

Urologic Surgical Associates of Delaware

Specializing in Robotic Surgery

Metabolic Evaluation of Stones

Overview

It can be very difficult to diagnose how your body makes kidney stones. But in some cases this can and should be attempted. Having a kidney stone puts you at risk (at least 30%) of having more stones. The metabolic evaluation for stone formation requires extensive blood and urine studies but often fails to demonstrate a specific way in which your risk of stone formation can be reduced. For these reasons not everyone who has a kidney stone needs to have a metabolic evaluation. Those who should be considered for a metabolic evaluation include those who have had multiple stone events (three or more, in general) and those who have their first stone event at an early age (before age 30 years).

Fluid Intake

Everyone who has passed a kidney stone can benefit from increased fluid intake. Stones are essential salts coalescing in the urine to form a solid. When making a powdered drink mix, like Kool-Aid, the less water in the solution the more likely you are to see the powder form a solid at the bottom of the glass. Similarly, the less urine you make the more likely the common salts in your urine are to form a solid stone in your kidney. You should drink 6-8 glasses (8 ounces each) of water or lemonade a day. Caffeine and alcohol can be dehydrating and increase your risk of stones. Dark teas (but not green teas) and colas may increase your oxalate intake and therefore, increase your risk of stones.

Stone Analysis

If you capture a stone that you've passed or if you have a stone removed by surgical intervention that stone or stone fragment can be analyzed in the lab. The stone analysis can be a great starting point for the metabolic evaluation and can also help determine if metabolic evaluation will be worthwhile. Even if you will not be going forward with a full metabolic evaluation, stone analysis should be performed at least once if a stone or stone fragment is available.

Blood Studies

Blood chemistries can be done to evaluate the possible impact on stone formation of your parathyroid gland function, calcium metabolism, magnesium metabolism, uric acid metabolism, and other common metabolic factors. An initial screening set of blood studies may lead to further detailed blood studies.

Urine Studies

A simple urinalysis and urine culture can screen for infection as a cause for stones. 24 hour urine collections look at metabolic causes for stone formation. A twenty-four hour urine collection involves collecting all of your urine over a twenty-four hour period in a container at home. This comprehensive 24 hour specimen can help determine how much

of each important metabolite is appearing in your urine over a full 24 hour period. The metabolites of interest include those that can contribute to stone formation, such as calcium, oxalate, uric acid, phosphate, and cysteine. Other metabolites of interest include those that can inhibit stone formation, such as magnesium and citrate.

Stone Types

Approximately 75% of stones are calcium oxalate. Other common types of stones are calcium magnesium phosphate, uric acid stones, and cysteine.

Metabolic Evaluation Consult

We refer our metabolic evaluation patients to Dr. Arun Malhotra (4923 Ogletown-Stanton Rd, Newark DE (302) 225-0451) or Dr. Manish Garg (2006 Limestone Rd. Suite 7, Wilmington DE (302)-355-2383. These physicians are nephrologists and they are expert in metabolic stone evaluations in Delaware. Dr. Malhotra or Dr. Garg will likely have some specific dietary recommendations to limit your risk of future stone formation. We work closely with both physicians to coordinate your stone management.