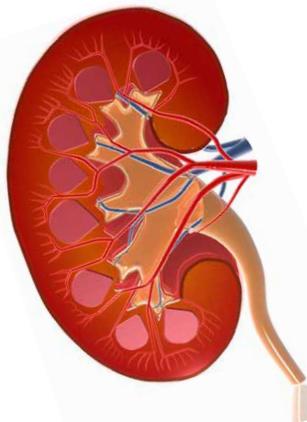


# ON TRACK WITH BARIX

Support to Keep You On Track With a Healthful Lifestyle



## Kidney Health

Keep your urinary tract healthy after bariatric surgery.

**B**ariatric surgery, gastric bypass in particular, changes the composition of your urine, upping the odds that you will form kidney stones.

Kidney stones can form when there's a change in the normal balance of water, salts and minerals found in the urine, allowing crystals to form. These crystals can combine to form stones that range in size from a sugar crystal to much larger stones. Kidney stones may pass without any sign and are rarely noticed unless they cause a blockage or break loose and move into the narrow ducts leading to the bladder. When this happens, severe back, belly or groin pain, frequent painful urination, blood in the urine or nausea can occur.

Not all stones are equal. Kidney stones can form different compounds that crystallize and form stones. Knowing which types of kidney stones you are at higher risk for is important so you can make alterations in your diet that will lessen your risk. Stones can be one of four types.

- **Calcium stones** are by far the most common type of kidney stone. They can form when either calcium oxalate or calcium phosphate bind to-

gether in the urine. Calcium oxalate stones are more common, especially after gastric bypass surgery. Calcium oxalate stone formation may be caused by high calcium and high oxalate excretion.

- **Uric acid stones** form when the urine is especially acidic. A diet rich in animal protein such as meats, fish, and shellfish may increase uric acid in urine. If uric acid becomes concentrated in the urine, it can form a stone by itself or along with calcium.
- **Struvite stones** result from kidney infections.
- **Cystine stones** result from a genetic disorder that causes cystine to leak through the kidneys and into the urine.

The good news is that studies have identified the type of kidney stones most common following bariatric surgery—calcium oxalate stones. At least three factors seem to contribute to this.

1. Oxalate (found in many foods) seems to be hyper absorbed in the intestinal tract after gastric bypass surgery. This oxalate finds its way through the body and into the urine



for excretion, creating a high urine oxalate concentration. When the conditions are right, oxalate will form crystals that can group together to form kidney stones.

2. Citrate levels in the urine tend to be lower after gastric bypass surgery.
3. Urine volume tends to be lower after gastric bypass surgery.

The bad news is that it appears that the risk of kidney stones increases, rather than decreases, over time after bariatric surgery. More good news—there are some simple changes that you can make to your diet that will minimize your risk.

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### Here's what you can do:

- 1. Drink plenty of water and other fluids.** Water helps to dilute oxalate in the urinary tract and prevents crystals and stones from forming. Increasing the recommendation from 64 oz of fluid a day to 100 oz of fluid a day and spreading fluid intake throughout the day will help to dilute your urine. For most, drinking this much fluid right after surgery just isn't possible. That's okay; this is a long-term goal since the risk of forming stones isn't as likely right after surgery as it is months and years later.
- 2. Limit or manage the intake of foods high in oxalate.** Oxalate is more readily absorbed after gastric bypass surgery and later has to be excreted in the urine. Many foods contain small amounts of oxalate and it is impossible to avoid oxalate altogether. It does make sense to limit your intake of foods that contain a high concentration of oxalate. Another option is to manage the absorption of high oxalate foods by pairing them with calcium-rich foods. This will cause the oxalate to bind with the calcium in the intestine, preventing absorption. Food high in oxalate include black tea, nuts, dark leafy greens, rhubarb, beets, chocolate, sweet potatoes, cranberries, soy products, potato chips, French fries, bran, fiber-containing cereals and chocolate.
- 3. Increase your intake of citrates.** An easy way to do this is to add lemon or lime juice to the water you drink.

Two oz of pure lemon or lime juice diluted twice a day should do the trick. Increasing your intake of fresh fruits and vegetables will also help.

- 4. Consume more servings of low-fat dairy.** Dairy products are a good source of calcium, which can limit the absorption of oxalates and is a healthy source of protein. Even though most kidney stones contain calcium, eating moderate amounts of calcium-rich foods decreases the risk of kidney stones forming. Taking calcium citrate supplements with meals (up to 500 mg 3 times a day) may help if you don't tolerate dairy.
- 5. Reach your daily protein goal, but don't overdo it.** Too much protein can cause the kidneys to excrete more calcium and less citrate into the urine, creating an environment favorable to stone formation. To minimize this effect, space your protein intake throughout the day.
- 6. Watch sodium intake.** Sodium causes the kidneys to excrete more calcium into the urine. Keep in mind that most sodium doesn't come from the salt shaker, but from processed foods. Limit sodium to 2300 mg a day or less.
- 7. Don't take excessive vitamin C supplements.** When the body gets more vitamin C than it needs, some of it breaks down into oxalate. No need to limit food sources of vitamin C.
- 8. Take a probiotic.** Many of the good bacteria in our intestines break down oxalate—decreasing absorption.



*"To insure good health: eat lightly, breathe deeply, live moderately, cultivate cheerfulness, and maintain an interest in life."*

William Londen



## In the News

New research suggests that current recommendations for protein intake in healthy populations may be too low. In a recent study, the focus was on protein as an essential component of a healthy diet—helping people stay full longer, preserving muscle mass (when combined with exercise), and serving as a key nutrient for important health outcomes and benefits. In weight loss management, adequate protein (while ensuring that caloric intake is within a healthy range) has been shown to preserve muscle mass without gain in fat mass.

Current government recommendations are 56 grams per day for adult men and 46 grams per day for adult women. Barix Clinics individualizes protein goals based upon height and ideal body weight—assuming that a taller person has more protein to maintain.

## SUBSCRIBE

On Track With Barix

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## Reconstructive Surgery

To receive a **FREE Reconstructive Surgery Guide**, call **800-282-0066** or send us an email at [rc@barixclinics.com](mailto:rc@barixclinics.com) with your name and contact information. Our reconstructive surgery program is currently performed at our centers in Michigan, and Pennsylvania.

**Call us today for more information!**

## Share Your Success

Tell us about how your life has changed as a result of your weight loss surgery. Your story may be printed in this publication or on one of our websites and can serve as an inspiration to others.

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We'd love to hear from you!

## QUESTIONS ABOUT FINANCING YOUR SURGERY?

Call a Barix Patient Service Representative  
**800-282-0066**

## Recipes

### Bean Salsa

1-15 oz can black beans (no-salt-added or organic), drained and rinsed

1-15 oz can pinto beans (no-salt-added or organic), drained and rinsed

1-11 oz can yellow corn (no-salt-added or organic), drained and rinsed

1 -11oz can white corn (no-salt-added or organic), drained and rinsed

4 green onions, chopped

1 each red or orange bell pepper, chopped

1-2.25 oz can black olives, sliced

1 clove garlic, pressed

1 tablespoon lime juice

½ cup salsa

Mix all ingredients together. Chill and serve with baked tortilla chips, as a side dish or in an omelet or quesadilla. Makes 20 servings.

#### Nutrition information per serving:

67 calories, 3 grams protein, 1 gram fat, 11 grams carbohydrate, 31 mg sodium.



### Apple Butter Pork Tenderloin

Prep Time: 15 Minutes

Cook Time: 6-8 Hours

Servings: 8

2 pound pork tenderloin

2 cups apple juice

1/2 cup apple butter

1/4 teaspoon ground cinnamon

1/4 teaspoon ground cloves

Place pork in crock pot and set on low. Mix together the apple juice, apple butter, cinnamon and cloves—pour over pork tenderloin. Cook on low for 6-8 hours as your schedule allows. Remove, allow to cool for 5 minutes, slice and serve. Makes 8 servings.

#### Nutrition information per serving:

219 calories, 28 grams protein, 4 grams fat, 15 grams carbohydrate, 69 mg sodium.

## Get Rewarded!

*This month, you could earn a SPECIAL GIFT for your "It Worked For Me" tips or recipes! Just submit as many recipes and "It Worked For Me" tips as you like. The most original and creative will be awarded a special gift from our online store. Include your name and contact info with your entry – make sure your recipes follow Barix nutritional guidelines.*

*Tips must be submitted by September 30, 2015. Please send comments, ideas, recipes and "It Worked For Me" tips to Deb Hart, RD, LD at [dhart@foresthealth.com](mailto:dhart@foresthealth.com).*

"I cannot stress a greater importance than to teach the young generation about the risks of unhealthy eating. A great way to pique their interest in nutrition is to involve them more in the **COOKING PROCESS.**

They not only will learn to cook for themselves, but also develop a lifetime of healthy habits."

Marcus Samuelsson