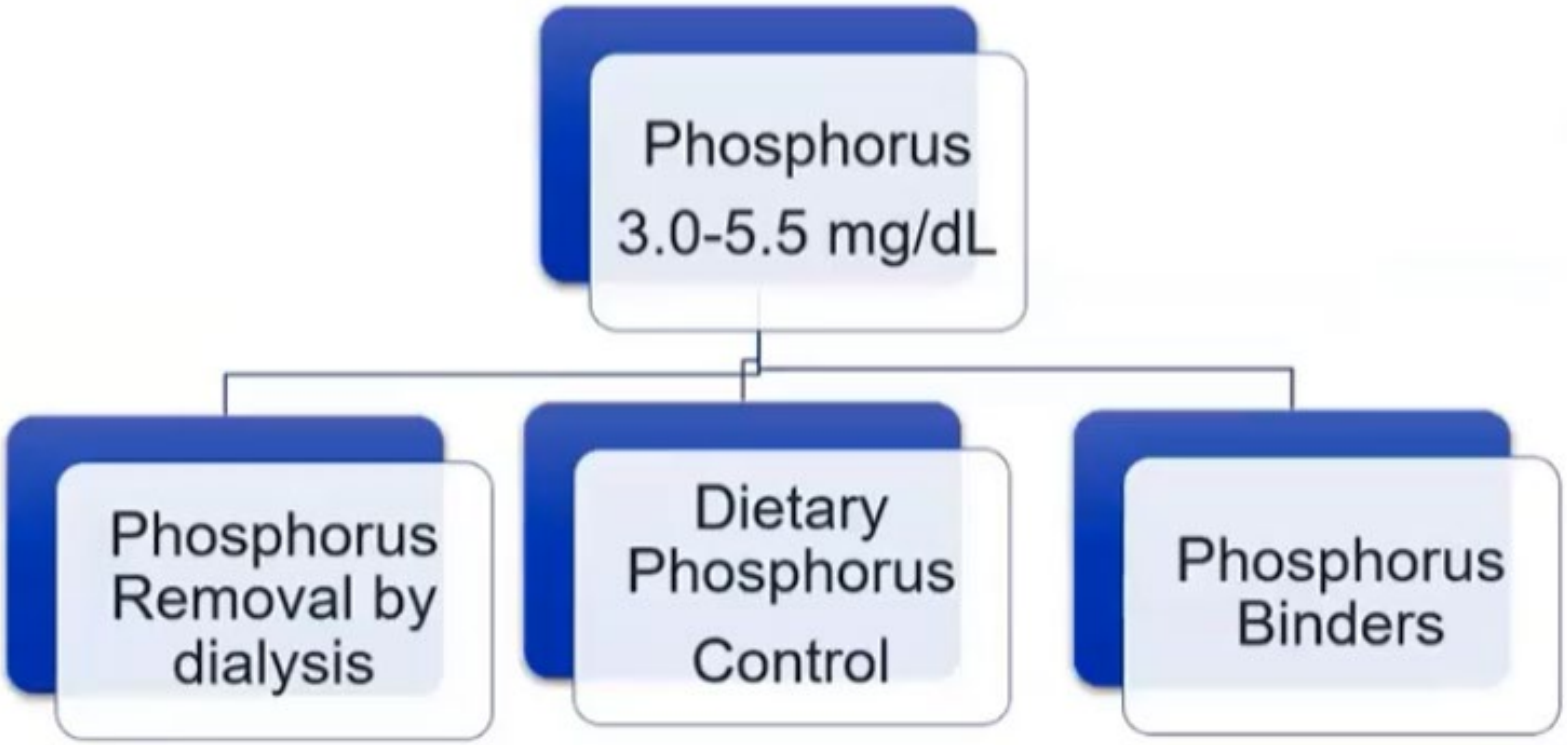
Why may phosphorus become elevated in persons with kidney failure?

- Their diet includes high amounts of phosphorus additives?
- Not able to remove enough?
- Taking phosphorus binders at the wrong time?

ANSWER:

All of the above

Phosphorus Management Components

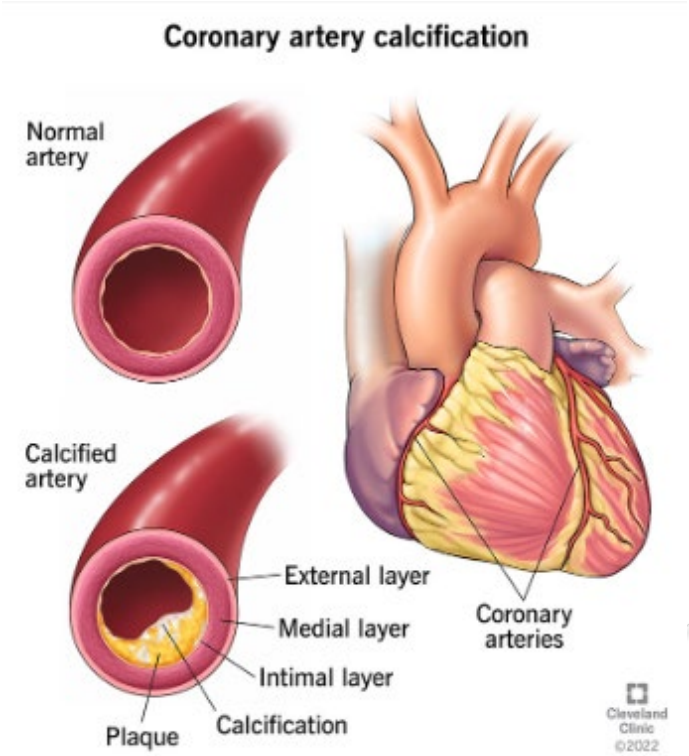


High Phosphorus: greater than 5.5mg/dL

- When kidneys are failing, phosphorus can build up in the blood.
- Approximately 40% of dialysis patients have an elevated phosphorus level.
- If untreated, it can lead to weakened bones, bone and joint pain, itching, nausea, vomiting, fatigue, and vascular calcification.

Vascular calcification

- High phosphorus can cause the calcium to build up inside blood vessels restricting blood flow



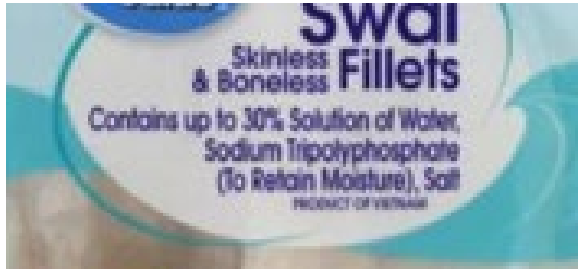
Possible effects of high Phosphorus

- Skin lesions
- Calcification of blood vessels
- Wounds on skin
- Non-healing wounds

Plain X-ray showed extensive diffuse calcification, with some dilatation and tortuosity involving most of the arterial vascular tree of both lower limbs.

Dietary approach to limiting phosphorus intake in the diet:

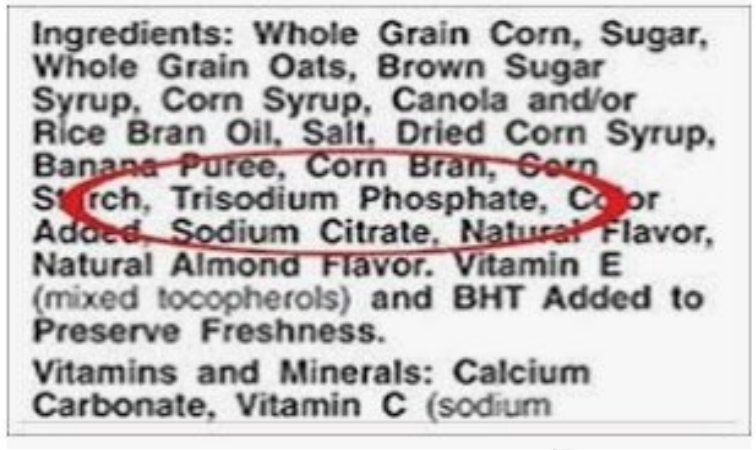
- Choose fresh foods
- Limit processed foods
- Limit dining out
- Choose unenhanced/flavored meats

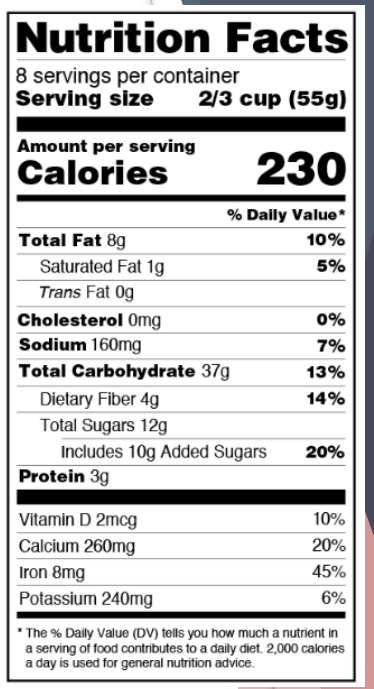


Read the labels and avoid foods with PHOS additives

Look HERE in the ingredient label for the added "PHOS"

DON'T LOOK HERE for phosphorus additives


Ingredients: Whole Grain Corn, Sugar, Whole Grain Oats, Brown Sugar Syrup, Corn Syrup, Canola and/or Rice Bran Oil, Salt, Dried Corn Syrup, Banana Puree, Corn Bran, Corn Starch, Trisodium Phosphate, Color Added, Sodium Citrate, Natural Flavor, Natural Almond Flavor. Vitamin E (mixed tocopherols) and BHT Added to Preserve Freshness.
Vitamins and Minerals: Calcium Carbonate, Vitamin C (sodium



Nutrition Facts

8 servings per container
Serving size 2/3 cup (55g)

Amount per serving
Calories 230

	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 240mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Common High Phosphorus Foods

Types of Phosphorus Binders

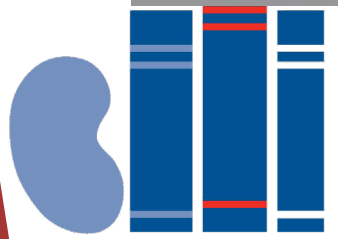
Types of binders:

- Tablets

- Powder

- Chewable

- Calcium Based

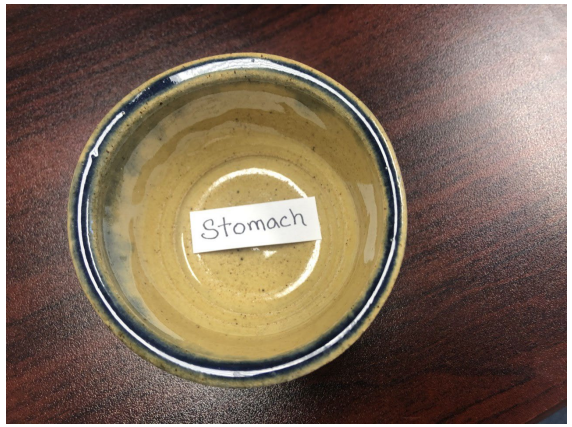


QUESTION: When is the best time to take phosphorus binders?

a. First thing in the morning, on an empty stomach
b. 2 hours after meals
c. Anytime as long as they are taken
d. With each meal or as directed by doctor

ANSWER: D

How should I take my binders?

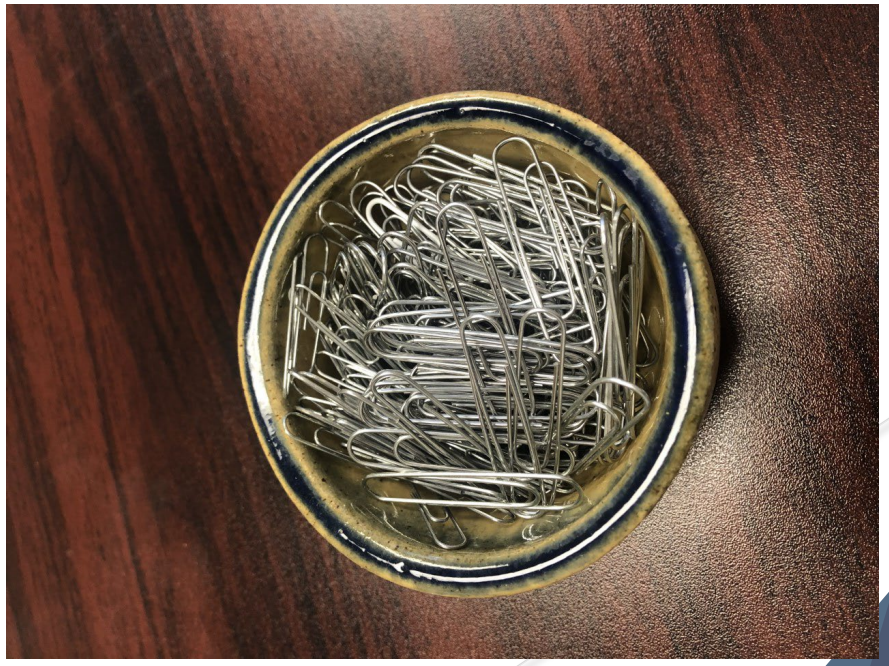


Three players involved are:

- Stomach
- Food eaten
- Phosphorus binder medication

Does it matter when I take my phosphorus binder vs. when I eat?

- Binder taken without food eaten
- Food eaten without taking phosphorus binder medication



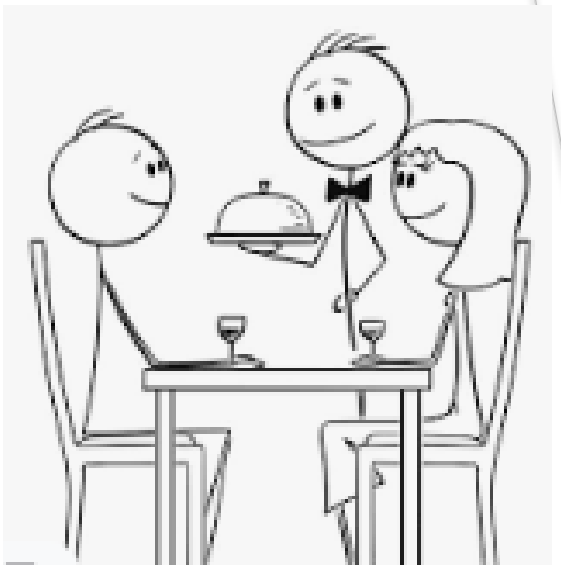
Impact of phosphorus binder in the stomach when food is present

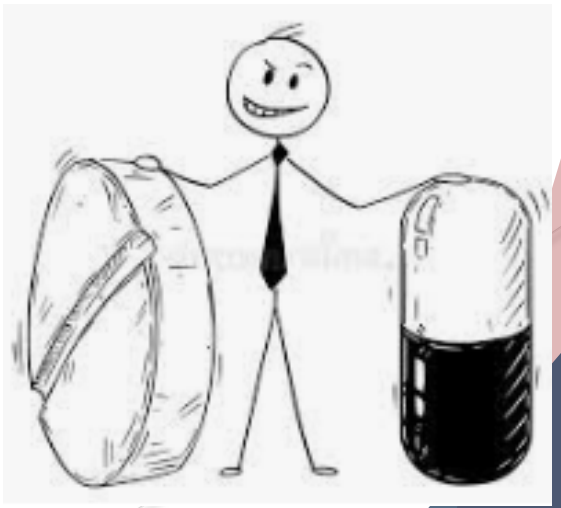



Phosphorus binders work like these magnets. It is important to take them when you eat for them to work best. At times, you may need to take more than one to keep your lab in goal.

What are reasons for missed phosphorus binder medication doses??

- Unaware of correct prescription
- Forgot
- Dining out
- Too many pills
- GI upset





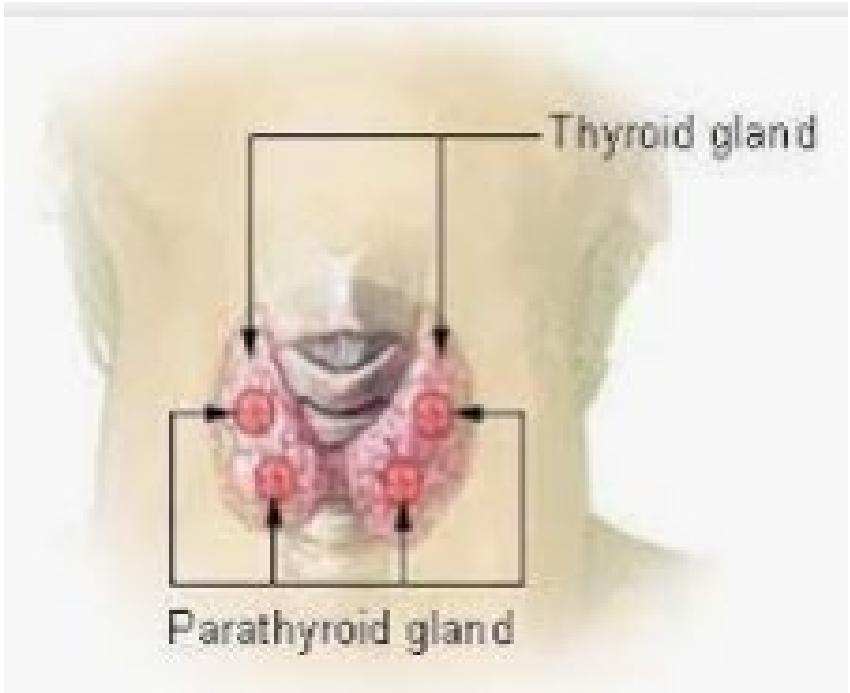
Helpful tips for remembering to take phosphorus binders

- Keep binders visible
- Carry them with you when you leave home. Place some in a small pill carrier and keep in your purse, pocket or car
- Leave yourself a note to remind you to take them
- Set an alarm on your phone for mealtime reminders
- Ask a family member or loved one to help to remind you
- Create a refill reminder on your calendar so you never run out of your phosphorus binders
- Wear a bracelet to help you remember to take them

POLL: Which is best binder to take?

Answer: The best phosphate binder is the one that is taken consistently.

Parathyroid Hormone (PTH)
Normal Range: 160-720pg/mL



- Parathyroid gland is located at the base of neck behind the thyroid gland
- Its role is to maintain calcium balance in the blood
- High phosphorus can raise your PTH labs.
- High PTH may require starting an active Vitamin D medication.
- As the PTH lab increases, often the gland gets larger and can produce more PTH.

Effects of high PTH can include:

- Weaker bones, fractures, or bone pain
- Calcification

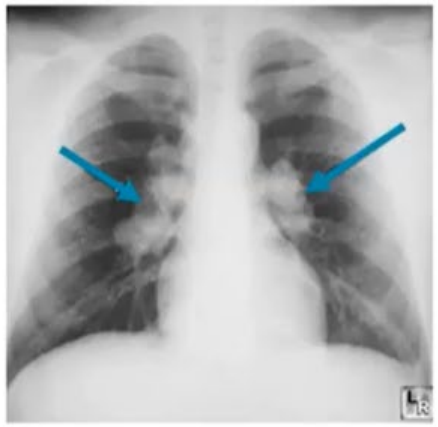
Calcification

Vascular Calcification

Vascular calcification in other soft tissue

Hand

Kidneys

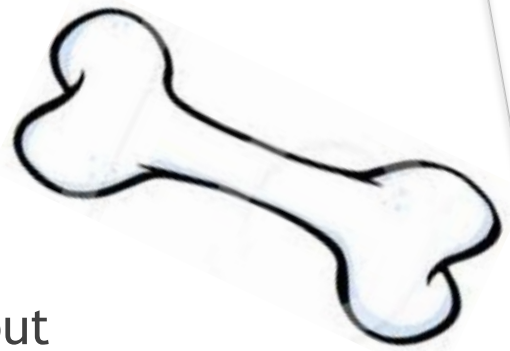


Lungs

How can this be avoided?

- Keep phosphorus below 5.5
- If prescribed, take your medications

Vitamin D
Greater than 30ng/mL



- Can get some from sunlight
- Food sources include:
  - salmon, sardines, cod, tuna, or halibut
  - fortified breakfast cereals
  - milk
- Benefits:
  - building strong bones and prevents bones from becoming weak
  - maintaining a balance of calcium and phosphorus in the blood
  - prevent bone disease
- Low levels can impact the calcium, phosphorus, and PTH levels
- Vitamin D levels should be checked to determine if a Vitamin D supplement is needed

Hemoglobin
Normal Range: 10.0 - 11.0g/dL (dialysis patients)
Non-dialysis range ~12-17g/dL

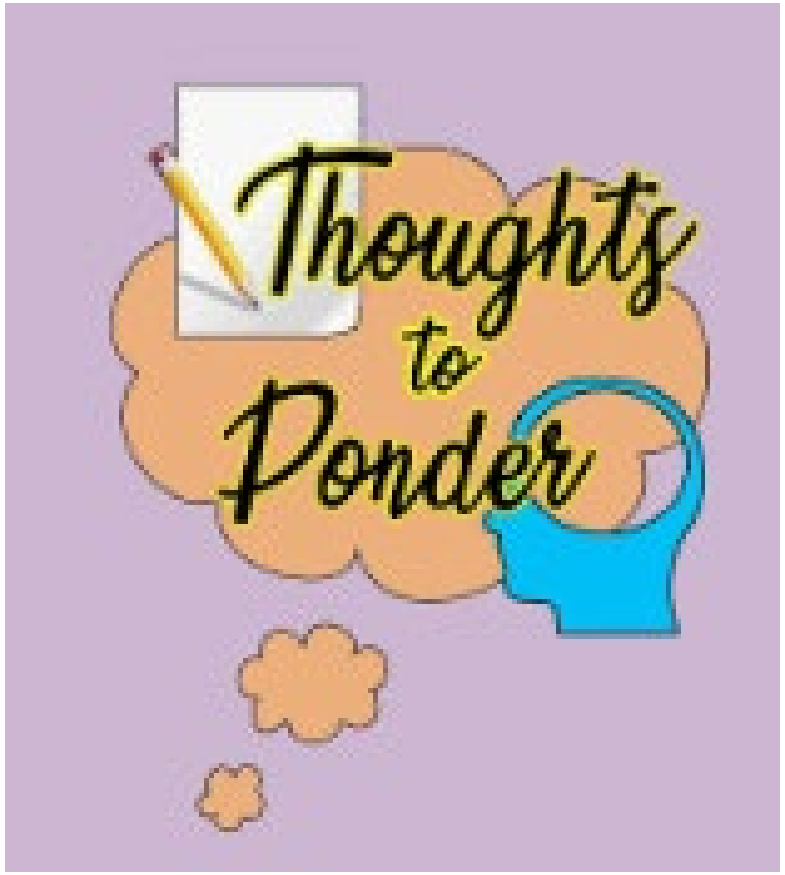
- Contains iron and carries oxygen from the lungs throughout the body
- Anemia is present when there is low iron levels which may require supplementation.
- On dialysis, it is important to not miss treatments to be able to receive this medication administration

Kt/V
Goal range greater than 1.4

- Is the measurement of adequate dialysis treatment.
- If too low, your doctor will adjust your dialysis prescription

Factors that can impact your Kt/V

- Permanent dialysis access placement instead of a catheter
- Completing all dialysis treatments



- Important to know that there may be a variety of events that may impact our labs
- Try to maintain good habits for optimal health and best labs
- Tomorrow is a “new day” and you can start all over again
- It’s OK to ask questions (even if have asked it previously)
- Companies change their ingredients so nutrition information may change without you knowing it
- Talk with your health care team about your questions and concerns
- Remember you aren’t perfect, but it’s great that you give it your best


Don't start your day
with the broken
pieces of yesterday.
Every day is a fresh
start. Every day is a
new beginning. Every
morning we wake up
is the first day of the
rest of our life.

Questions?

Please use the Chat Box

Thank You for Attending Today!

Please complete

the Feedback Form

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