

Medical Nutrition Therapy Diet:

Hyperparathyroidism

1. Purpose

a. Nutrition Indicators: high levels of calcium (hypercalcemia), joint pain, bone loss, osteopenia, muscle weakness, abdominal discomfort, N/V, constipation, lack of appetite, kidney stones, excessive thirst, excessive urination, anxiety, memory loss, fatigue, peptic ulcers (calcium can increase gastric juices)

b. Criteria to Assign the Diet: Diet can be used to treat the symptoms related to the condition but hyperparathyroidism is treated through medication or surgery, which typically treats the nutrition related complications such as hypercalcemia

c. Rationale for Diet: Treat disease symptoms, nutrition deficiencies, or nutritional side effects of medication. Focus on the prevention or treatment of osteopenia as applicable.

2. Population

a. Overview: inherited endocrine problem, twice as common in women, risk increases with age, prevalence of disease is decreasing

b. Disease Process: Hyperparathyroidism a condition in which the parathyroid glands, located in the neck, secrete too much parathyroid hormone (PTH). Parathyroid hormone regulates the amount of calcium and phosphorus (minerals necessary for strong bones and teeth) in the body, by controlling how much calcium is taken from bones, absorbed in the intestines, and lost in urine. When too much parathyroid hormone is secreted, levels of calcium in the blood and urine rise, and bones may lose calcium, leading to osteoporosis

c. Biochemical and Nutrient Needs: Diagnosed with blood test that shows high levels of calcium and parathyroid hormone. Nutrient needs is patient dependent.

3. General Guidelines

a. Nutrition Rx: No defined diet prescription as condition is usually treated with medication. Treat nutrition related symptoms as needed, monitor calcium levels and organ functioning; suggest a multivitamin and following a well balanced diet; diet high in calcium and vitamin D to help with bone loss and prevention of osteopenia.

b. Adequacy of Nutrition Rx: N/A

c. Goals: Maintain or improve patients overall health and condition and treat any nutrition related symptoms or side effects. Main concern is preventing anymore bone loss and increasing bone support.

d. Does it Meet DRI: N/A

4. Education Material

a. Nutrition Therapy: Patient Specific depending on symptoms and nutrition diagnosis. Typically, once condition is treated, patients should be educated on ways to increase bone support and prevent bone loss.

b. Ideas for Compliance: As with all diets, set short term and long term goals, find ways to reward compliance, encourage support from family and friends, etc.

5. Sample Menu

a. Foods Recommended: Patient specific yet common suggestions include:

- Fruits and Vegetables

- Omega-3 FA (almonds, legumes, dark leafy greens, oats, sardines, prunes, apricots)
- Calcium citrate, vitamin D, and Ipriflavone (soy isoflavones) for bone support and treatment of bone loss

b. Foods to Avoid:

- Refined foods such as white breads, pastas, and sugar
- Reduce or eliminate intake of trans-fatty acids
- Avoid coffee and other stimulants such as alcohol and tobacco
- Limit carbonated beverages- they are high in phosphates which can leach calcium from bones

c. Example of a meal plan

Breakfast	½ C. Orange Juice, ½ C. cooked oatmeal with 2 T. raisins, 2 Slices of Whole wheat toast, 1 C. Skim milk
Lunch	2 slices of Whole wheat bread with sliced tomato and lettuce, 4 oz. of sliced turkey breast; ½ cup of carrots; ¼ C. cottage cheese; ½ C. apple juice, 1 C. Skim milk
Dinner	4 oz. broiled halibut, 1C. Brown rice, 1 C. steamed broccoli, 1 banana, 1 C. salad with romaine, sliced carrots, cucumbers, mushrooms, green pepper, 2 t. oil and vinegar, 1 C. skim milk
Snack	½ C. Low-fat yogurt, 1 T. peanut butter with 1 small apple

6. Websites

a. Organizations with Websites:

- <http://www.mayoclinic.com/health/hyperparathyroidism/DS00396>
- <http://www.umm.edu/altmed/articles/hyperparathyroidism-000086.htm>
- <http://familydoctor.org/online/famdocen/home/common/hormone/251.html>

b. Government Websites:

- <http://www.mypyramid.gov>
- <http://endocrine.niddk.nih.gov/pubs/hyper/hyper.htm>
- <http://www.eatright.org/>

7. References

a. Journal articles references

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- Akinci, B., Comlekci, A., & Tankurt, E. (2009). Hypercalcemia of primary hyperparathyroidism was treated by cinacalcet in a patient with liver cirrhosis. *Experimental and Clinical Endocrinology & Diabetes*, 117(3), 142-145.
- Larsson, K., Ljunghall, S., Naessen, T., Lindh, E., & Persson, I. (2009). The risk of hip fractures in patients with primary hyperparathyroidism: A population-based cohort study with a follow-up of 19 years. *Journal of Internal Medicine*, 234(6), 585-593.
- Lips, P. (2001). Vitamin D deficiency and secondary hyperparathyroidism in the elderly: Consequences for bone loss and fractures and therapeutic implications. *Endocrine Reviews*, 22(4), 477.
- Rao, D. S., Agarwal, G., Talpos, G. B., Phillips, E. R., Bandeira, F., Mishra, S. K., et al. (2002). Role of vitamin D and calcium nutrition in disease expression and parathyroid tumor growth in primary hyperparathyroidism: A global perspective. *Journal of Bone and Mineral Research : The Official Journal of the American Society for Bone and Mineral Research*, 17 Suppl 2, N75-80.