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Generalized Recommendations for Stone Formers

Almost everyone knows someone who has had kidney stones. The kidneys filter the blood to remove excess mineral salts and other soluble (dissolvable) wastes. The kidneys also produce the urine that dissolves these wastes which are excreted through the urinary tract. Kidney stones form when the urine becomes so saturated with a certain mineral that no more of it can dissolve into the urine (like trying to dissolve too much sugar in your iced tea). The undissolved portion of the mineral forms crystals that then clump together and grow into hard stones. This condition is medically known as urolithiasis or nephrolithiasis. Kidney stones usually develop in the kidneys, however they remain unnoticed within the kidney. It is only when they begin to pass down the ureter that they can cause trouble.

When kidney stones are quite tiny, they may pass unnoticed with the urine. Often however, they grow too large to pass easily through the urinary tract, and can be quite painful. The stone itself cannot be felt, but the blockage caused by them is what causes the pain. In some cases, kidney stones cannot pass on their own, and treatment with specialized medical equipment or surgery may be necessary.

50% of first time stone formers will go on to form another stone within 5 years. Therefore, a major part of the treatment for this condition is aimed at preventing recurrences. There are various types of kidney stones. Because treatment for each differs, it is important to determine the stone's mineral content and to identify any medical conditions that may have contributed to stone formation. Preventive treatment may be with medications and/or changes in the diet.

About 80% of all kidney stones are composed of calcium and other minerals, usually a combination of calcium and oxalate. Other common stone types include Uric Acid, Calcium Phosphate, Triple Phosphate, and Cystine. In some cases dietary adjustments help to prevent the recurrence of these types of stones. The ideal dietary manipulations cannot be given until your doctor knows the chemical composition of your stone, and specialized urine testing. Having said that, it is still possible to give some general dietary recommendations that help stone formers.

Special Considerations

Fluid: This is the most important preventive measure for all patients who develop kidney stones. It hinders the formation of stones by diluting the urine. For example, more sugar can be dissolved in a full glass of iced tea than in a half glass. Patients should drink enough fluid to produce two quarts or more of urine each day. As a guideline, drink 8-10 oz of fluid every hour while awake, and 8-10 oz once during the night if awakened for some reason. At least 50% of the total fluid intake should be water. In warmer climates and for physically active people, an even higher fluid intake is recommended.

Sodium (Salt): Salt causes excess secretion of calcium into the urine and raised the risk for calcium type stone. Reducing sodium in the diet appears to reduce the amount of calcium excreted in the urine. Consequently, people who develop stones containing calcium may benefit from keeping sodium intake between 2300 to 3500 mg a day. Try to use no extra salt at table, or in preparation of food. Use 1/2 recommended salt in recipes, and canned vegetables should be drained and washed. Avoid colas as they contain a lot of salt. Soups are very high in sodium.

Calcium: It is commonly believed that a high calcium diet is responsible for forming kidney stones. This has been recently proven to be false. In fact, a low calcium diet actually promotes calcium based kidney stones. Therefore, you should consume calcium in moderation. The body uses dietary calcium for many important functions. Any excess that has been absorbed is excreted or passed through the kidneys. The biggest portion of calcium in the diet comes from milk and foods made from large amounts of milk, such as cheeses and yogurt. The calcium in these foods is usually easily absorbed. Other foods, such as dark green leafy vegetables, contain significant amounts of calcium. Certain antacids and over-the-counter medications also contain calcium that may or may not be in a form the body can absorb. Under normal circumstances, the body does not absorb more calcium than is needed. men are advised to limit calcium intake to 800 mg per day.

Diets for managing calcium kidney stones have adequate nutrients for most healthy adults. However, the Recommended Dietary Allowance (RDA) for calcium may not be met in post-menopausal, pregnant, or breast-feeding women; or in people under 25 years of age. Calcium supplements are generally not recommended, unless approved by a physician. Prior to menopause, women should limit calcium to 1000 mg per day; and after menopause, these women should have 1200 mg of calcium a day. If Calcium supplements are going to be used in a stone former, the best choice is Citracal (calcium citrate) because the citrate is protective against stones.

Animal protein: A diet high in animal protein affects certain minerals in the urine that may promote the formation of kidney stones. Therefore, people who tend to develop kidney stones should avoid eating more protein than the body needs each day. The physician or registered dietitian can recommend a daily protein intake for individual patients.

Quick Facts

- ❖ Drink more fluids, 50% of the total fluid intake should be water
- ❖ Drink at least 10-12 eight oz. glasses of water each day.
- ❖ This works out to about 3 liters (~ 1 gallon) of water per day, and more if you are in the sun, or active.
- ❖ A rough gauge is the color of your urine. If it is anything but clear looking urine then you are not drinking enough.
- ❖ Well water is protective against stones due to it's high magnesium content. Softened water promotes kidney stones
- ❖ Limit salt intake to 2-3gm per day. No table salt, watch canned food, colas, soups.
- ❖ Moderation in Calcium Intake 2300-2500 mg/day - watch milk, ice cream, cheese, puddings, cream soups.
- ❖ Lessened Protein Consumption - Meat, fish, and fowl should be limited to 6-8 ounces a day. Eggs limited to one a day.