

Taking Care of My Bones

This is a recorded webinar

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Welcome

- Thank you for joining the DPC Education Center webinar to learn more about how food can help you take care of your bones.
- This program is for your information, and you will need to talk to your health care team about your specific situation.
- Please complete the brief feedback form at the end of the program which also provides a way to suggest additional topics for the future.





Presenter



- María Eugenia Rodríguez, MS, RD, CSR
- Live in Puerto Rico
- Board Certified Specialist in Renal Nutrition since 2014
- Have worked with
 - dialysis patients since 2009
 - early CKD in private practice since 2013
- Founder of ME Nutrition Services, PSC
 - https://menutritionpr.com



@menutritionpr

Bone and Mineral Disorders in Kidney Disease (CKD-MBD)

- Secondary hyperparathyroidism
- Renal osteodystrophy: exclusively defines alterations in bone morphology that are associated with CKD
- Disorders of vitamin D metabolism
- Hyperphosphatemia
- Hypo- and Hypercalcemia
- Vascular Calcifications









Neyra, J.A. et al. Klotho in Clinical Nephrology. CJASN Jan 2021, 16 (1) 162-176.

Secondary Hyperparathyroidism

Increases bone remodeling, loss of bone density & structural integrity

Causes:

- Arterial stiffness
- Calcifications
- Calciphylaxis
- Increased morbidity and mortality
- Erythropoetin resistant anemia



	Normal range	3a-3b	4	5-5D	
Calcium	9.0-10.5 mg/dL	Every	Every 3-6 months	Every 1-3 months	
Phosphorous	3.0-4.5 mg/dL	6-12 months			
PTH	10-65 pg/mL	Based on baseline & CKD progression	Every 6-12 months	Every 3-6 months	
Alkaline Phosphatase	36-93 U/L	Obtain baseline	Every 12 months or more frequent if 个PTH		
Vitamin D (25-Hydroxy- cholecalciferol)	50-125 nmol/L <30 nmol/L is low	At least, once a year			



Exercise, Balance and Fall Prevention





Phosphorous Intake and Recommendations



- Woman: 850-950 mg
- Men: 1,200-1500 mg

Adequate Intake, 19+ years

• 700 mg



Main Sources of Phosphorous



1 oz meat = 70 mg 1 large egg = 86 mg 3 oz = 210 mg 6 oz = 420 mg

> 1 oz cheese & 4 oz milk = 115 mg



Main Sources of Phosphorous

Dairy

Which one does your body absorb more of?

Plants



Animals



Aditives







Table 2

Phosphorus content of foods with and without phosphorus additives. Results are shown as means and standard errors.

Category	Number of Matched Pairs	Additives	No Additives	Difference
Prepared frozen foods	2	86 (4)	72 (0)	14 (3)
Dry food mixes	3	184 (29)	121 (3)	63 (31)
Packaged meat	5	308 (73)	190 (47)	118 (32)
Bread & baked goods	4	121 (18)	103 (10)	18 (15)
Soup	5	23 (3)	20 (3)	3 (5)
Yogurt	5	126 (23)	77 (2)	49 (25)
Frozen vegetables	4	71 (2)	71 (6)	0 (5)
Juice drinks, shelf stable	5	4 (2)	0 (0)	4 (2)
Cereal	4	313 (62)	176 (47)	137 (63)
Ready serve foods	5	80 (29)	56 (19)	24 (12)
Snacks	5	202 (22)	145 (27)	57 (13)
Cheese	4	753 (87)	407 (8)	347 (79)
Condiments & sauces	5	99 (22)	46 (9)	53 (16)
ALL CATEGORIES	56	178 (27)	111 (15)	67 (14)



León JB, Sullivan CM, Sehgal AR. The prevalence of phosphorus-containing food additives in top-selling foods in grocery stores. J Ren Nutr. 2013 Jul;23(4):265-270.e2.

Impact of Phosphate Additives



• 1788 mg/d

Same diet without phosphate additives

• 1053 mg/d (-736 mg or -41%)

León JB, Sullivan CM, Sehgal AR. The prevalence of phosphorus-containing food additives in top-selling foods in grocery stores. J Ren Nutr. 2013 Jul;23(4):265-270.e2.

Where are phosphate additives?



INGREDIENTS: POULTRY INGREDIENTS (TURKEY, MECHANICALLY SEPARATED TURKEY), WATER, SUGAR, CONTAINS 2% OR LESS OF SMOKE FLAVORING, SALT, CANOLA **OIL, SUNFLOWER OIL, POTASSIUM CHLORIDE,** UM EKTTHORBATE, SODIUM NITRITE, SODIUM PHOSPHATE, ATURAL FLAVORING.

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*FAT CONTENT HAS BEEN REDUCED FROM 8g TO 2.5g PE **SODIUM CONTENT REDUCED FROM 180mg TO 105mg

Nutrition Facts Serving Size 2 slices (18g) Servings Per Container about 9

Amount Per Serving

Calories 30 Calories from Fat 20

4%

3%

3%

4%

0%

0%

6%

% Daily Value* Total Fat 2.5g Saturated Fat 0.5g Trans Fat Og Cholesterol 10mg

Sodium 105mg

Total Carbohydrate Og

Dietary Fiber Og Sugars Og

Protein 3q

Not a significant source of vitamin A, vitamin C, calcium, and iron.

"Percent Daily Values (DV) are based on a 2,000 calorie diet.

Practice Points

Avoid foods and beverages with phosphate additives

Look for substitutes or consider making from scratch

Boil meats and throw away the water. This can reduce the phosphate content by 50%. You can also use a pressure cooker.

Practice Points

- Prefer less processed foods, less fast foods
- Cook more at home
- Be mindful of portions of animal protein and dairy products
- Include healthy plant foods: whole grains, nuts, seeds, beans, fruits and vegetables

Medications for Mineral and Bone Management

Phosphate binders

With and without calcium

- Vitamin D3
- Vitamin D analogs
- Calcimimetics

Parathyroidectomy

Conclusion

The DPC Ed Center thanks you for your interest in this program and for completing the Feedback Form

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