

## Kidney Stones and Diet

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There are several types of kidney stones. The most common type of stone contains calcium oxalate crystals. These are formed when there is too much calcium or oxalate in the urine. Experts used to think that a diet low in calcium would help prevent calcium-containing stones from forming. The reasoning was that if less calcium is available to be absorbed from the intestines, then less calcium would be excreted in the urine. Experts are now learning that this is not necessarily true. In fact, a normal intake of calcium can actually **HELP** prevent Kidney stones

### How Does Calcium Help?

Experts now think that limiting calcium in your diet is not necessary to prevent stones. This is important because the risk of developing osteoporosis, as you get older is much greater if you do not get enough calcium.

Oxalate is another substance that is excreted in the urine. Experts now think that too much oxalate in the urine is very important in kidney stone formation. The body forms oxalate, but it is also found in food. When eating foods that contain oxalate, the oxalate is absorbed and then excreted in the urine. Dietary calcium can help because calcium binds up the oxalate in the gut. When this happens, the bound oxalate is absorbed. This lowers the chance of kidney stones forming.

### What Can I Do?

Talk with your physician and pharmacist. They can help you find ways to prevent kidney stones. Your physician will probably order some tests. These tests will help determine which type of kidney stones you have. This is often necessary in order to decide what steps to take to prevent future stones from forming. There are several dietary changes that can help prevent stones, depending on what type of stones you have. Don't change your diet without talking with your healthcare provider first. Together, you can decide which diet changes are best for you. Your physician might also give you some medication to help prevent kidney stones.

Getting plenty of fluids is extremely important. Water is best. Fluids help to dilute the urine and flush away substances that form kidney stones. Crystals are much less likely to form when the urine is diluted. You should try to drink 2 to 3 liters of water each day.

If you have calcium oxalate kidney stones, your physician may want you to limit how much animal protein and sodium you eat. You should limit your intake of animal protein to 8 ounces or less each day. You should also try to keep your intake of salt to 3 grams or less each day. Eating too much animal protein and salt increases your chance of forming kidney stones.



Your physician may also want you to limit your intake of foods that are high in oxalate. Decreasing the amount of oxalate you get from foods you eat will decrease the amount of oxalate that is absorbed. Examples of these types of foods are nuts (walnuts, peanuts, almonds, hazelnuts, etc.), spinach, okra, beets, rhubarb, strawberries, cranberries, soy, wheat bran, brown rice, chocolate, coffee, tea, and cocoa.

If your physician says it is okay to take a calcium supplement, try a product containing calcium citrate (Citracal, etc.) Citrate is one of the substances in the urine that can help prevent kidney stones from forming. You will need to take calcium supplements with meals, so that the calcium is available to bind the oxalates in the intestines

(Created 09/02)

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This handout provides a general overview on this topic and may not apply to everyone. To find out if this handout applies to you and to get more information on this subject, talk to your family doctor.

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