Diet *DOES* make a difference

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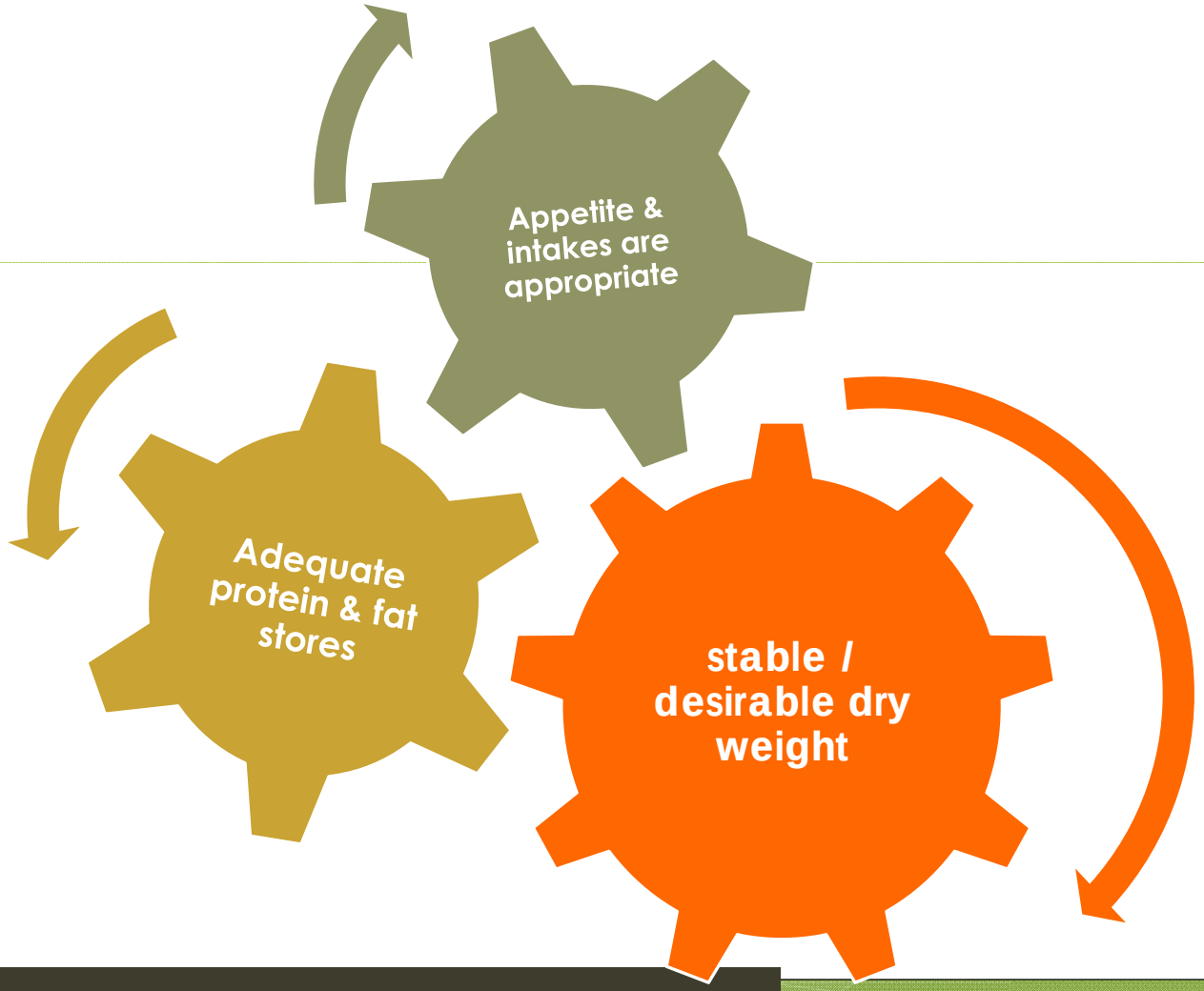
What Do Renal Dietitians Do?

- Assess nutritional status
- Develop a "Plan of Care" for each patient with appropriate interventions and recommendations
- Provide nutrition education and counseling
- Interpret blood test results – these are reviewed with patients and caregivers
- Manage Mineral and Bone Disorder
- Serve on Health Care Team

Nutritional Outcomes

- Achieve & maintain optimal nutritional status
- Manage co-existing conditions / problems
- Enhance quality of life and outcomes
- Prevent complications

Optimal Nutritional Status



Medical Nutrition Therapy

- Calories
- Protein
- Fluids
- Sodium
- Potassium
- Phosphorus
- Calcium
- Vitamins


M.D.
... AND HERE'S YOUR LIST OF THINGS NOT TO EAT.

Calorie Requirements

- Based on actual or adjusted BW
- Adjusted based on the patients need to maintain, decrease, or increase BW as desired or required for transplant
- Individualized for carbohydrate, fat & cholesterol recommendations
- Adequate calories are needed for protein sparing

Protein

Essential for growth, maintenance, preventing infection and anemia

Important for wound healing and repair

Inadequate Protein Intake

Signs and symptoms

- Muscle wasting
- Lack of energy
- Edema
- Weight loss
- Poor wound healing
- Low or declining albumin


Proteins
A.D.A.M.

Protein Requirements

1.2 to 1.5 gm/kg Adjusted Body Weight per day

- 50% to 60% high biological value
- Increased needs in catabolic states

Supplements

- **Protein Powder**
  ProCel, Beneprotein
- **Liquid Protein**
  Pro-Stat, ProSource, LiquaCel, ProMod
- **Liquid Nutritional**
  Ensure, Boost
- **Calorie Dense**
  Ensure Plus, Boost Plus
- **Renal Specific**
  Nepro, Novasource Renal, ReGen

Sodium

Helps regulate body fluid volume and balance

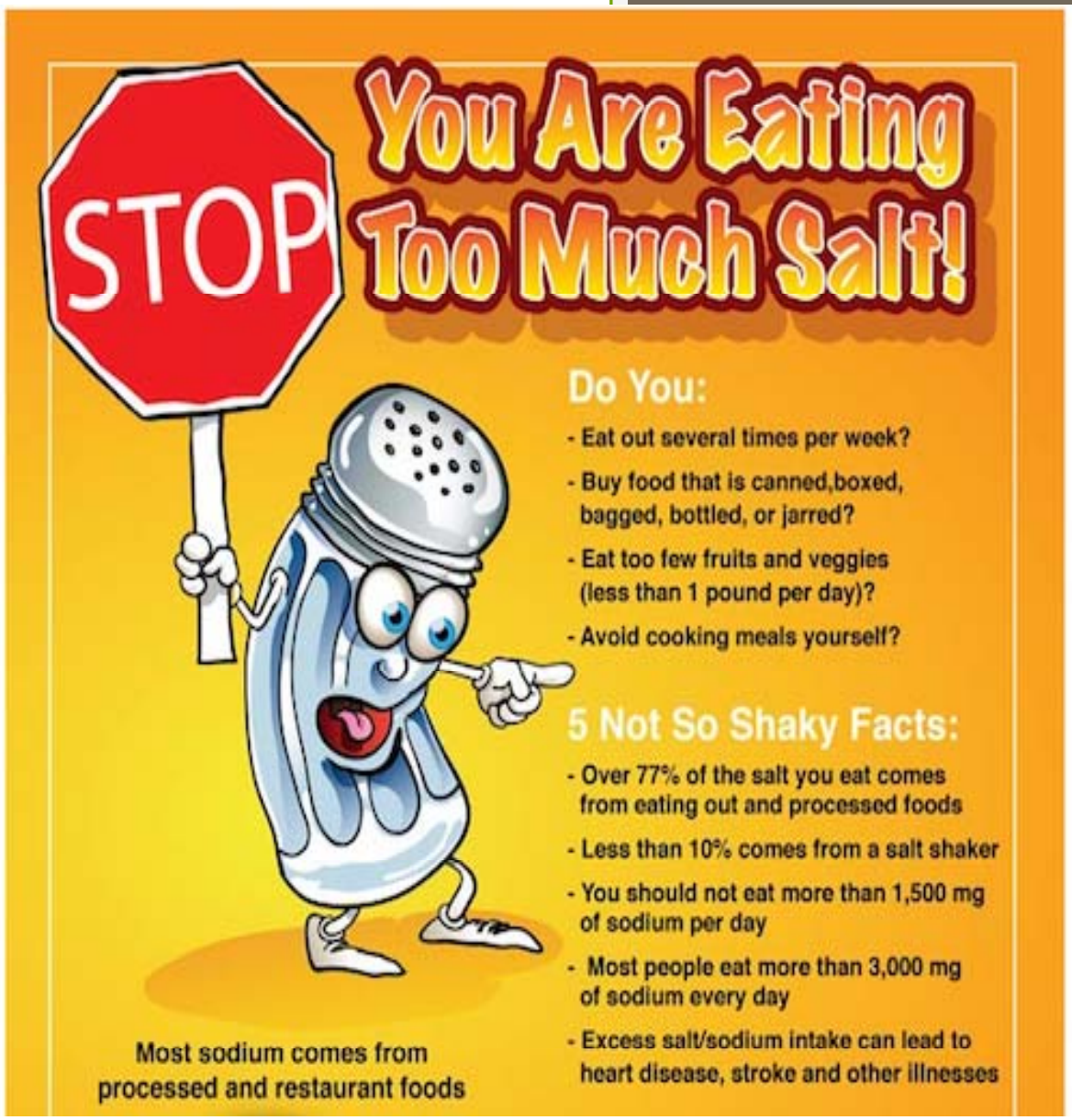
Limiting sodium helps to prevent:

- Excessive thirst
- Fluid retention
- Elevated blood pressure

Sodium Allowance

1.5 to 3.0 gm (1500 to 3000 mg)/day – (may be higher for):

- Patients with residual renal function
- Patients on PD
- Patients on short daily dialysis


STOP
You Are Eating Too Much Salt!
Do You:
- Eat out several times per week?
- Buy food that is canned,boxed, bagged, bottled, or jarred?
- Eat too few fruits and veggies (less than 1 pound per day)?
- Avoid cooking meals yourself?
5 Not So Shaky Facts:
- Over 77% of the salt you eat comes from eating out and processed foods
- Less than 10% comes from a salt shaker
- You should not eat more than 1,500 mg of sodium per day
- Most people eat more than 3,000 mg of sodium every day
- Excess salt/sodium intake can lead to heart disease, stroke and other illnesses
Most sodium comes from processed and restaurant foods

Foods High in Sodium

FLUIDS

Thank God! WATER! Now I know how a dialysis patient feels.

Fluids

Fluid accumulates in the body between dialysis treatments aka Interdialytic weight gain

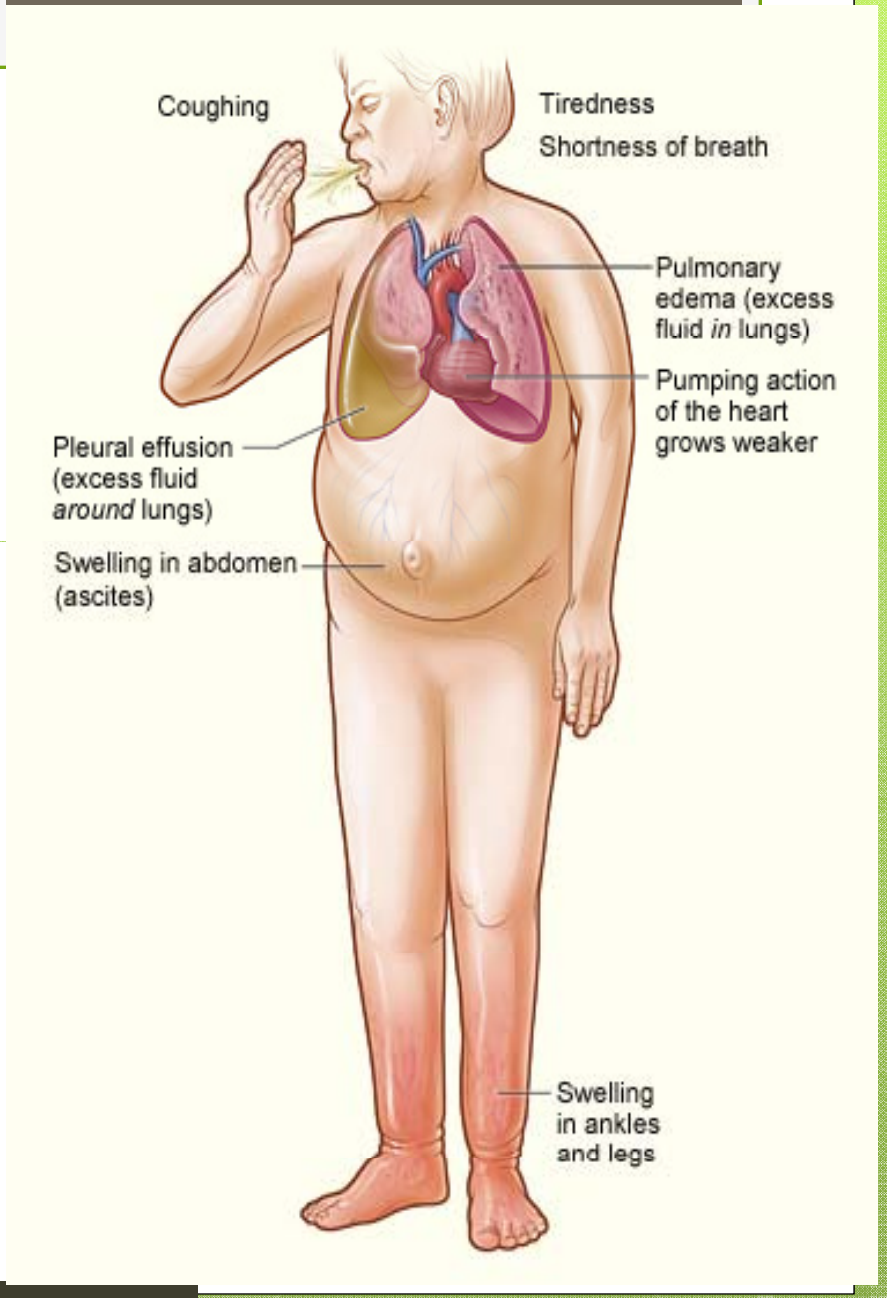
Goal

< 3 to 5% of EDW

or < 4 Kg

Excessive Fluid can cause:

- Edema
- Shortness of breath
- Hypertension
- Congestive heart failure



Fluid Allowance

1.0 to 1.5 liters per day

- Includes all foods liquid at room temperature

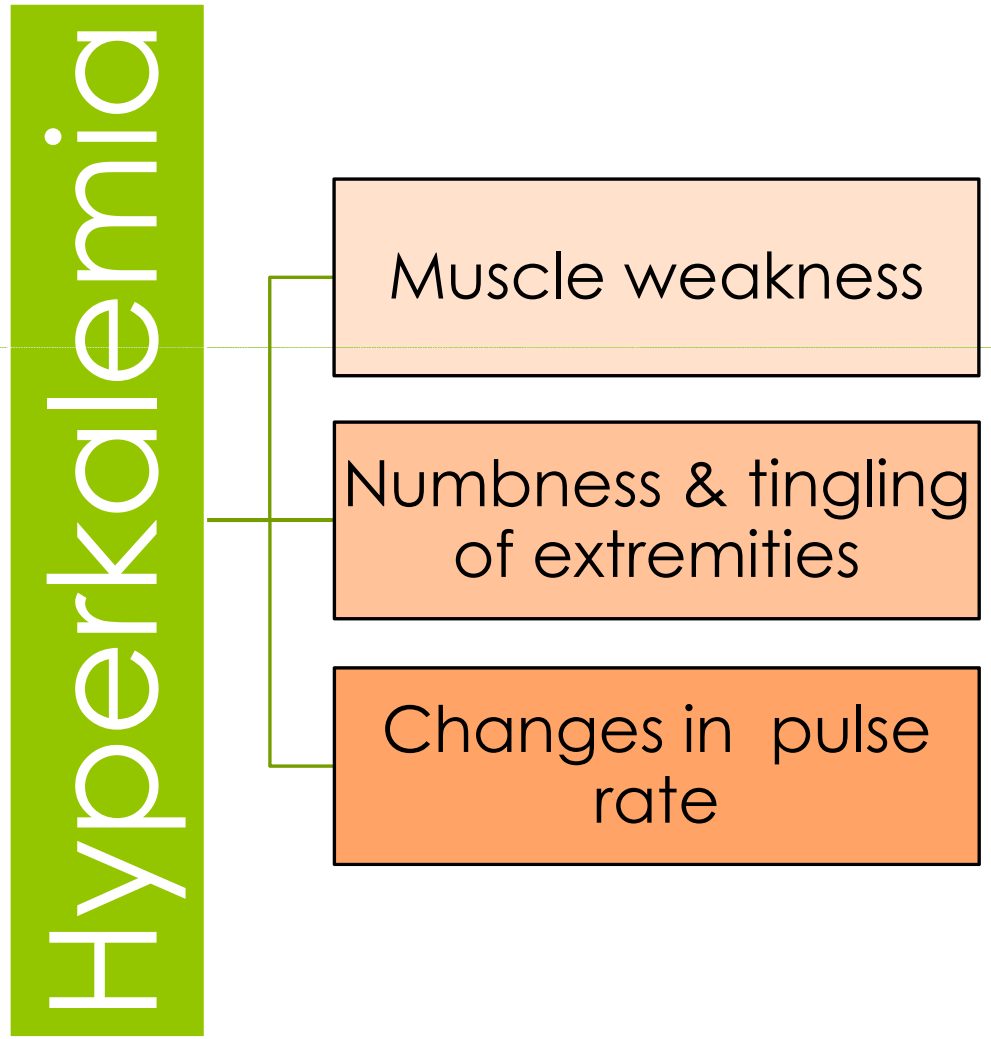
The Solo "Cup"

Potassium

- Mineral required for muscle contraction and nerve function

Goal: Maintain levels between 3.5 and 5.5 mEq/L

High Potassium



Potassium Allowance

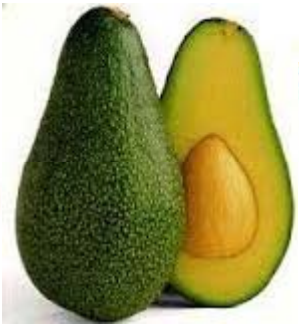
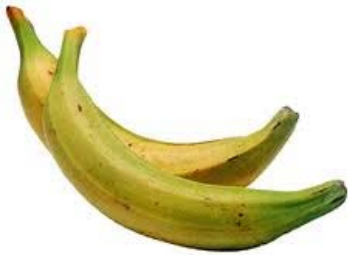
2.0 to 3.0 gm (2000 to 3000 mg) per day

Based on lab values

Allowed more if residual renal function or on peritoneal dialysis

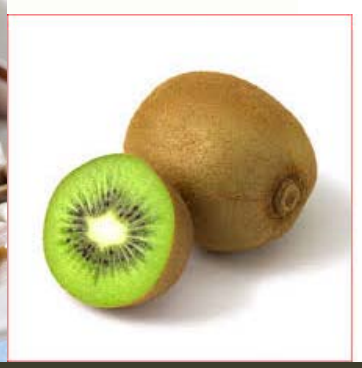
Foods High in Potassium

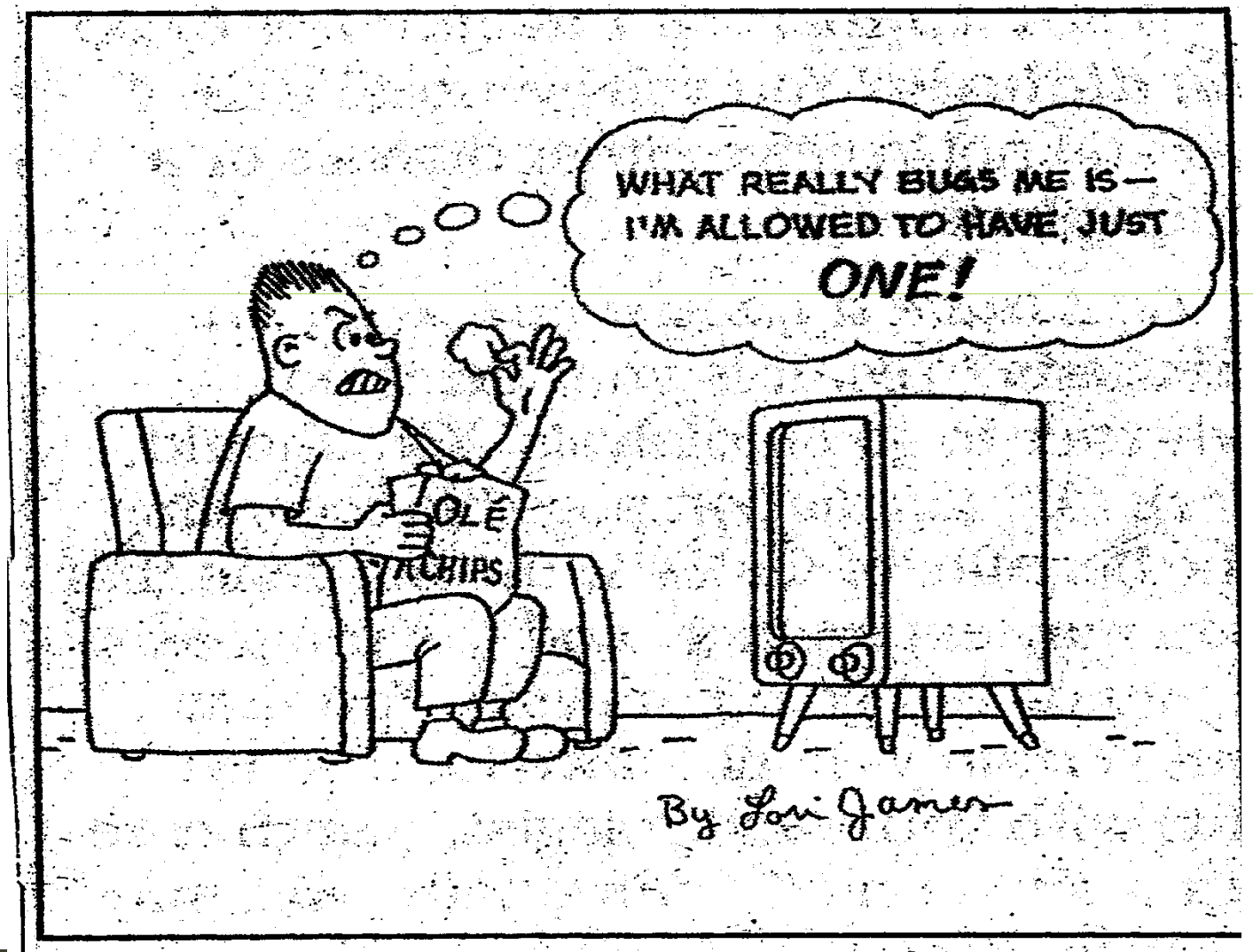







WHAT REALLY BUGS ME IS—
I'M ALLOWED TO HAVE JUST
ONE!
OLÉ
CHIPS
By Lori James

Phosphorus

- Mineral widely available in many foods
- 85-90% found in bones & teeth
- Vital to energy production and storage

Goal:

- Maintain levels between 3.0 and 5.5 mg/dL

Phosphorus Allowance

Phosphorus in common foods:

Intake goal
800 – 1000 mg / day

½ cup milk = ~100 mg

1 ounce cheese = 100 – 290 mg

½ cup beans (pinto, lima) = 125 mg

3 ounces meat = 195 mg

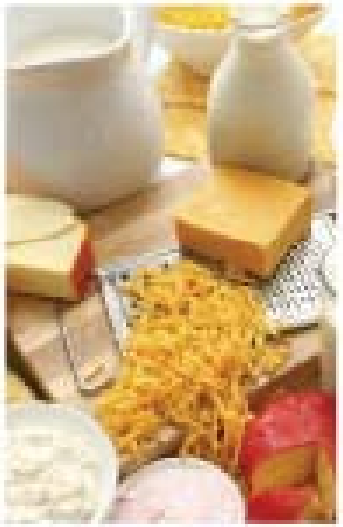
1 ounce nuts = 120 mg

2 tablespoons peanut butter = 120 mg

Foods High in Phosphorus

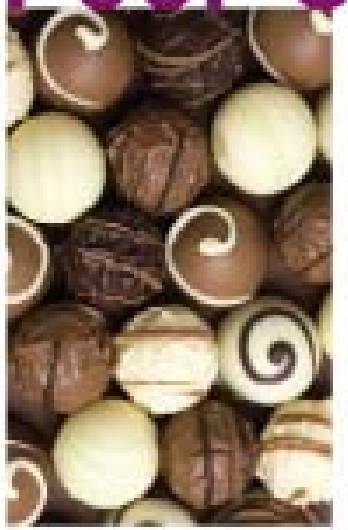
Poor Choices

Processed meats (eg, hot dogs, bologna)



Dairy (eg, milk, cheese, yogurt, ice cream, pudding)

Dried beans/peas (eg, kidney beans, split peas, lentils), nuts, peanut butter, whole-grain breads

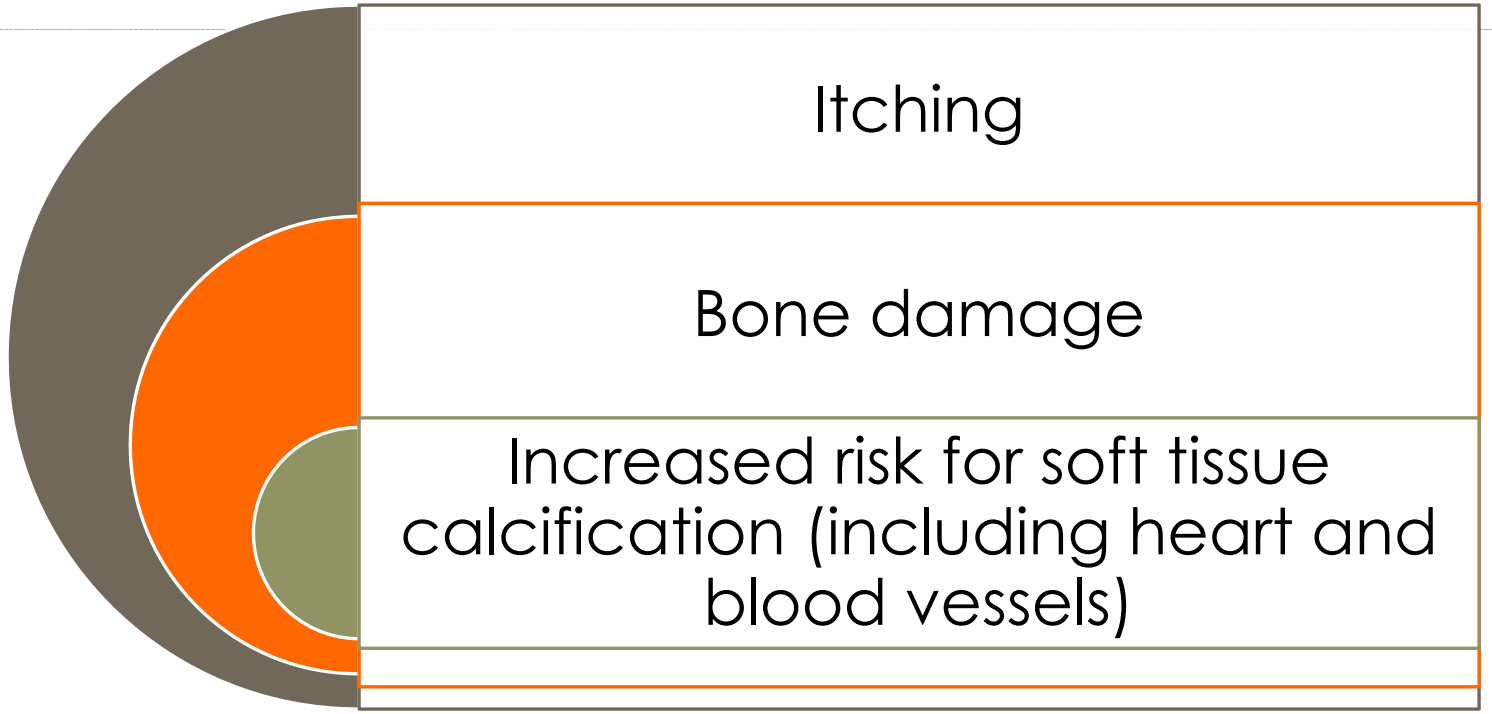


Chocolate

Dark colas, hot chocolate

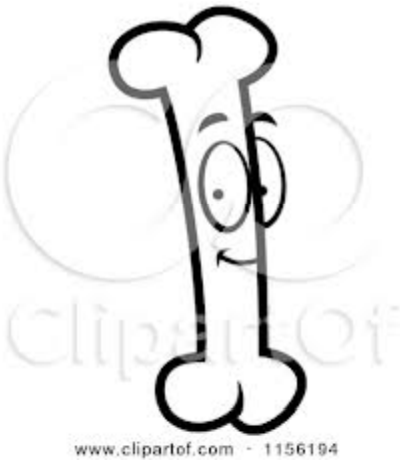
Hyperphosphatemia

Symptoms of elevated phosphorus levels or hyperphosphatemia



Calcium

- Mineral needed for:
  - healthy bones
  - muscle contraction & relaxation
  - proper nerve functioning



Goal:

- Maintain level between 8.4 – 10.2 mg/dL

Calcium Allowance

- 2000 mg/day
- Sources to limit:
  - Dairy products (milk, cheese, yogurt, ice cream)
  - Fortified foods
  - Medications

Calcium

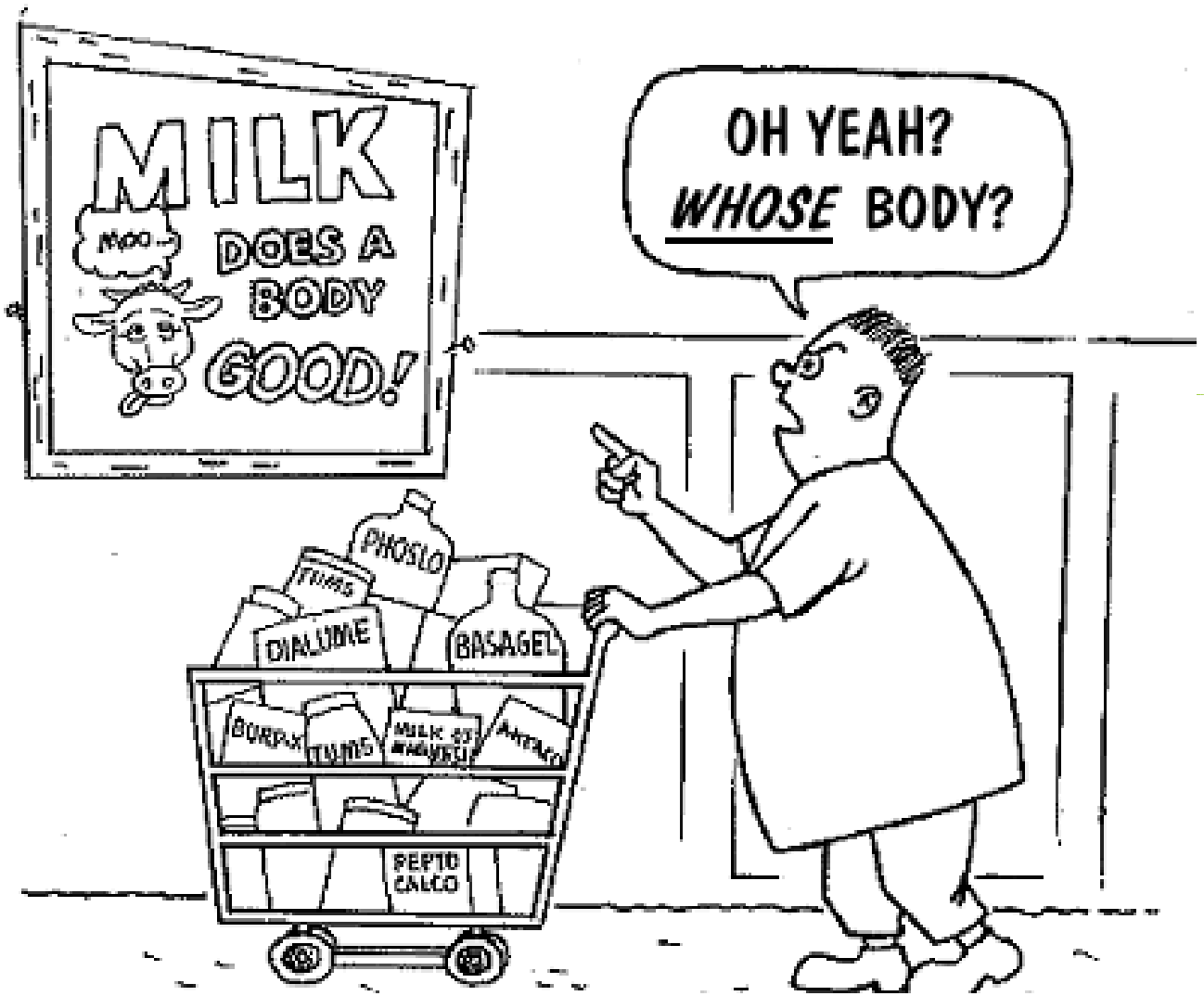
Hypercalcemia

- Increased risk for heart disease
- Increased risk for calcification of soft tissue
- Confusion (when very high)

Hypocalcemia (rare)

- muscle spasms
- numbness
- confusion
- seizures (when very low)

Mineral and Bone Disorder (MBD) Management


MILK
MOO
DOES A
BODY
GOOD!
OH YEAH?
WHOSE BODY?
PHOSLO
TUMS
DIALUME
BASAGEL
BURP-X
TUMS
MILK OF MAGNESIA
ANTACID
PEPTO CALCO

MBD Management

Additional Therapies:

- Phosphate Binders
  - PhosLo®, Tums®, Calcium Acetate
  - Renvela®, Fosrenol®
- Vitamin D therapy
  - IV: Hectorol®, Calcitriol, Zemplar®
  - Oral: Rocaltrol, Hectorol®, Zemplar®
  - Calcitriol
- Calcimimetics
  - Sensipar®

Vitamins

Water soluble

- Supplemented due to diet restrictions and dialysis losses

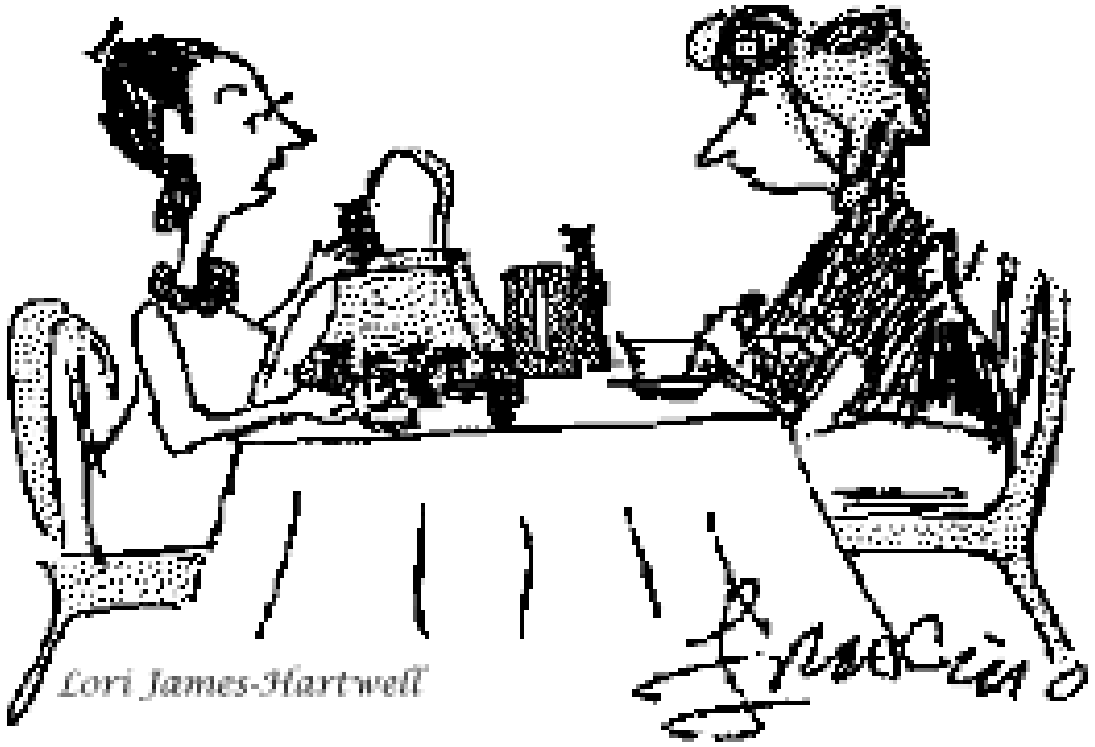
Fat soluble

- Not removed by dialysis, therefore supplementation not recommended

Nutrition and Renal-Related Laboratory Measures

	Healthy	Stage 5 CKD
BUN mg/dL	< 25	50 – 100
Creatinine mg/dL	< 1.6	10 – 18
Albumin g/dL	> 4.0	≥ 4.0
Hb g/dL	14 – 18	10 – 12
Iron Saturation %	> 25	20 – 50
Ferritin ng/ml	12 – 300	>=200
Potassium mEq/l	3.5 – 5.0	3.5 – 5.5
Corrected Calcium mg/dL	8.5 – 10.2	8.4 – 10.2
Phosphorus mg/dL	2.5 – 4.5	3.0 – 5.5
Intact PTH pg/ml	< 100	150 - 600

Lunch at the Transplant Clinic



I take the Cardizem to control my blood pressure, the Neoril and Prednisone so I won't reject my kidney transplant, the Lasix so I won't swell up, the Fosamax to increase my bone density, the Tylenol for my arthritis and the Nephrovite for my daily vitamin. And I have to tell you Susan, I am so happy I don't have to take Tums with every meal anymore!

Questions?


THANK
YOU