MNT Of Kidney Disease

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Kidney Function

- Organs that filter waste products from the blood
- Involved in regulating blood pressure, electrolyte balance, and red blood cell production in the body
- The kidneys excrete a dietary protein called urea, as well as sodium, potassium, and phosphate
- These substances can build up in the body if kidney function is impaired
- Kidney friendly diet is advised to protect kidneys form further damage and to stay healthy longer

Leading Causes of Chronic Kidney Failure (Long-Term)

- Diabetes (Type 1 and 2): High blood sugar levels damage the tiny blood vessels and filtering units within the kidney, known as diabetic nephropathy.
- High Blood Pressure (Hypertension): Uncontrolled pressure puts chronic strain on kidney blood vessels, causing them to harden and shrink.
- Glomerulonephritis: Inflammation of the glomeruli, which are the kidney's filtering units, leading to damage.
- Polycystic Kidney Disease (PKD): An inherited condition where thousands of cysts grow in the kidneys, destroying tissue.
- Chronic Infections/Obstructions: Repeated kidney infections or chronic blockages from kidney stones or an enlarged prostate.

Common Causes of Acute Kidney Failure (Sudden)

- Sudden blood loss or low blood pressure: Prevents enough blood from reaching the kidneys.
- Severe dehydration or infection (sepsis): Causes rapid functional decline.
- Medications/Toxins: Drug abuse or heavy, long-term use of certain meds like non-steroidal anti-inflammatory drugs (NSAIDs) can cause harm.

Risk Factors

- Age: People over 60 are at higher risk.
- Family History: A history of genetic kidney disease.
- Heart Disease/Obesity: Conditions that impact overall blood flow and vascular health.

Stages of Kidney Disease

Stage	Description	GFR, mL/min per 1.73m²	Action
1	Kidney damage with normal or high GFR	>90	Diagnosis and treatment, slowing progression, CVD risk reduction
2	Kidney damage with mild decrease in GFR	60-89	Estimating progression
3	Moderate decrease GFR	30-59	Evaluating and treating complications
4	Severe decrease in GFR	15-29	Preparation for kidney replacement therapy
5	Kidney failure	<15 or dialysis	Kidney replacement (if uremia present)

Objective of Diet

- Maintain optimal nutritional status
- Prevent protein energy malnutrition
- Slow the rate of disease progression
- Prevention/treatment of complications and other medical conditions
  - DM
  - HTN
  - Dyslipidemias and CVD
  - Anemia
  - Metabolic acidosis
  - Secondary hyperparathyroidism

Kidney Friendly Diet

- Improve appetite & food intake
- General feeling of well being, ↑ed physical activity
- Fewer dietetic restrictions
- ↓ ed dose of medications →Phosphate & K binders, antihypertensive drugs
- ↑es clearance of potential anorexic factors
- Improves serum albumin levels
- Delays dialysis

Diet Focus

Important Nutrients	Individual Differences	Diet Goals
• Calories • Protein • Carbohydrates • Fat/Cholesterol • Na & Fluids • Potassium • Phosphorus • Calcium	• Size • Nutrition • Lab results	•Weight •Good nutrition •Management of - • Blood pressure •Glucose •Minerals •Fluids

Diet to Follow

Need to adjust or limit –

- Sodium
- Protein
- Phosphorus
- Potassium
- Fluid intakes
- Minerals
- Calories
- High Sugar Foods (patients with DM history)

Sodium

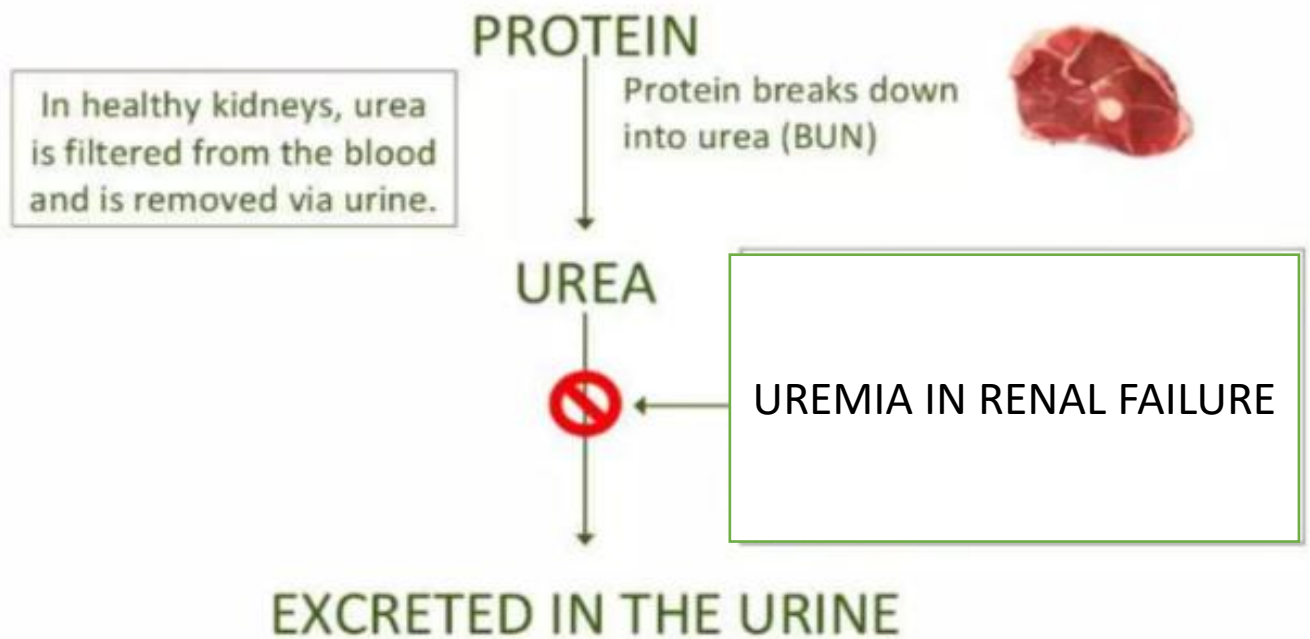
- Comes in the form of “No Added Salt.”
- Controls blood pressure and excessive thirst which can lead to difficulty adhering to the fluid restrictions in your diet
- Excess causes
  - Swelling or puffiness around eyes, hands or feet
  - Fluid weight gain
  - Shortness of breath
  - Rise in blood pressure

Avoid -

- Types of seasoning – table salt, garlic salt, onion salts etc.
- High sodium sauces – barbecue, soya, ketchup, oyster etc.
- Salted snacks – crackers, potato chips, corn chips, popcorn etc.
- Meats – cold cuts, sausages, dried fish etc.
- Processed foods – ready to eat meals, cheese, butter milk, ready to use soups, canned vegetables, pickles, fast foods etc.

Protein

- Nutrient needed for muscle growth and repair
- Helps keep immune system healthy



- In pre-dialysis patients have to be on a low-protein diet.
- During dialysis patients will need diet with more protein
- Generally 5-7 ounces of protein is recommended

Animal sources	Plant sources
poultry , meat , eggs, seafood , milk and cheese	nuts, seeds , legumes, soy and tofu

Phosphorus

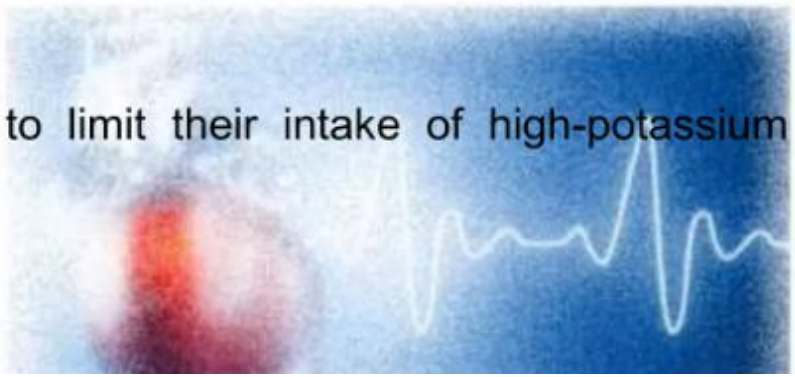
- Mineral found in many foods
- In healthy kidneys it gets rid of in the urine, falling builds up in the blood and may cause many problems including
  - muscle aches and pains,
  - brittle, easily broken bones,
  - calcification of the heart, skin, joints, and blood vessels
- Usually your diet is limited to 1000 mg of phosphorus per day.

- **Limit high phosphorus foods such as:**
  - Meats, poultry, dairy and fish (you should have 1 serving of 7-8 ounces)
  - Milk and other dairy products like cheese (you should have one 4 oz. serving)

- **Avoid high phosphorus foods such as:**
  - Dairy Products
  - Dried beans and lentils
  - Processed meat
  - Dried vegetables and fruits
  - Chocolate
  - Dark colored sodas

Potassium

- Mineral that regulates heart beat and is involved with functioning of muscles and nerves
- Healthy kidney remove excess potassium from blood, failing cause accumulation can cause irregular heart beats and can even cause the heart to stop
- Usually a renal patient's diet should be limited to 2000 mg of potassium each day
- With hemodialysis, patients need to limit their intake of high-potassium foods



Food to Avoid

- Apricots
- **Bananas**
- **Oranges**
- Prunes
- Cantaloupe
- Honeydew
- Dried Fruits
- Avocados
- Chocolate

- **Spinach**
- **Tomatoes**
- **Potatoes**
- Cactus
- Winter Squash
- Pumpkin
- Beans
- Salt Substitutes
- Nuts

Foods to go with

- **Green Beans**
- Onions
- Eggplant
- Broccoli
- Carrots
- **Corn**
- Cabbage
- Lettuce
- Cucumbers

- **Apples**
- Canned Fruit
- **Grapes**
- Watermelon
- **Pineapple**
- Blueberries
- Strawberries
- Popcorn

Fluid Intake

- People on dialysis often have decreased urine output, so increased fluid in the body can put unnecessary pressure on the person's heart and lungs
- Too much fluids can cause swelling, shortness of breath, increased blood pressure
- Not enough fluids can cause dehydration, sever decrease in blood pressure, further damage to kidney
- Between each dialysis treatment, patients are expected to gain a little weight due to the water content in foods (fruits and vegetables)

- The amount of fluid in a typical day's meal (excluding fluids such as water, tea, etc.) is at least 500 ml and therefore expected daily weight gain is between 0.4 – 0.5kg)

- To control fluid intake, patients should:
  - Not drink more than what your doctor orders (usually 4 cups of fluid each day)

  - Count all foods that will melt at room temperature as fluids(Jell-O®, popsicles, and fruit ices).

Minerals

- **Calcium –**

Calcium-rich foods: *Milk, yogurt, cheese, pudding, ice cream, rhubarb, spinach, broccoli, almonds, tofu, canned salmon or sardines (with bones), fortified cereal, bread, or juice*

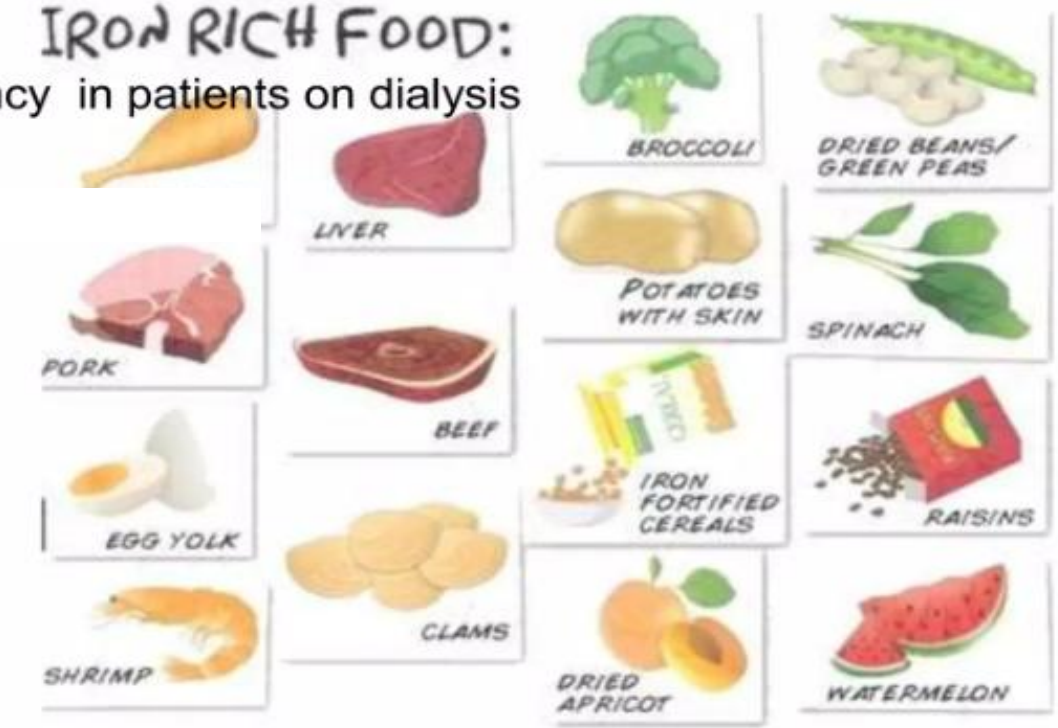
Low phosphorous diet restricts dairy products

When kidney functions declines, much calcium is not absorbed from the gut resulting to bone problems and osteoporosis

- **Iron –**

Iron-rich foods *: Beef, turkey, shellfish, fortified cereals / breads / pastas, beans*

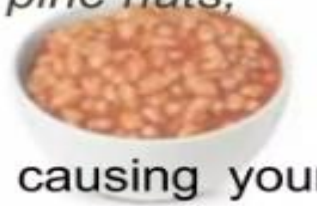
Anemia is a major deficiency in patients on dialysis



- **Zinc –**

Zinc-rich foods *: Oysters, shellfish, Brewer's yeast, wheat bran, pine nuts, pecans*



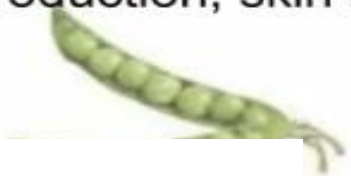


Body may excrete more zinc with kidney disease than usual causing your blood level to be low



Functions including assisting enzymes in digestion

Essential for growth and reproduction, skin integrity and important for a healthy immune system



Calories

- Loosing excess weight help with kidney disease
- It lowers blood pressure and controls diabetes
- Maintain healthy weight by exerting , controlling portion size and limiting high fat and high calorie foods
- Avoid “crash diet”
- Limit weight loss to 1 pound per week

To Increase the Energy Content of Meals

- Add extra oil to rice, noodles, breads, crackers, and cooked vegetables
- Add extra salad dressing
- Non-protein calorie (NPC) supplement can be added

High Sugar Foods

Avoid -

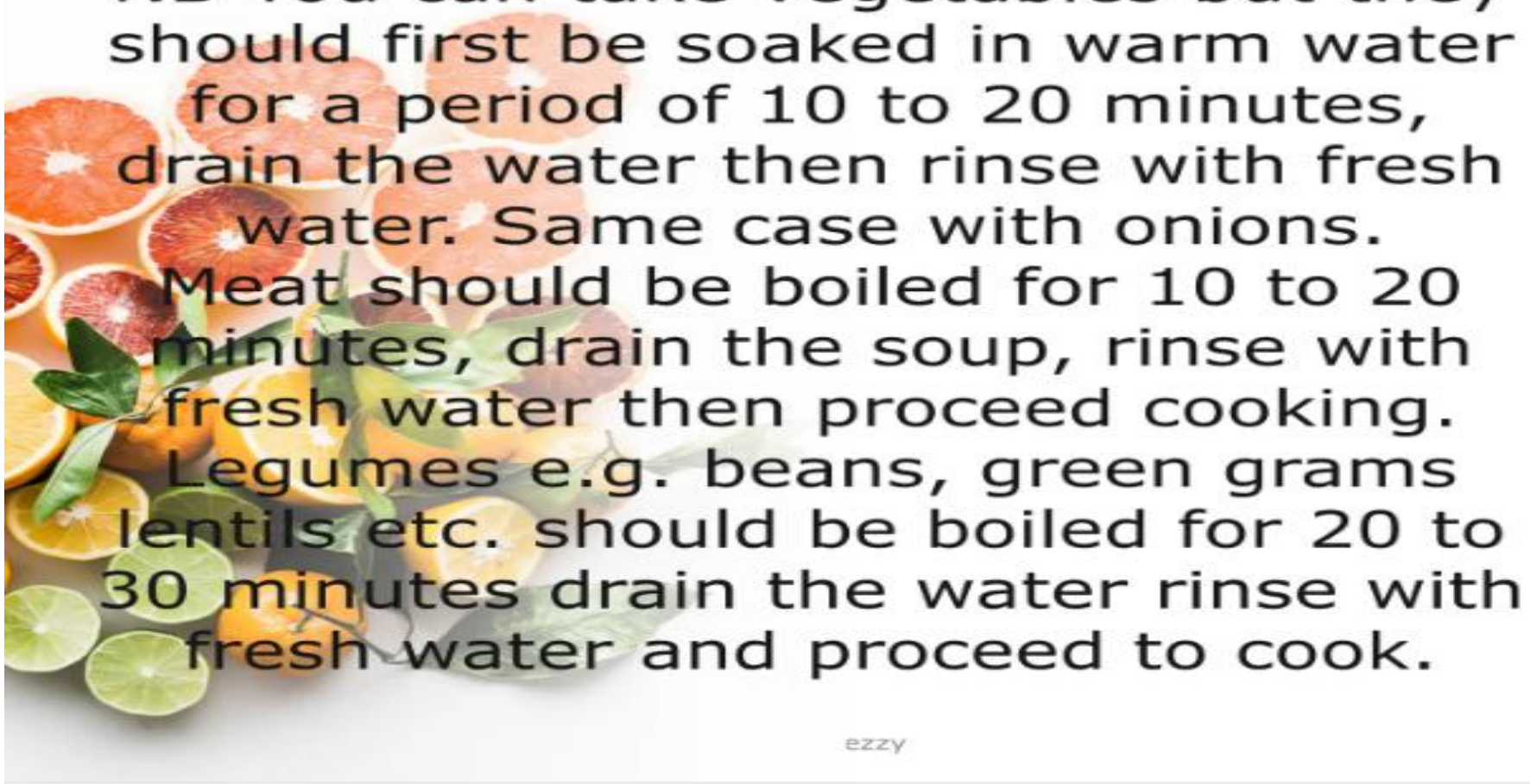
- Sweets
- Canned fruits and juices
- Bakery products
- Instant gravies and sauces
- Frozen dairy products – yogurt, milk shakes, ice cream
- Energy bars and sugar coated cereals
- Dried fruits
- Carbonated drinks
- Fast food
- Jams and jell-o

Diabetes Management

- Common cause
- Don’t skip meals
- Eat at least 3 meals a day
- Avoid high sugar foods such as sweets and juice
- Limit fruits and carbohydrates intake

Restaurant Tips

- Cook at home as much as possible using fresh foods
- Ask for gravy, sauces or salad dressing on the side
- Watch portions
- Ask to prepare food with less or no salt
- Request substitutions for restricted foods


NB You can take vegetables but they should first be soaked in warm water for a period of 10 to 20 minutes, drain the water then rinse with fresh water. Same case with onions.
Meat should be boiled for 10 to 20 minutes, drain the soup, rinse with fresh water then proceed cooking.
Legumes e.g. beans, green grams lentils etc. should be boiled for 20 to 30 minutes drain the water rinse with fresh water and proceed to cook.
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