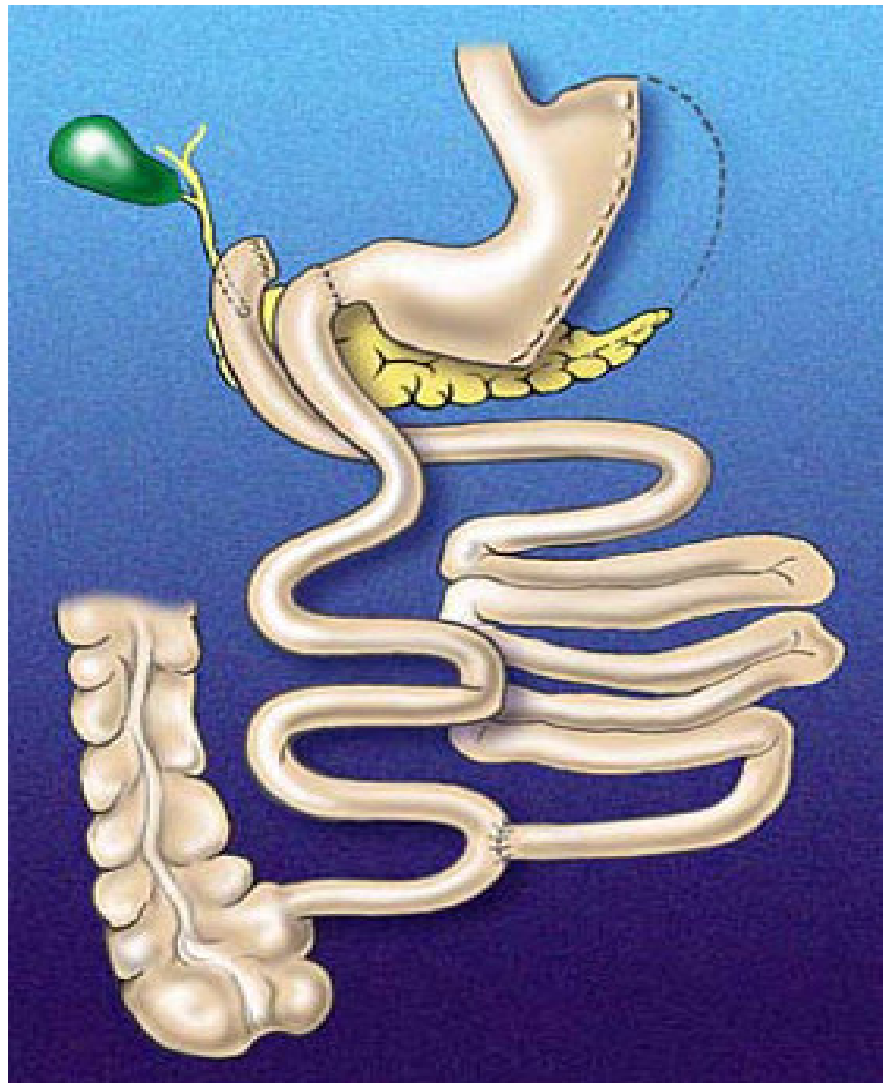


The Duodenal Switch Procedure



Johns Hopkins Bayview Medical Center

Ashli Greenwald, MS, RD, LD
Michael Schweitzer, MD

How Does the Procedure Work?

The biliopancreatic diversion with a duodenal switch procedure is a malabsorptive procedure. This type of procedure restricts that amount of calories, vitamins, and minerals absorbed from food, resulting in weight loss.

The surgeon first removes about 67-75% of your stomach. This helps to slightly restrict the amount of food you are able to eat and help you fill up quicker. Next, the surgeon divides and rearranges your small intestines to separate food from digestive juices, allowing the malabsorption to occur. A portion of your intestine will be attached to the proximal duodenum and receive food from your stomach. The pylorus, the valve at the outlet of your stomach, is left intact which helps to reduce “dumping syndrome.” The remainder of the bypassed small intestine is left attached with the ability to carry the digestive enzymes. Finally, the surgeon attaches your small intestines together further down near the colon, allowing a 100 cm common channel for the digestive enzymes and food to combine and absorb nutrients.

Advantages of Duodenal Switch

- Larger stomach capacity
- Most patients do not experience dumping syndrome, with the pylorus intact
- Weight loss estimated at 75-80% excess body weight
- May be more effective for high BMIs >55 kg/m²
- May keep weight off for long-term better than the other surgical options

Disadvantages of Duodenal Switch

- Greater chance of chronic diarrhea
- Greater chance of foul smelling stools and flatulence
- Higher risk for vitamin/mineral deficiencies; especially iron and calcium
- Carbohydrates are well tolerated and a large consumption of these can lead to inadequate weight loss or weight regain.
- Lactose intolerance and other possible food aversions

Post-operative Dietary, Lifestyle, and Behavioral Changes

- **Eat slowly and chew your food well.** Failure to do so can result in nausea/vomiting or discomfort.
- **Watch your portion sizes at meals.** The less food you put in front of you, the less you will eat.
- **Stop eating and drinking when you are full.** Again, failure to do so can result in nausea/vomiting and pain.
- **Drink adequate fluids.** Aim for at least 64 oz of fluid a day. Beverages should be less than 10 calories per serving.
- **Avoid alcoholic beverages.** Alcohol, beer, and wine can cause weight gain and result in poor nutrition since they are high in calories and low in nutrients.
- **Healthy food choices.** You should be following a healthy, well-balanced diet with adequate fruits, vegetables, and whole grains. **Lean protein sources should be the focus of the diet.** Protein sources should be at each meal and consumed first at the meal.
- **Choose low-fat foods.** Read labels and choose foods that have ≤ 3 grams of fat per serving.

Notes:

- **Protein:** Aim for about **80 grams** of protein a day.

Sources of Protein

Foods	Protein (grams)
<i>Dairy and Eggs</i>	
Cheddar cheese, 1 oz.	7
Cottage cheese, ½ cup	16
Mozzarella, part skim, 1 oz.	8
Ricotta, part skim, ½ cup	10
Yogurt, fat free, 6 oz.	8
Milk, skim, 1 cup	8
Egg, 1 medium	6
<i>Meat, Poultry, and Fish (4 oz.)</i>	
Chicken, light meat, roasted, no skin	31
Ground beef, extra lean, broiled	33
Sirloin steak, choice cut, trimmed, broiled	35
Tuna, canned in water	33
Turkey breast, roasted, no skin	24
<i>Legumes and Nuts</i>	
Almonds, 1 oz.	6
Cashews, dry roasted, 1 oz.	4
Lentils, ½ cup cooked	8
Lima beans, ½ cup cooked	8
Peanut butter, 2 Tbsp.	10
Red kidney beans, ½ cup canned	8
Soybeans, ½ cup cooked	10
Tofu, 4 oz.	9

Nutritive Value of Foods, USDA

<http://www.nal.usda.gov/fnic/foodcomp/search/>

- **Protein supplements** are another way to help you meet your protein requirements. Some examples are: Designer Whey[®], Isopure Protein[®], EAS Protein[®], and Met Rx[®]. We are not partial to any particular brand of protein drink.
 - More examples at: <http://www.obesityhelp.com/forums/nutrition/list+products.html#ProteinDrink>
 - Try and purchase protein drink that has **at least 16 grams of protein per serving.**
 - Drinking **1-2 protein drinks a day** will help you reach your protein goals.

- Due to the malabsorptive nature of this surgery, you are required to take **vitamin/mineral supplements for the rest of your life. You must also follow-up with your surgical team including the dietitian.**
 - **Multivitamin** (once a day)
 - **ADEKs** (chewed twice a day)
 - <http://store.axcanscandipharm.com/mm5/merchant.mvc?>
 - **Calcium** (1200-1500 mg a day)
 - Example: Calcium citrate (Citracal®)
 - Two tablets twice a day with food
 - Must contain vitamin D
 - **Iron (60-65 mg elemental iron a day)**
 - Example: Ferrous Fumarate (Vitron C®)
 - Once a day on an empty stomach (1 hour before a meal or 2 hours after a meal)
- * **All supplements must be taken separately.**
 - * **Calcium and iron must be taken 2 hours apart.**
 - * **Do not take supplements with coffee, tea, or dark soda.**
 - * **Vitamin/mineral levels will be checked at least annually; your supplements may be adjusted if necessary.**

Diet Progression in the Hospital

A diet will be prescribed for you in stages while in the hospital. These stages are to help prevent complications cause by eating the wrong foods.

Stage I Bariatric Surgery Diet

Sugar free gelatin
Low sodium broth
Crystal Light®
Prosource®

Stage II Bariatric Surgery Diet

Non fat milk
Crystal Light®
Fat free yogurt
Sugar free pudding
Strained soup
No Sugar Added Carnation Instant Breakfast®

Stage III Bariatric Surgery Diet

Mashed potatoes
Fat free milk
Strained soup
Fat free yogurt
Sugar free pudding
No Sugar Added Carnation Instant Breakfast®

Once discharged from the hospital you must follow a **Pureed Diet** for four weeks.

Instructions for pureeing foods:

1. Cut food into small pieces about the size of your thumbnail
2. Place food in the blender
3. Add enough liquid (fat free chicken broth or fat free gravy) to cover the blades
4. Blend until smooth like applesauce
5. Strain out the lumps, seeds, or pieces of food.
6. Use herbs (avoid spicy spices) to flavor foods.
7. Blend and enjoy!

Tips for the pureed diet

- Keep food records
- Use ice cube trays for portion control
- 2-4 ounce portion sizes
- 6 small meals a day

After four weeks of pureed foods, gradually advance back to solid foods.

DIETARY CHECKLIST AFTER DUODENAL SWITCH

- ✓ 80 grams of protein a day
 - Eat protein first at all meals
- ✓ Eat slowly and chew well
 - Meals should take 30-45 minutes
 - Avoid snacking on high calorie foods in between meals
- ✓ 48-64 oz of fluid a day
 - Beverages less than 10 calories per serving
- ✓ Vitamin/mineral supplementation for life
 - Multivitamin
 - ADEKs
 - Calcium
 - Iron
- ✓ Exercise
 - Aim for at least 30 minutes on most days of the week
 - Incorporate light weights