

# Nutrition Guidelines for Patients With Short Bowel Syndrome

This information will help you maintain your nutrition after your bowel surgery.

## Normal Bowel Function

The bowels consist of the small and large intestines. The small intestine absorbs foods and fluids. It is about 15 to 20 feet long and is divided into 3 sections. These are called the duodenum, the jejunum, and the ileum. Each section has a specific role in how your body digests and absorbs nutrients. The large intestine (colon) is about 5 feet long. It helps your body absorb minerals and water.

When a part of your bowel is removed, the part that is left adapts to this change. It does this by absorbing the nutrients and fluids that would have normally been handled by the part that was removed. Therefore, parts of the bowel can be removed without having a major impact on your nutritional health. However, it does take time for your remaining bowel to adapt to these changes. Your body may not absorb nutrients, fluids, vitamins, and minerals as well as before your surgery.

## Short Bowel Syndrome

Your remaining bowel will begin to adapt shortly after your surgery. During this time, you may have the following symptoms:

- Gas
- Cramps
- Diarrhea
- Fluid loss
- Weight loss

These symptoms make up what is called short bowel syndrome. You can help your bowel adapt by following the nutrition guidelines in this booklet. The guidelines may also help to ease your symptoms.

## Dietary Guidelines

Eat 6 to 8 small meals a day

- Eating small, frequent meals will put less stress on your shortened bowel. Small meals help control your symptoms, and will result in better digestion and absorption.
- Eat slowly and chew your food well.
- Once your bowel has adapted, you can resume having 3 meals a day.

Only drink ½ cup (4 ounces) of fluids during each meal

- Drinking large amounts of fluids with meals pushes your food through your bowel at a faster rate. This means that you might not digest or absorb enough nutrients.
- You can slow down this process by drinking most of your fluids in between meals, at least 1 hour before or after a meal.

Include a lot of nutrients in your meals. Your meals should be

- High in proteins, such as
  - Fish
  - Poultry (chicken, turkey)
  - Meat (beef, pork)
  - Eggs
  - Tofu
  - Dairy products
  - Smooth peanut butter and other nut butters, such as almond butter
- High in refined or low-fiber complex carbohydrates (starches), such as
  - White bread
  - Cereals such as Rice Krispies® and corn flakes
  - Potatoes without skin
  - White rice
  - Pasta
- Moderate in fats, such as
  - Oils
  - Butter
  - Margarine
  - Mayonnaise
  - Gravies
  - Cream sauces
  - Regular salad dressing

If you had a large section of your ileum (the last section of the small intestine) removed, you may tolerate larger amounts of fat at breakfast time better than later on in the day.

- Low in concentrated sweets, such as
  - Sugar (cookies, cakes, candies, chocolate, soda, instant teas, fruit drinks)
  - Corn syrup
  - Molasses
  - Honey
  - Pancake syrup

Include enough fluid in your diet

- Try to drink at least 8 full glasses of fluids each day.
- Avoid very hot or cold drinks.
- It may be better for you to stick with drinks that do not have a lot of sugar. This will prevent dehydration. Plain drinks include water, coffee, tea, milk, or juices diluted with water.

### Follow a low-lactose diet if you are lactose intolerant

- Lactose is a sugar that is found in milk, cheese, and other dairy products. It can cause gas, cramps, and diarrhea in some people. These symptoms usually begin within the first 30 minutes of taking a dairy product.
- To see if you can tolerate lactose, start by drinking ½ cup of milk. If you have any symptoms, try lactose-free dairy products, such as Lactaid® milk or almond, rice, or soy milk. You can also use Lactaid tablets or Lactaid drops to help you digest dairy items.
- Some foods have less lactose than others. Try cultured yogurt and aged cheeses (e.g., hard cheeses such as cheddar and Swiss). If you can eat those, try soft cheeses (e.g., cream cheese and cottage cheese). If you are still having symptoms, you may want to avoid all dairy products for 1 or 2 months and then try them again.

### Follow a low-oxalate diet

- Patients who have had their ileum removed and have an intact colon may need to follow a low oxalate diet. This diet prevents kidney stones from forming. Foods that are high in oxalates include
  - Tea
  - Coffee
  - Cola drinks
  - Chocolate
  - Nuts
  - Soy products
  - Green leafy vegetables
  - Sweet potatoes
  - Celery
  - Berries
  - Tangerines
  - Rhubarb
  - Rutabagas
  - Wheat germ

Your doctor or dietitian will discuss this diet with you, if it is necessary.

### **Fiber**

After your surgery, you may find that fiber, particularly insoluble fiber, is hard to digest. Insoluble fiber is found mainly in whole grain and bran products. It cannot be broken down by the body and increases the bulk of stool (feces).

Soluble fiber is usually better tolerated because it helps slow digestion. Foods with soluble fiber include oatmeal, oat bran, barley, soy, legumes (i.e., chickpeas, lima beans, kidney beans, and lentils), nut butters, fruit and fruit pectin, and psyllium (fiber supplement). Check with your doctor before taking any fiber supplements.

Many foods contain a mixture of both soluble and insoluble fibers. Use the list below as a guide.

Soluble Fiber Foods to Include	Insoluble Fiber Foods to Avoid	Low Fiber Foods to Include	Difficult to Digest Foods to Avoid
<ul style="list-style-type: none"> <li>• Canned fruit</li> <li>• Fresh fruit without skins, peels, membranes, or seeds</li> <li>• Smooth peanut butter and other nut butters</li> <li>• Oatmeal and other oat products</li> <li>• Barley</li> <li>• Legumes, such as chickpeas, lima beans, kidney beans, and lentils, if tolerated*</li> </ul> <p>*Use with caution; may cause gas. Start with small, ¼-cup portions to test your tolerance.</p>	<ul style="list-style-type: none"> <li>• Whole wheat and whole grain breads, crackers, cereals, and other products</li> <li>• Wheat bran</li> </ul>	<ul style="list-style-type: none"> <li>• Puffed wheat, puffed rice, corn flakes, Special K®, and other cereals containing 1 gram or less of fiber per serving</li> <li>• Cream of wheat or rice</li> <li>• White rice</li> <li>• White bread, matzoh, and Italian bread without seeds</li> </ul>	<ul style="list-style-type: none"> <li>• Whole nuts, seeds, and coconut</li> <li>• Fruit skins, peels, and seeds</li> <li>• Dried fruits</li> </ul>

## Vegetables

It will probably be difficult for you to digest raw vegetables at this time. Start by eating small amounts (½ cup) of well-cooked vegetables. Be sure to chew them well. Avoid those that cause gas or discomfort. If you can tolerate the cooked vegetables, try small amounts of the raw vegetables listed below.

Usually Well-tolerated	May Cause Gas or Discomfort
<ul style="list-style-type: none"> <li>• Carrots</li> <li>• Green beans</li> <li>• Spinach</li> <li>• Beets</li> <li>• Potatoes without skin</li> <li>• Asparagus tips</li> <li>• Lettuce</li> <li>• Cucumbers without skin or seeds</li> <li>• Tomato sauce and tomatoes without skin or seeds</li> <li>• Squash without skin or seeds</li> </ul>	<ul style="list-style-type: none"> <li>• Onions</li> <li>• Cauliflower</li> <li>• Broccoli</li> <li>• Cabbage</li> <li>• Brussels sprouts</li> <li>• Legumes, such as lentils, chickpeas, lima beans, and kidney beans</li> <li>• Corn</li> <li>• Kale</li> <li>• Peas</li> </ul>

## Vitamin and Mineral Supplements

You are probably not eating some of the foods you did before surgery. It may be a good idea to take 1 multivitamin each day. It should have the recommended daily allowance (RDA) for vitamins and minerals. You may also need more of specific vitamins or minerals. Ask your doctor or dietitian what you should take.

### Vitamins A, D, and E

- You may need water-soluble forms of vitamins A, D, and E. This is rare and happens only if a large portion of your ileum has been removed.

### Vitamin B<sub>12</sub>

- If the last part of your ileum has been removed, you will require injections of B<sub>12</sub> every 1 to 3 months.

### Calcium

- You may need extra calcium, particularly if much of your ileum was removed and most of your colon was left intact.

### Potassium

- If you are having a lot of diarrhea, your potassium levels may decrease. Ask your doctor whether you should eat foods that are high in potassium. These include oranges, potatoes, tomatoes, and bananas.
- **Do not take potassium supplements without talking to your doctor first.** They can be dangerous.

### Zinc

- If you having a lot of diarrhea, ask your doctor if you need a zinc supplement.

### Oral rehydration solution

- If you are having a lot of diarrhea, your doctor may recommend that you drink an oral rehydration solution. This will give you back the fluid, sodium, and potassium that is lost with your bowel movements.
- This is not the same as sports drinks (such as Gatorade®), which do not have the same amount of nutrients.

### Nutritional supplements

- If you are losing weight, a high-calorie supplement drink may be helpful. However, depending on your surgery, standard supplements may not be right for you. This is because they have a high sugar content.
- Your doctor or dietitian may recommend a special supplement for you. Always ask them before taking a supplement.
- If you can take dairy products, try the fortified, easy to digest milk recipe below. It increases the amount of calories and protein in your diet.

## Fortified milk recipe

Mix 1 quart of whole, 2% low fat, 1% low fat, skim, or Lactaid milk with 1 ½ cup of instant powdered milk (usually 1 envelope). Blend the ingredients well. Keep refrigerated.

Nutritional value for every 8-ounce serving if mixed with

- Whole milk: 230 calories, 16 grams of protein
- 2% milk: 200 calories, 16 grams of protein
- 1% milk: 180 calories, 16 grams of protein
- Skim milk: 160 calories, 16 grams of protein

## Food Diary Guidelines

Keeping a food diary is a helpful way to find out what foods are best for you. Keep a food diary with the following information:

- The time you ate the meal, snack, or beverage
- The name of the food item or beverage
- The amount of the food you ate or the beverage you drank
- Any symptoms you had

If you have an ileostomy or colostomy, it is also helpful to record your fluid output. Measure the amount of stool in your bag for 1 week. Measure it each time you change or empty the bag. Then, if it is about the same each day, measure it once a month for a day or two. If you see a change in the consistency of the stool, measure it more often and let your doctor know.

## Sample Menu

<b>Breakfast: 7:00 am</b>	<b>Fluid Break: 8:30 am</b>
1 hard-boiled egg 1 slice of white toast 1 pat of butter 1 teaspoon of jelly ¼ cup of orange juice mixed with ¼ cup of water	1 cup of fortified milk (see above for the recipe)
<b>Mid-morning Snack: 10:00 am</b>	<b>Fluid Break: 11:30 am</b>
1 ounce of cheddar cheese 6 saltine crackers ½ cup of fortified milk	½ cup of juice mixed with ½ cup of water
<b>Lunch: 1:00 pm</b>	<b>Fluid Break: 2:30 pm</b>
2 ounces of turkey on ½ of a white roll 2 teaspoons of mayonnaise ½ cup of tomato juice	1 cup of water
<b>Mid-afternoon Snack: 4:00 pm</b>	<b>Fluid Break: 5:30 pm</b>
8 ounces of “light” or sugar-free yogurt	1 cup of fortified milk

<b>Dinner: 7:00 pm</b>	<b>Fluid Break: 8:30 pm</b>
2 ounces of grilled chicken ½ cup of mashed potatoes ½ cup of cooked green beans 2 teaspoons of butter ½ cup of water	½ cup of juice mixed with ½ cup of water

<b>Evening Snack: 10:00 pm</b>
2 melba toasts with 1 tablespoon of peanut butter ½ cup of fortified milk

## How to Contact Your Dietitian

Your dietitian is a trained specialist in diet and nutrition. He or she is part of the healthcare team that includes your doctor and nurse. Your dietitian consults with your doctor to make sure that your prescribed diet is right for you. He or she will suggest ways to adjust your daily food habits to meet your health needs.

If you have any questions or concerns, please leave a message at (212) 639-7312. A dietitian will return your call. If you would like a consultation with the outpatient dietitian, call (212) 639-7071 to make an appointment.



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