The “Renal Diet” What Should My Patients Be Eating?

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Outpatient Renal Dietitian

Financial Disclosures

- None

Evidenced Based Clinical Practice Guidelines

- K/DOQI Guidelines were developed by physicians and healthcare providers for the nephrology community.
- Recognized throughout the world for all stages of kidney disease
- K/DOQI project began in 1997

Stages of Chronic Kidney Disease

Stage	Description	Renal Function
1	Kidney damage – normal GFR	≥ 90 mL/min
2	Kidney damage – mild ↓ GFR	60-89 mL/min
3	Moderate ↓ GFR	30-59 mL/min
4	Severe ↓ GFR	15-29 mL/min
5	End-stage renal disease	< 15 mL/min

Note: Dialysis is generally started with GRF is ~10 mL/min

Deterioration of Nutritional Status

- May start as early as Stage 3-4
- Glomerular Filtration Rate (GFR) 28 – 35 mL/min
- Protein Energy Malnutrition (PEM) is often present at the time patients begin dialysis
- Malnutrition in patients beginning dialysis is a strong predictor of poor clinical outcomes and increased mortality

Typical Patient Requests/Comments:

- "Tell me the foods I should eat to help preserve my kidney function".
- "Give me a list of the "good" and "bad" foods I should be eating".
- "I have diabetes, heart disease, high blood pressure, now CKD, what is left to eat"?
- I have kidney disease and am terrified to eat!
- "I googled kidney disease and found……"
- "Dr Oz said……."

Practical Steps to Nutrition Assessment

1. Review of medical record
2. Diet history – “normal” for patient, changes in appetite
3. Anthropometrics measurements: weight changes
4. Review of biochemistries (with the patient)
5. Assess current food intake: kcal, protein, cho, fat, Na+, K+, PO4
6. Assess / develop nutrition problem
7. Determine / implement prioritized interventions
8. Develop **individualized** nutrition plan
9. Instruct patients with written materials
10. Follow up / re-evaluation as appropriate

MNT Recommendations for Chronic Kidney Disease (CKD) Stages 3 - 5

Nutrient	Recommendation
Calories	30-35 kcal/kg
Protein	0.6-0.75 gm/kg body weight (50% high biological value)
Sodium	<2000 mg
Potassium	Evaluate need to restrict
Fluid	Evaluate need to restrict
Calcium	DRI: ≤1200mg
Phosphorus	800-100 mg
Vitamins	Individualized

Nutrition recommendations are based on labs

Your Kidney Lab Results

Name _____ Date _____

Chronic Kidney Disease Tests	Results	Why It Is Important
Estimated Glomerular Filtration Rate (eGFR)	CKD is an eGFR less than 60 Your Result:	eGFR estimates how well your kidneys are filtering blood and removing waste products.
Creatinine	Normal: less than 1.0 Your Result:	Waste product produced by muscles released in blood. As GFR decreases, creatinine levels increase.
Urea Nitrogen (UN)	Normal: less than 20 Your Result:	Waste product in the blood caused by normal breakdown of protein (kidneys filter blood to remove urea) increases as kidney function declines.

Other Important Tests	Results	Why It Is Important
Serum Albumin	CKD Goal: >4.0 Your Result:	Albumin is a protein that helps measure how well you are eating.
Potassium	CKD Goal: 3.5-5.5 Your Result:	Potassium affects how your nerves and muscles are working. High or low levels can be dangerous.
Phosphorus	CKD Goal: 3.5-5.5 Your Result:	Phosphorus is important for strong bones and healthy blood vessels. High levels may cause soft bones, hard blood vessels and itchy skin.
Calcium	CKD Goal: 8.5-9.5 Your Result:	Calcium keeps your bones strong and your heart rhythm steady. CKD can lower the amount of calcium in your bones.
A1C (for patients with diabetes)	Goal: <7.0% Your Result:	A1C estimates average blood sugar levels over 2 to 3 months.
Parathyroid Hormone (PTH)	Goal: 300-600 Your Result:	PTH controls the calcium and phosphorus levels in your blood. It is needed to keep bones and blood vessels healthy.
Hemoglobin (Hgb)	CKD Goal:10-11 Your Result:	Low hemoglobin is a sign of anemia. You may feel tired if you have anemia.
Vitamin D	Normal: 20 or more Your Result:	Vitamin D is important for bones and heart health.
Blood Pressure	Goal: 130/90 Your Result:	High blood pressure makes the heart work harder and can damage blood vessels in the

Calories

Calories

- Recommended energy intake = 30 -35-day kcal/kg
  - Spares body protein
  - Maintains neutral nitrogen balance
  - Promotes higher serum albumin levels
- Challenges for patients to meet calorie needs:
  - As CKD progresses, patients may experience a decreased appetite, nausea/vomiting, increased fatigue, resulting in weight loss
  - Multiple diagnoses, in addition to CKD, patients are confused on what to eat
  - Fluctuating CKD dietary restrictions based on current kidney function

Protein

Protein

- Studies on protein restriction have had inconsistent results. Most of the evidence suggests a benefit of **moderate** dietary protein restriction to prevent muscle breakdown.
  - Generally not less than 60 grams total protein per day.
  - The typical American diet contains ~80-100 grams protein per day.
- Decreasing dietary protein may delay CKD progression to Stage 5, delaying need for dialysis and transplantation.

Protein

CKD reference lab goal:

- Serum Albumin >4.0 g/dl
- Protein intake

  0.6-0.75 mg/kg body weight

My Recommendations prior to dialysis

2-3 servings (6 to 8 oz / 42-56 grams) of high-quality protein each day

- 1 ounce (7 grams) at breakfast
- 2-3 ounces (14-21 grams) at lunch
- 2-3 ounces (14-21 grams) at dinner

GOOD SOURCES OF PROTEIN

Recommend _____ ounces of protein per day. Spread out over three or more meals per day.

Poultry


Roasted Turkey


Baked Chicken


Cornish Hens

Meat


Pork Tenderloin


Venison


Lamb


Beef Steak


Hamburger Patty


Roast Beef

Fish & Seafood


Fresh Fish


Frozen Fish


*Canned Fish


Shrimp


Crab


Clams, Oysters & Scallops


Lobster

Dairy & Eggs & Legumes & Soy


Cheese


*Cottage Cheese


**Milk


**Greek Yogurt


Eggs
1 egg = 1 oz


**Beans / legumes
1/2c = 1 oz


Tofu

Note: 7 grams of protein = 1 oz protein

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* High Sodium
**High Potassium

PLANT BASED SOURCES OF PROTEIN

1/2 c cooked Lentils
9 g Protein = 1 oz

1/2 c cooked Beans
~7 g protein= 1 oz

1/2 c Edamame
11 g Protein = 1.5 oz

1/2 c Lima Beans
~7 g Protein = 1 oz

1 c Green Peas
8 g Protein = 1 oz

1/2 c Hummus
6 g Protein = 1 oz

3 T Nutritional Yeast
12 g Protein = 1.5 oz

1/2 c cooked Steel Cut Oatmeal
5 g Protein = 1 oz

1 c cooked Wild Rice
6-7 g Protein = 1 oz

1/2 c cooked Quinoa
6-9 g Protein = 1 oz

1/4 c Seeds (Pumpkin, Hemp, Sunflower, Chia, Sesame, Flax)
7-9 g Protein = 1 oz

1/4 c Nuts (Pistachio, Walnut, Cashew)
7-9 g Protein = 1 oz

2 T Nut Butters
6 g Protein = 1 oz

Soy Pattie
~ 10-19 g Protein = 2-3 oz

1/2 c Tofu
10 g Protein = 1.5 oz

***Recommend 2-3 plant based meals per week**
Each meal should have ~14-21 grams of protein

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Sodium

Sodium

Many patients think, if they are not adding to salt to their foods, they are following a low salt diet.

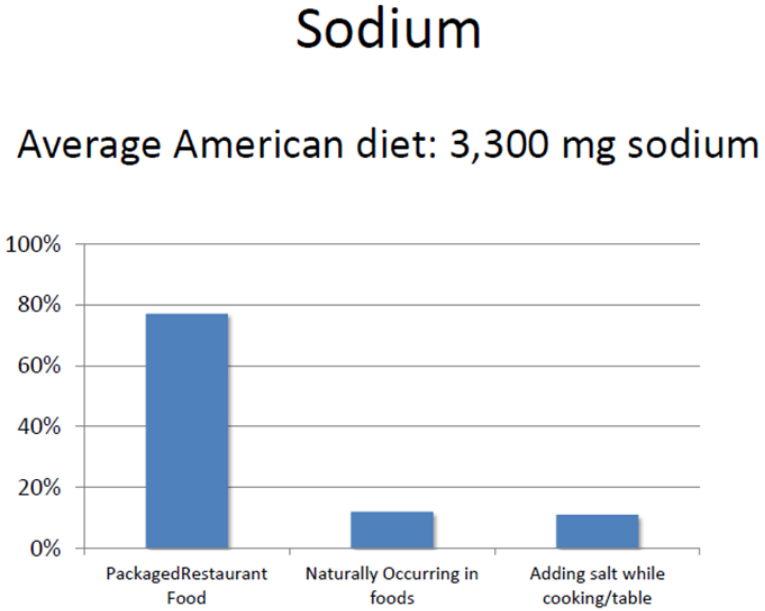
Sodium intake:

- Recommend aiming for less than 2,300 mg per day

My Recommendations

- 500-700 mg sodium per meal
- 500 mg sodium for snacks

- 15% of total sodium intake is what we add to our foods
- 85% of total sodium intake is what is already in foods



http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm315393.htm

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Sodium

Salt is Salt!

	Calcium	Potassium	Magnesium	Iron	Sodium
Table Salt	0.03%	0.09%	<0.01%	<0.01%	39.1%
Maldon Salt	0.16%	0.08%	0.05%	<0.01%	38.3%
Himalayan Salt	0.16%	0.28%	0.1%	0.004%	36.8%
Celtic Salt	0.17%	0.16%	0.3%	0.014%	33.8%

DASH Diet – often recommended at Stage 3 CKD

Dietary
Approaches to
Stop
Hypertension

DASH Eating Plan

Food Group	Servings	Serving Size	Examples
Vegetables	4–5 per Day	1 cup raw leafy greens 1/2 cup chopped raw or cooked vegetables 1/2 cup vegetable juice	Lettuce, kale, spinach, broccoli, carrots, green beans, squash, sweet potatoes, tomatoes, asparagus, green peppers, low sodium tomato juice
Fruits	4 per Day	1 medium fruit 1/2 cup cut fresh, frozen or canned fruit 1/4 cup dried fruit 1/2 cup 100% fruit juice	Apples, bananas, berries, oranges, pineapple, peaches, pears, grapes, melons, raisins, dried apricots *Limit juice to one serving a day*
Grains	6–7 per Day	1 slice of bread 1/2 – 1 cup dry cereal 1/2 cup cooked rice, pasta or grain	Whole wheat bread and rolls, whole wheat pasta, English mu n, brown rice, pita bread, popcorn, oatmeal, quinoa, unsalted pretzels
1% Fat or Non-Fat Milk and Dairy Products	2–3 per Day	1 cup milk or yogurt 1 1/2 ounce cheese	1% fat or non-fat milk, reduced fat cheese, fat free or low fat regular or frozen yogurt
Poultry, Fish, Lean Meats	4–6 ounces per Day	1 ounce cooked meat, poultry or sh 1 egg = 1 ounce serving	Choose lean meat and trim visible fat, remove skin from poultry. Bake, broil or poach
Beans, Nuts, Seeds	4 per Week	1/3 cup or 1 1/2 ounce nuts 2 tablespoons peanut butter 2 tablespoons or 1/2 ounce seeds 1/2 cup cooked beans or dry peas	Almonds, walnuts, sun ower seeds, peanuts, peanut butter, kidney beans, pinto beans, lentils, split peas
Oils, Fats	2 per Day	1 teaspoon soft margarine 1 teaspoon vegetable oil	Soft margarine, vegetable oils canola, corn, olive or sa ower , low fat mayonnaise, light salad dressing
Desserts, Sweets, Added Sugars	4 or less per Week	1 tablespoon jelly 1/2 cup sorbet 1 small cookie	Jams and jellies, fruit punch, hard candy, maple syrup, sorbet and ices, sugar

HIGH SODIUM FOODS

Snack Foods


Salted Potato Chips


Salted Pretzels


Salted Popcorn


Salted Nuts


Salted Crackers


Cheesy Corn Chips

Meats & Proteins


Hot Dogs & Bratwursts


Bacon


Sausage Links/Patties


Canned Meats & Fish


Deli Meats


Cottage Cheese

Other


Pizza


Biscuits


Instant Hot & Ready-to-Eat Cereal


Processed Cheese & Cheese Spreads


Canned Soups & Vegetables


Frozen Entrées


Restaurant Food


Pickles / Relishes/Olives


All Salts


Sauces: BBQ, Teriyaki, Tartar, Soy, Spaghetti Sauce, Broths & Bouillon

Finding Sodium Content on a Food Label

Read ingredient labels.
Some lower sodium foods contain potassium chloride as a substitute for salt. These foods should be avoided.

Serving Size:
Look here first.
Make sure you know how much sodium you are getting in the serving size.

Sodium:
Always look for the "mg"and not the "%".

2000 mg of sodium per day
500 mg of sodium per meal
500 mg of sodium for snacks

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There Is How Much Sodium in My Sandwich?

Turkey Sandwich

- Bread 240 mg
- Turkey 440 mg
- Cheese 125 mg
- Mayo 125 mg
- Mustard 160 mg

Total: 1090 mg

Tracking Sodium Intake

- Paper and pen
- Phone apps


Healthy out


My fitness pal

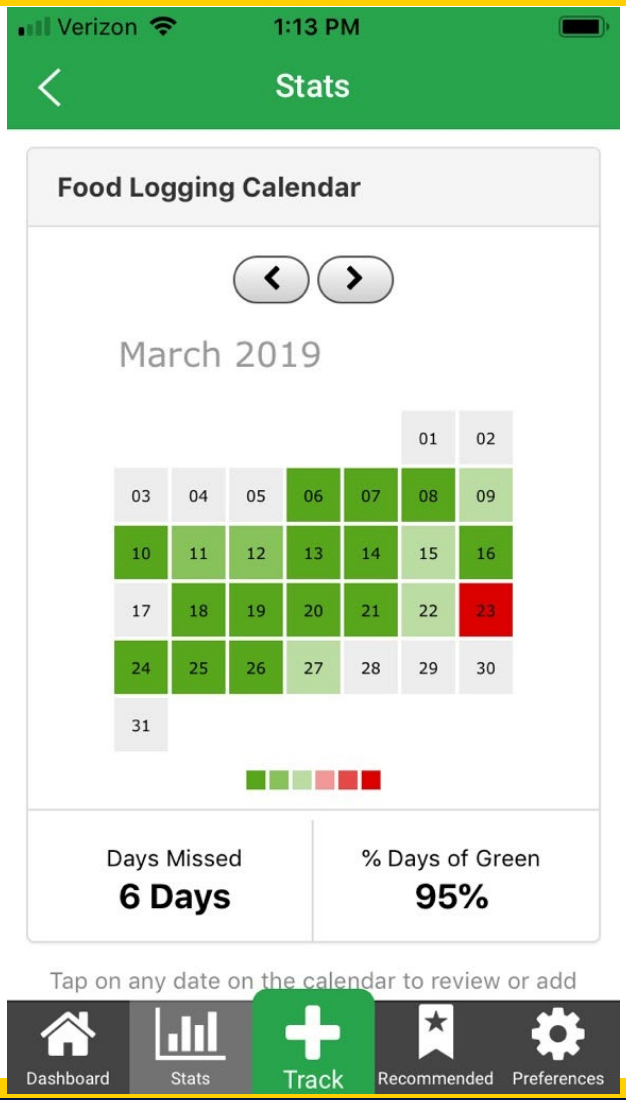
Salt tracker

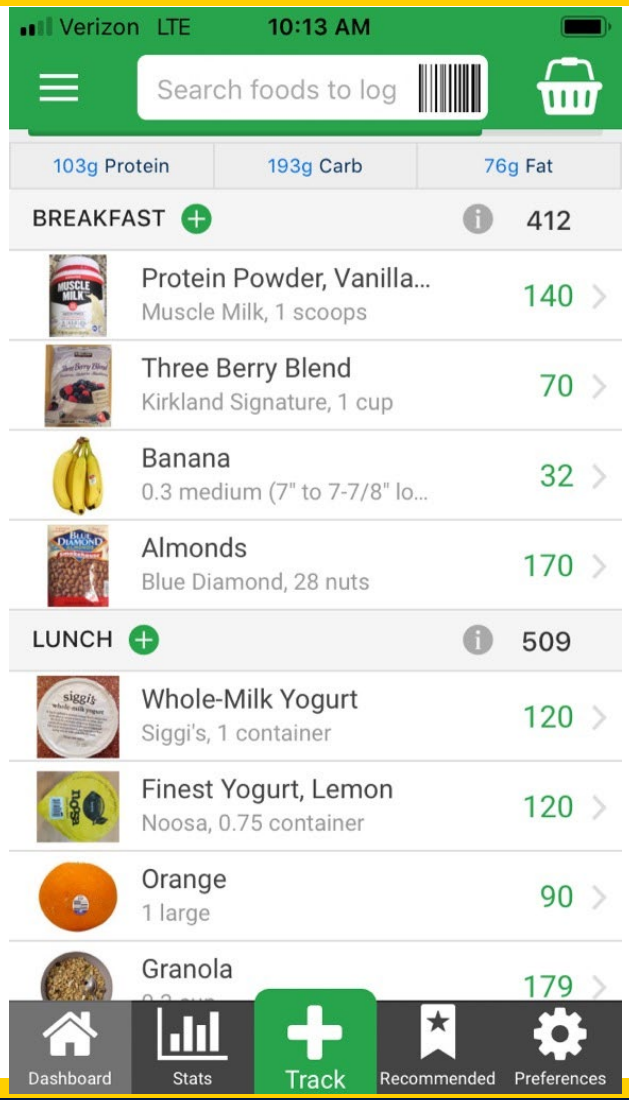

My food coach

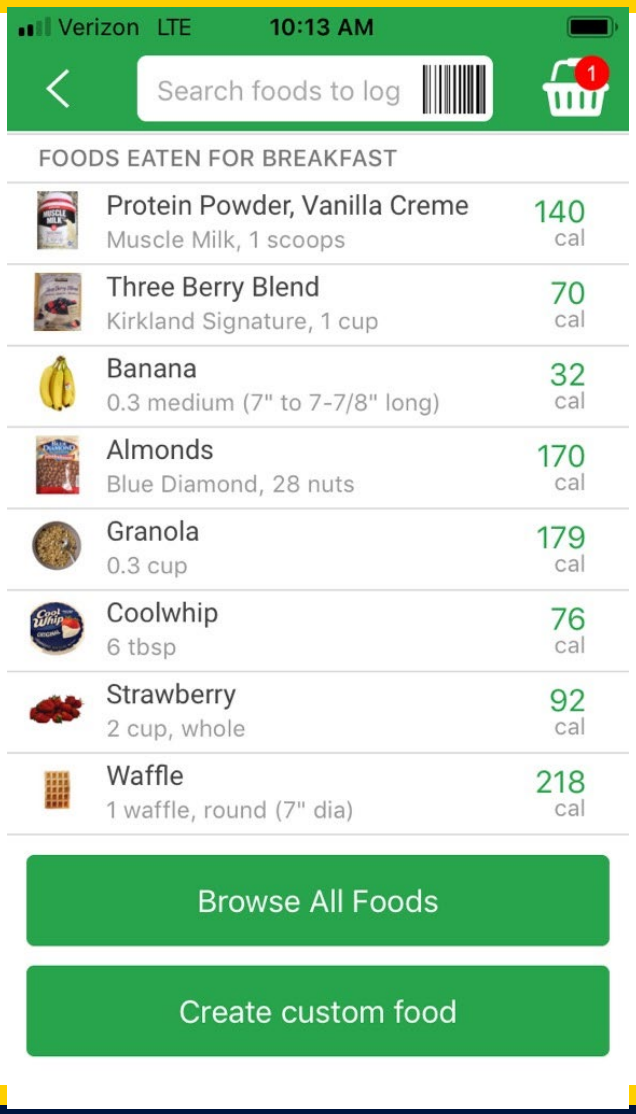
Calorie counter


Nutritionix

Nutritionix



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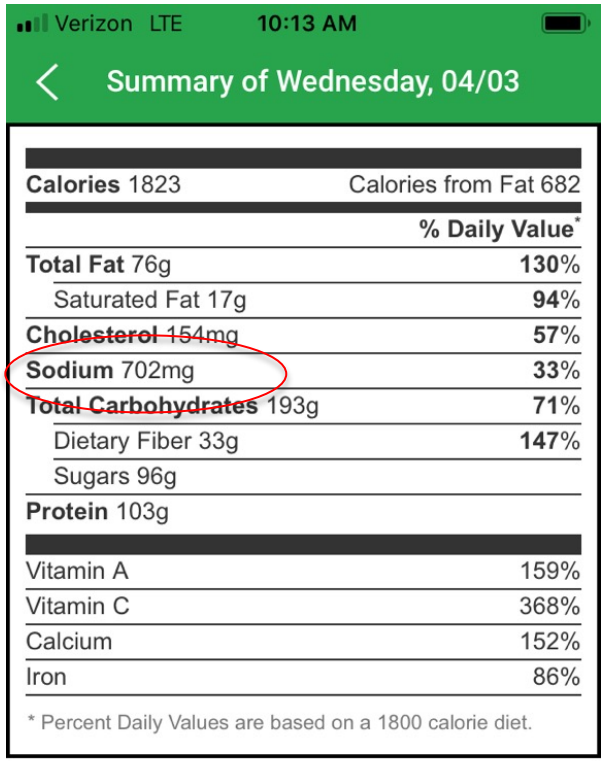
Search foods to log
1
FOODS EATEN FOR BREAKFAST
Protein Powder, Vanilla Creme
Muscle Milk, 1 scoops
140 cal
Three Berry Blend
Kirkland Signature, 1 cup
70 cal
Banana
0.3 medium (7" to 7-7/8" long)
32 cal
Almonds
Blue Diamond, 28 nuts
170 cal
Granola
0.3 cup
179 cal
Coolwhip
6 tbsp
76 cal
Strawberry
2 cup, whole
92 cal
Waffle
1 waffle, round (7" dia)
218 cal
Browse All Foods
Create custom food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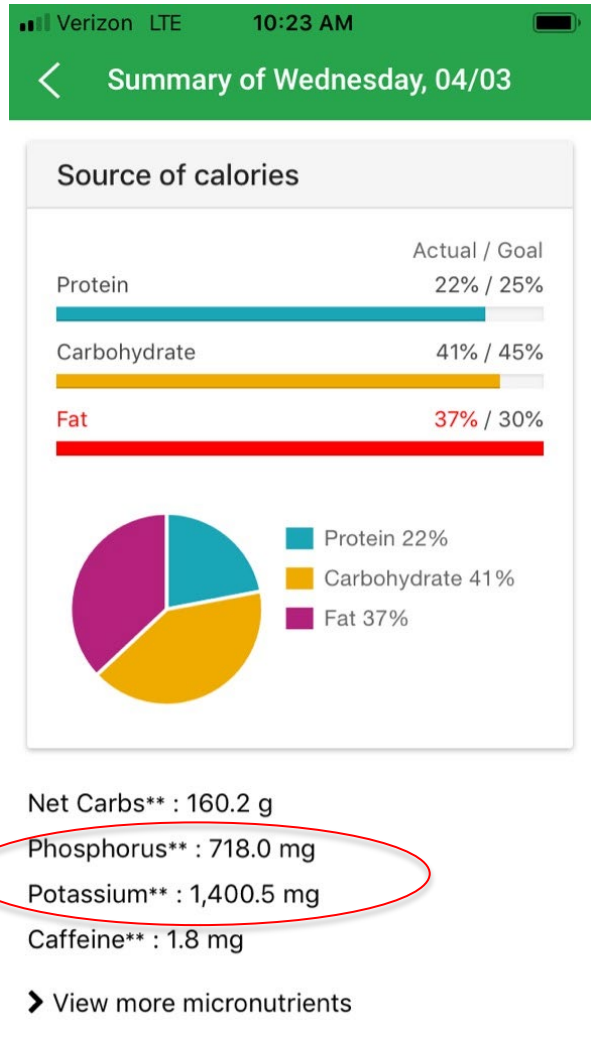
Summary of Wednesday, 04/03
Calories 1823
Calories from Fat 682
% Daily Value*
Total Fat 76g 130%
Saturated Fat 17g 94%
Cholesterol 154mg 57%
Sodium 702mg 33%
Total Carbohydrates 193g 71%
Dietary Fiber 33g 147%
Sugars 96g
Protein 103g
Vitamin A 159%
Vitamin C 368%
Calcium 152%
Iron 86%
* Percent Daily Values are based on a 1800 calorie diet.
Daily Calorie Limit: 1800 Save
Source of calories
Actual / Goal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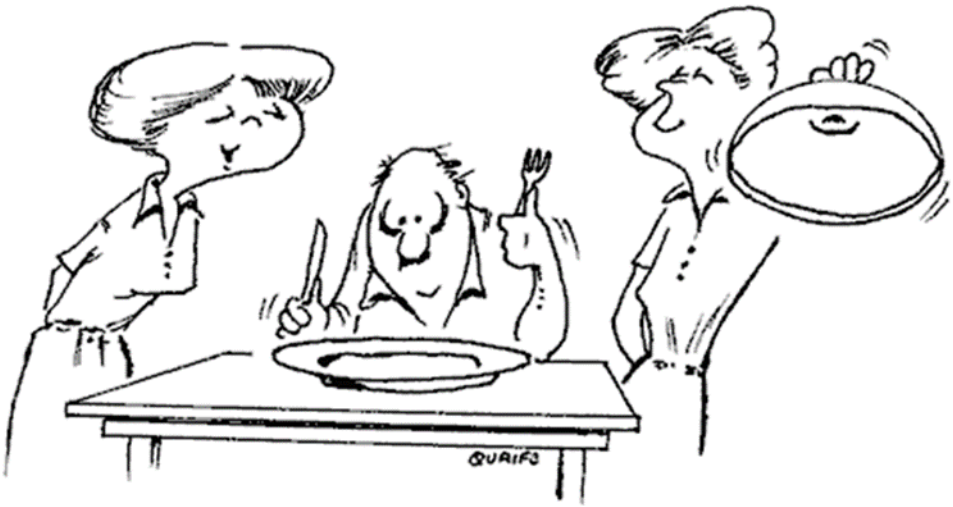
Summary of Wednesday, 04/03
Source of calories
Actual / Goal
Protein 22% / 25%
Carbohydrate 41% / 45%
Fat 37% / 30%
Protein 22%
Carbohydrate 41%
Fat 37%
Net Carbs** : 160.2 g
Phosphorus** : 718.0 mg
Potassium** : 1,400.5 mg
Caffeine** : 1.8 mg
View more micronutrients

Potassium



...and this dish is totally potassium-free!

Potassium Recommendations

CKD Reference Lab Range

- 3.5-5.5 mmol/L
- Potassium Intake
  - Less than 2400 mg per day

My Recommendations prior to dialysis:

If potassium under 4.9 mmol/L

- 1-2 servings of high potassium foods / day

If potassium 5.0 to 5.3 mmol/L

- 0-1 servings of high potassium foods / day

If potassium is 5.4 mmol/L or higher

- Avoid high potassium foods

We're a little concerned
about your potassium levels.

What causes potassium to elevate in the blood?

- Eating high potassium foods / beverages
  (some low sodium foods are higher in potassium)
- Use of salt substitutes to flavor food
- High / uncontrolled blood sugars
- Chronic constipation
- Medications –Lisinopril and Losartan
- Oral supplements – Boost, Ensure, Glucerna

Hidden Sources of Potassium

- Ask patients if they are using salt substitutes
- Avoid using salt substitutes: they are high in potassium!
- This does not include Mrs. Dash!

- Other sources of high potassium, low sodium foods

Not to be confused with Mrs Dash

HIGH POTASSIUM FOODS

Fruits

Serving size: ½ cup fresh or canned or 1 small piece
1/4c dried fruit


Oranges & Orange Juice


Bananas


Kiwi


Mango and Papaya


Cantaloupe


Nectarines


Dried Fruits / Raisins


Avocado


Pomegranate


Plaintains

Vegetables

Serving size: ½ cup cooked or 1 cup raw


Greens (Beet / Spinach)


White & Sweet Potatoes


Tomatoes & Tomato Juice


Beets


Parsnips


Broccoli


Squash Winter & Summer


Brussel Sprouts


Artichoke

Other


Chocolate 1 oz / 1 bar


Nuts & Seeds 1/4 cup


Milk & Soy Milk 1 cup


Yogurt 6 oz


Raisin Bran 1 cup


French Fries & Potato Chips


Salt Substitute


Nutrition Supplements


Coconut Water & Coconut Milk 1 cup

If **potassium** is **less** than **5.0:** 1-2 servings per day
If **potassium** is **between** **5.0 - 5.3:** 0-1 serving per day
If **potassium** is **greater** than **5.3**: **AVOID!**

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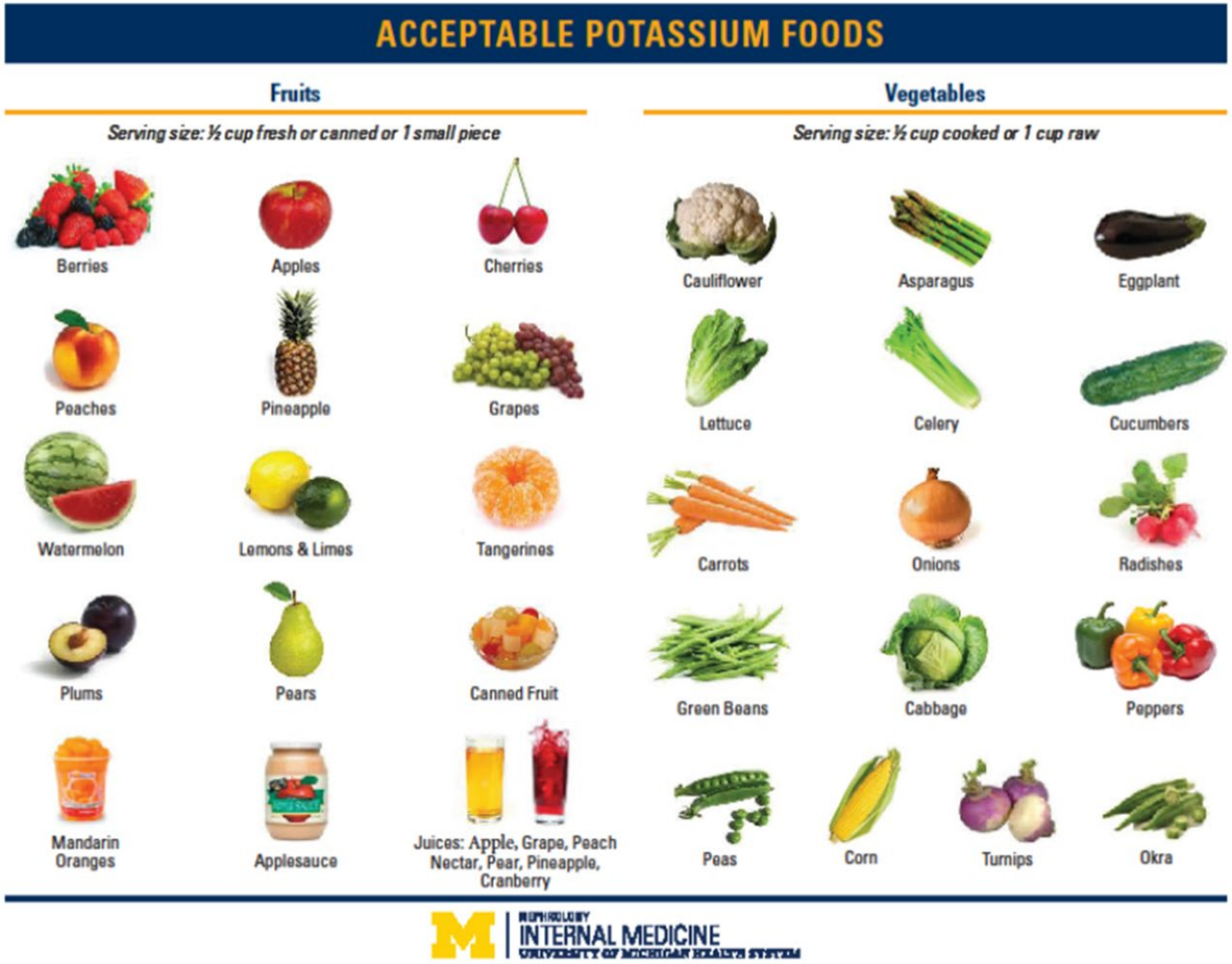
ACCEPTABLE POTASSIUM FOODS
Fruits
Serving size: ½ cup fresh or canned or 1 small piece
Berries
Apples
Cherries
Peaches
Pineapple
Grapes
Watermelon
Lemons & Limes
Tangerines
Plums
Pears
Canned Fruit
Mandarin Oranges
Applesauce
Juices: Apple, Grape, Peach Nectar, Pear, Pineapple, Cranberry
Vegetables
Serving size: ½ cup cooked or 1 cup raw
Cauliflower
Asparagus
Eggplant
Lettuce
Celery
Cucumbers
Carrots
Onions
Radishes
Green Beans
Cabbage
Peppers
Peas
Corn
Turnips
Okra
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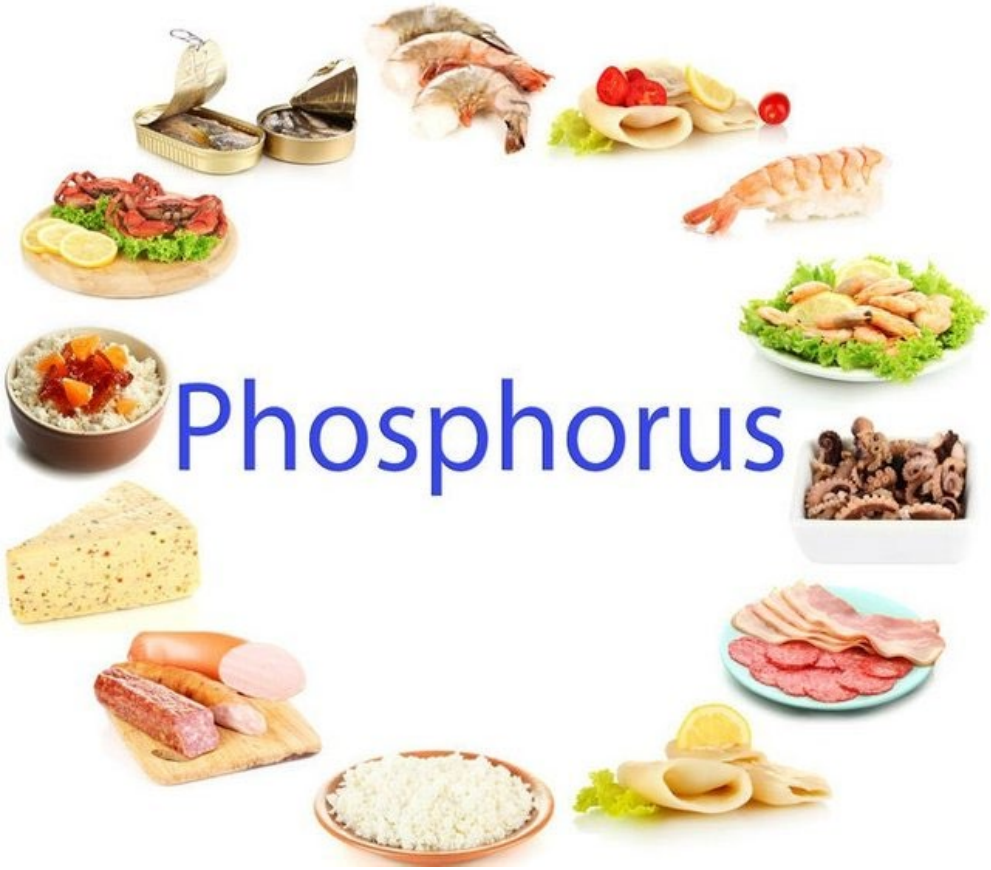
Phosphorus



Phosphorus

CKD Reference Lab goal

- 3.5-5.5 mg/dl

My Recommendations

- Not all patients need to follow a low phosphorus diet
- Generally discussed latter stages of stage 4 to 5
- Review Organic and Inorganic phosphorus sources
- Phosphorus is not generally found on the food packaging Nutrition Facts Label, check ingredient list
- Discuss need for phosphate binders if necessary
- **IMPORTANT:** How / When / Why to take them

Phosphorus

- Two types of phosphorus
  - **Organic phosphorus** found naturally in foods: animal protein, whole grains, dairy, beans and lentils
  - **Inorganic phosphorus** – called phosphorus additives which are added to foods and drinks as a preservative

Absorption of phosphorus

- A major and important difference between these sources is how they are absorption on the gut.
  - **Organic phosphorus**
    - Meat and dairy sources is estimated to be absorbed at approximately 50-60%,
    - Plant-based phosphorus at <40%.
  - **Inorganic phosphorus**
    - Additive(s) added to foods that is believed to be more readily absorbed at rates >60% to as much as 90-100%

PHOSPHORUS: Organic and Inorganic

Did you know that there are 2 types of phosphorus found in your food? Organic and Inorganic. Your body absorbs these types of phosphorus differently. Knowing more about the types of phosphorus and how they are absorbed in your body can help you manage your blood phosphorus levels.

Organic Phosphorus:

- Naturally found in foods
- Found in both animal and plant foods
- When you eat organic phosphorus, only **40-60%** of the phosphorus is absorbed
- If you take phosphate binders, you absorb even less of the phosphorus in these foods
- This type of phosphorus is not found on the food label


Fresh Beef


Fresh Fish/Seafood


Eggs


Grains


Beans / Legumes


Fresh Poultry

Inorganic Phosphorus:

- Added to foods during processing for a specific purpose such as: improving color, flavor or stability
- Found in many processed, convenience and fast foods
- More than **90%** of inorganic phosphorus is absorbed after eating
- Phosphate binders help decrease the amount of phosphorus absorbed.
- Phosphorus content isn't required on labels. Look for additives containing "**p-h-o–s**" in the ingredient list. "**P-h-o-s**" can be located anywhere in the ingredient name. Example: **Phos**phoric acid Monosodium **phos**phate


Colas


Fast Food


Protein Bars

Frozen / Convenience Foods


Breakfast Cereal


Sport Drinks


Enhanced meats

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Fiber

Fiber

- Review health benefits: how it relates to CKD
  - Blood sugar control, constipation
- Daily recommendations for adults
- Good food choices of dietary fiber – encourage fiber coming for food vs fiber supplements
- Slowly add fiber into diet over several weeks

Fluids

Fluids

- Unless medically indicated, before dialysis, fluid is not normally restricted.
- Want to ensure adequate hydration and prevent possible AKI
- Fluid restriction is generally started once dialysis is initiated and as urine production decreases.

Oral Supplements and Drinks

- Due to high content of protein, potassium, phosphorus:
  - Not recommended: Boost, Ensure, sports drinks: Gatorade, Powerade, Vitamin Water Smartwater
- Lower in potassium and phosphorus
  - Recommended (only if indicated): Nepro, Novasource Renal, Re/Gen, Supplena

How to Read a Food Label

Quick Guide to Food Labels for those with Kidney Disease

SERVING SIZE:
Always look here first. Make sure you calculate how much you're getting based on the serving size

SODIUM:
Always look at the "mg" and NOT the "%".
Aim for <2000mg, <600 mg/meal, <100 -200 mg/snack

POTASSIUM:
Potassium – listing is not required.
No listing does NOT mean no potassium. Aim for 2000mg/day

TOTAL CARBOHYDRATES:
Important fuel for your body. Total carbs include sugar, fiber and other carbs. Most "Sugar-free" foods are NOT carb free

PHOSPHORUS:
Phosphorus usually is not on the label, so you will have to read the Ingredient List

Look for *phosphorus* or words with "phos" in them.

Phosphoric Acid, Hexametaphosphate, Monocalcium, Phosphate, Tricalcium Phosphate

Stay away from added phosphorus! It can easily add up to 1000mg phosphorus per day!

Nutrition Facts

Serving Size (75g)
Servings Per Container 1

Amount Per Serving

Calories 260	Calories from Fat 50
	% Daily Value*
Total Fat 6g	9%
Saturated Fat 5g	25%
Trans Fat 0g	
Cholesterol 5mg	2%
Sodium 180mg	8%
Potassium 380mg	11%
Total Carbohydrate 33g	13%
Dietary Fiber 2g	8%
Sugars 23g	
Protein 20g	40%

Vitamin A 25%	• Vitamin C 25%
Calcium 25%	• Iron 45%
Vitamin E 25%	• Thiamin 25%
Riboflavin 25%	• Niacin 25%
Vitamin B6 25%	• Folate 30%
Vitamin B12 25%	• Biotin 25%
Pantothenic Acid 25%	• Phosphorus 30%
Iodine 25%	• Magnesium 25%
Zinc 30%	• Copper 50%

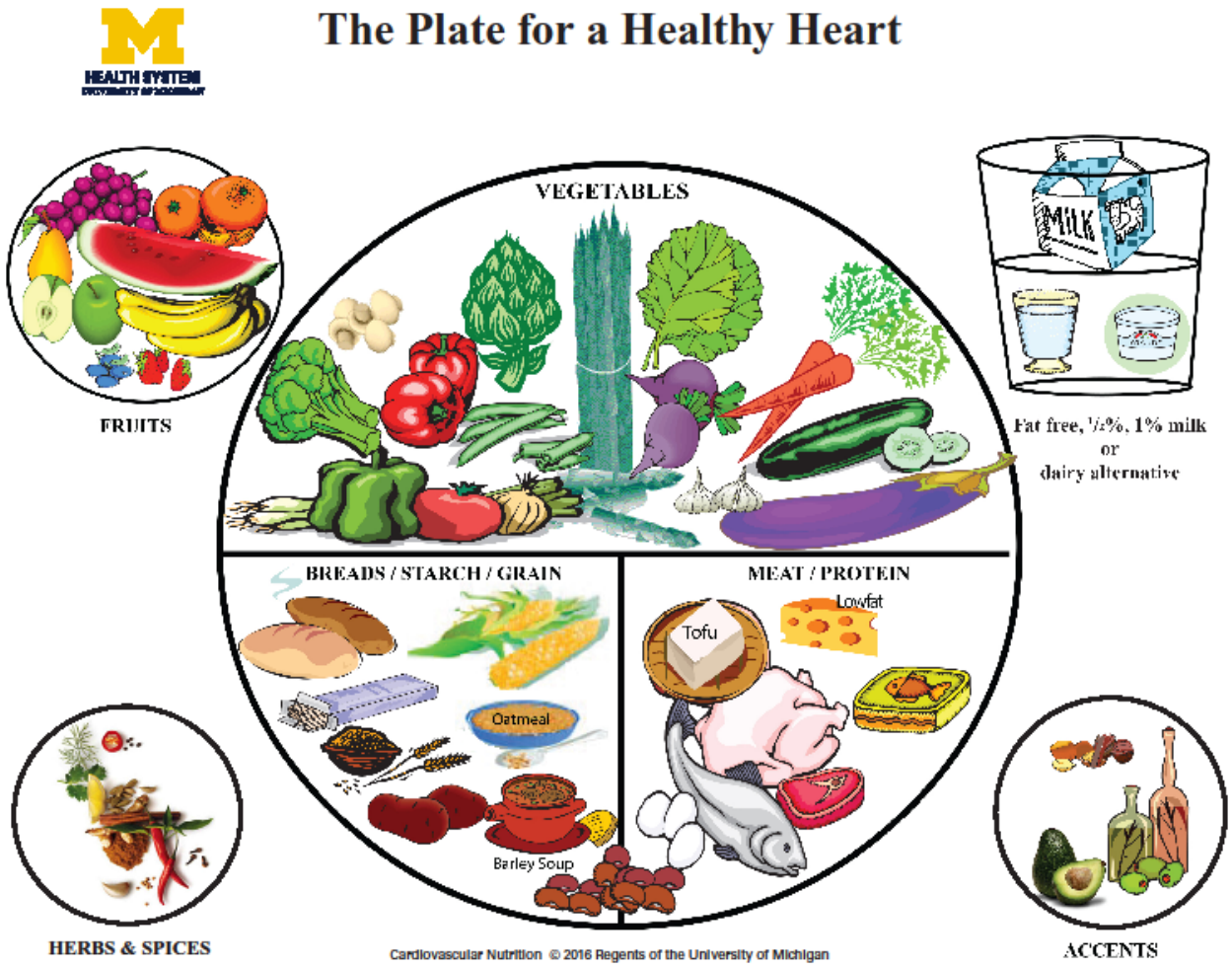
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Saturated Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Potassium		3,500 mg	3,500 mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Protein		50g	65g

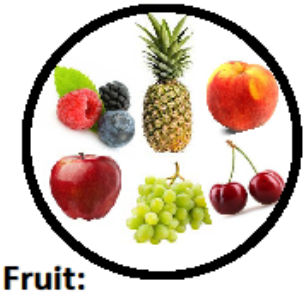
Use the Nutrition Facts on food labels to figure out how to work a food into your meal plan. Learn about what foods are healthier choices by looking at the label.

Ingredients: Ground Corn Treated with Lime, Water, Cellulose Gum, Propionic Acid (to preserve freshness), Benzoic Acid (to preserve freshness), Phosphoric Acid (preservative), Dextrose, Guar Gum, Amylase.

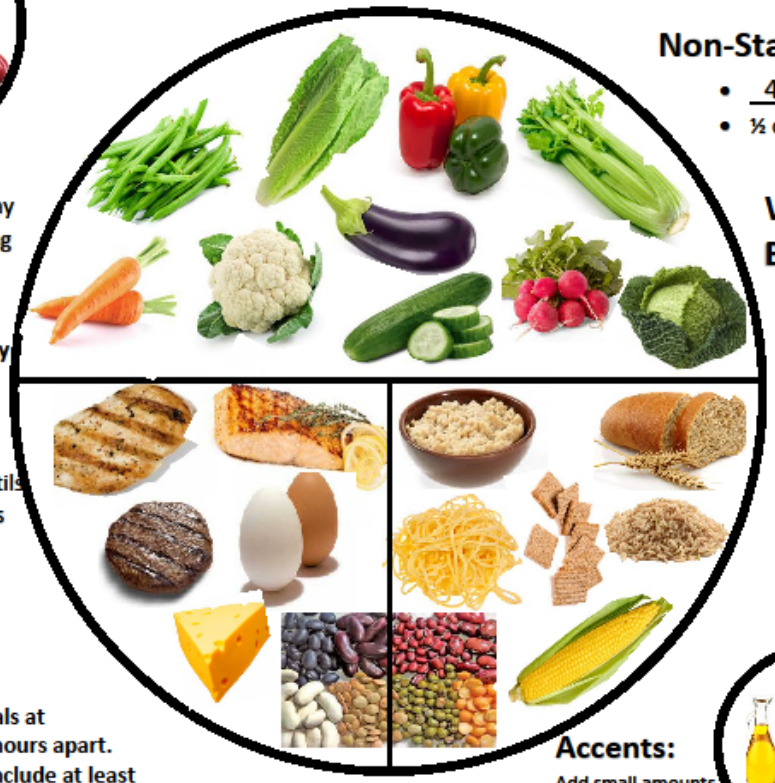
Patient Handouts – “putting it all together”



Renal Friendly Plate



Renal Friendly Plate



Fruit:

- ~3-4 servings per day
- 1 small or ½ cup serving

Non-Starchy Vegetables:

- 4-6 servings per day
- ½ cup cooked or 1 cup raw

Protein: _____oz/day

- 3oz serving size = a size of a deck of cards
- Choose lean meats, poultry, fish, bean/lentils
- Avoid processed meats due to sodium and phosphorus

Whole Bread & Starches:

Serving Size =

- 1 sl bread
- ½ cup rice, noodles or hot cereal
- ½ small bagel, English muffin or hamburger bun
- 4-6 crackers
- ¾ c cold unsweetened cereal

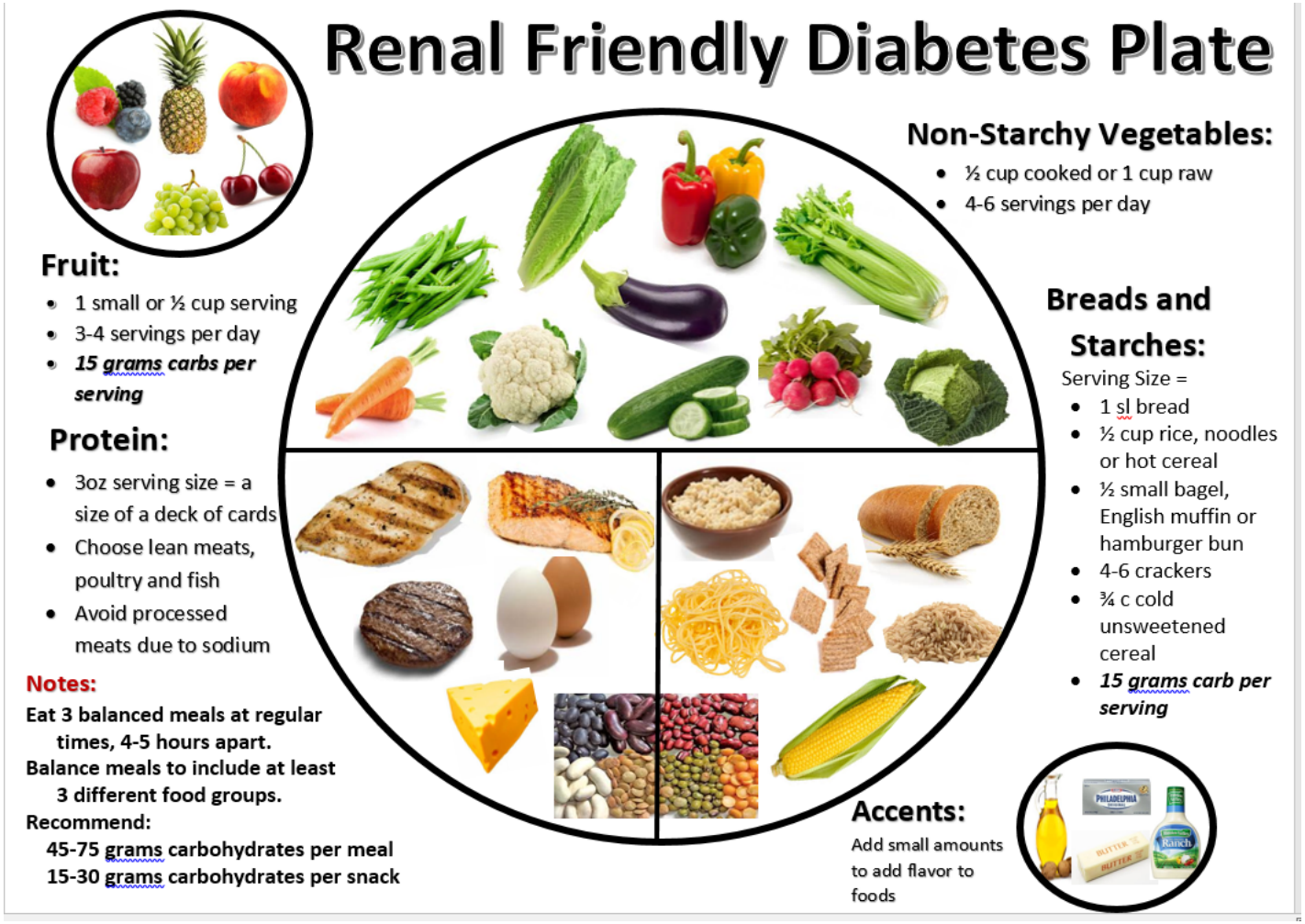
Recommendations:

- Eat 3 balanced meals at regular times, 4-5 hours apart.
- Balance meals to include at least 3 different food groups.

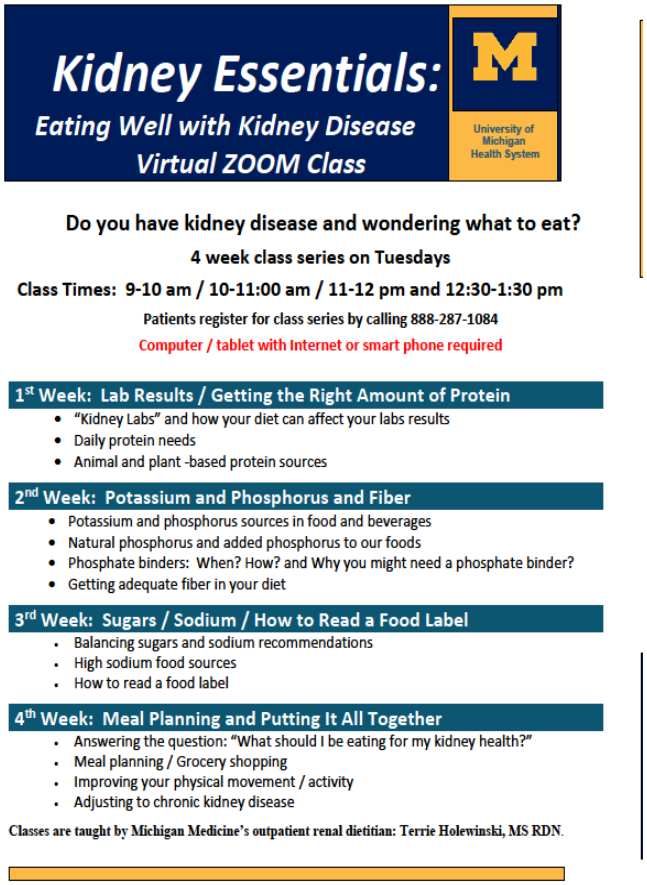
Accents:

Add small amounts to add flavor to foods

Renal Friendly Diabetic Plate



Kidney Essentials Nutrition ZOOM class



Kidney Essentials:

Eating Well with Kidney Disease
Virtual ZOOM Class

University of Michigan Health System

Do you have kidney disease and wondering what to eat?

4 week class series on Tuesdays

Class Times: 9-10 am / 10-11:00 am / 11-12 pm and 12:30-1:30 pm

Patients register for class series by calling 888-287-1084

Computer / tablet with Internet or smart phone required

1st Week: Lab Results / Getting the Right Amount of Protein

- "Kidney Labs" and how your diet can affect your labs results
- Daily protein needs
- Animal and plant -based protein sources

2nd Week: Potassium and Phosphorus and Fiber

- Potassium and phosphorus sources in food and beverages
- Natural phosphorus and added phosphorus to our foods
- Phosphate binders: When? How? and Why you might need a phosphate binder?
- Getting adequate fiber in your diet

3rd Week: Sugars / Sodium / How to Read a Food Label

- Balancing sugars and sodium recommendations
- High sodium food sources
- How to read a food label

4th Week: Meal Planning and Putting It All Together

- Answering the question: "What should I be eating for my kidney health?"
- Meal planning / Grocery shopping
- Improving your physical movement / activity
- Adjusting to chronic kidney disease

Classes are taught by Michigan Medicine's outpatient renal dietitian: Terrie Holewinski, MS RDN.

Refer to a Renal Dietitian…..

- As early as Stage 3 CKD
- Benefits of Medical Nutrition Therapy (MNT)
  - Limits misinformation
  - **Individualize** nutrition recommendations
  - Gives patient confidence in making good food choices to help preserve their kidney function
  - Improvement in blood pressures and blood sugars may slow down the progression of CKD

Medical Nutrition Therapy and Kidney Essentials Nutrition ZOOM visits at Michigan Medicine

- Cost is fully covered by insurance for ~95% of patients. For the ~5% of patients whose insurance may not cover the charge; the out-of-pocket cost will be $14-$22. If by some chance the patient receives a bill, we have found it is most likely an error or due to a deductible issue which is address with our leadership.


Thank you!