Ostomy patients face an array of challenges due to the uniqueness and consequences of their procedure. Day-to-day life can be a struggle as patients deal with fears of excessive gas, bloating, constipation, spillage, and blockage, as well as changes in their self-image. A recent news headline described the humiliation experienced by one traveler with an ostomy during his airport security check. The pat-down procedure broke the seal on his urostomy with embarrassing results. Unfortunately, some situations may be out of our control, but patients can be taught certain nutritional tactics in order to control some ostomy-related concerns. This article reviews the effect ostomies have on nutrient absorption, outlines key nutrients for the ostomate, and provides tips to manage dietary concerns.

Introduction to Ostomies

In order to formulate sound nutritional advice for patients with an ostomy, it is first necessary to understand how the digestive tract functions and what occurs when an area is bypassed or removed. In a normally functioning digestive tract, the stomach produces enzymes required to break down ingested food particles into available nutrients. The intestine is responsible for the absorption of these nutrients, which then are sent to the liver for processing and utilization by the rest of the body.

There are three common ostomies: colostomy, ileostomy, and urostomy. In a colostomy, only a portion of the large intestine is removed or bypassed, allowing most of the nutrients to be absorbed. Patients with a colostomy typically produce partially formed stool. With an ileostomy, the entire colon, rectum, and anus are removed or bypassed, resulting in a significant decrease in nutrient absorption. This causes a very soft, liquid-like stool. A urostomy completely removes or bypasses the bladder. This procedure has minimal effects on dietary absorption; thus, it will not be discussed in this article. In each case, the exact location of the stoma determines the patient’s ability to absorb specific nutrients. Additionally, the amount of remaining intestine is a determining factor in the efficiency of the absorption process.

In addition to physiological disturbances, psychological factors affect the nutritional status of ostomates. The fear that eating will negatively affect the amount, odor, or consistency of their stoma output prompts many ostomates to restrict their daily oral intake. This behavior should be discouraged because it is the type, not the amount, of food that affects the nature of the stool. Furthermore, restricting nutritious foods may cause deficiencies and compromise overall health and well being. The healthcare team should aim to become familiar with foods commonly known to be problematic and advise patients accordingly. It is important to keep in mind that not everyone will respond the same way to each food; an individualized approach is needed.

Ostomy-specific Concerns

Colostomy. A colostomy is created when a portion of the colon or the rectum is removed and the remaining colon is brought to the abdominal wall. This ostomy can be temporary or permanent. Patients with a colostomy typically experience minimal problems with nutrient absorption because most of the gastrointestinal (GI) tract remains intact. Table 1 lists the location where certain nutrients along the GI tract are absorbed.

<table>
<thead>
<tr>
<th>Location</th>
<th>Nutrients Absorbed</th>
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<tbody>
<tr>
<td>Duodenum/Jejunum</td>
<td>Simple carbohydrates, Fats, Amino acids, Vitamins, Minerals, Water</td>
</tr>
<tr>
<td>Ileum</td>
<td>Bile salts, Vitamin B₁₂, Water</td>
</tr>
<tr>
<td>Colon</td>
<td>Water, Electrolytes: Sodium, chloride, potassium, Short-chain fatty acids, Biotin, Vitamin K</td>
</tr>
</tbody>
</table>

A main concern for colostomates is constipation. Irregularity affects colostomates just as it does persons who have a normal, functioning digestive tract. Although the cause may involve many factors, the treatment usually begins with dietary changes — specifically, increasing fiber and fluid intake. Fiber has been shown to increase stool bulk and decrease the transit time of feces. It is important to note that fiber should be increased in small increments because it may cause fullness, bloating, and gas.

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Ileostomy. An ileostomy is a surgically created opening in the small intestine, usually at the end of the ileum. The intestine is brought through the abdominal wall to form a stoma. Ileostomies may be temporary or permanent and may involve removal of all or part of the colon. Patients with an ileostomy face many dietary challenges relevant to the location of the stoma. Without the colon, absorption of electrolytes, water, vitamin K, and biotin are affected. Maintaining electrolyte levels is an important aspect of dietary interventions. Daily sodium losses range between 50 and 80 mmoles. Individuals with an ileostomy should be encouraged to add an extra teaspoon of salt to their daily food intake, contrary to traditional low-sodium recommendations. Foods such as broth, canned vegetables, soy sauce, and tomato juice...
are all high in sodium and are good suggestions. Adding potassium to the diet is equally important. Foods such as chicken, turkey, bananas, cherries, and potatoes should be consumed regularly.\(^3\) Increasing water consumption also should be emphasized to reduce the risk of dehydration.

The output from an ileostomy is generally more liquid than from a colostomy. If the patient experiences excessive or watery fecal output, the amount of insoluble fiber should be decreased and the amount of soluble fiber increased. Soluble fiber decreases the movement of food through the GI tract. This leads to more substantial water reabsorption by the intestine, resulting in a thicker, more formed stool. On the other hand, insoluble fiber increases the passage of food through the intestinal tract, decreasing the opportunity for absorption. Because the output from an ileostomy is generally more liquid, soluble fiber intake is recommended to help thicken stool. Foods such as applesauce, bananas, tapioca, potatoes, oatmeal, and white rice should be encouraged.

**Dietary Interventions**

Many ostomates experience a variety of side effects from various foods. Table 2 lists the foods most commonly associated with problems encountered by ostomates. Knowing which foods to avoid or increase will help the patient manage side effects, thereby improving the nutritional quality of the diet. Many times patients are overly restrictive due to fear of side effects but this is not always necessary if the cause of the problem can be pinpointed to a few foods.

**Gas.** Gas, or flatulence, occurs just as frequently in an individual with an ostomy as it does for a person with a normal, functioning digestive tract. The only difference is that an ostomate has no control over the passage of gas. Foods such as carbonated beverages, beans, soy, cabbage, dairy products, nuts, and onions are known to be gas-producing foods and may increase flatus. Additional behavior modifications also may help reduce flatulence. Patients with this complaint should be advised to avoid talking while eating, chewing gum, drinking with a straw, and smoking.\(^3\) The common thread between these activities is that they may all lead to swallowing air, which, in turn, can increase flatulence.

**Odor.** Another frequent concern is embarrassing odor caused by the stool. Odor-producing foods include asparagus, broccoli, cabbage, eggs, and garlic. Eliminating these foods from the diet is not necessary, but it may help in the management of excessive odor. Foods that control odor, such as buttermilk, cranberry juice, and yogurt should be emphasized.

**Obstructive foods.** An obstruction to the stoma is a serious side effect; care should be taken to avoid this occurrence. Foods such as apple peels, whole-kernel corn, dried fruits, nuts, and popcorn are not broken down well during digestion and can result in an obstruction. If a patient wishes to consume these foods, the healthcare practitioner should encourage him/her to always chew thoroughly.

**Diarrhea.** Diarrhea affects hydration status and electrolyte levels. Frequent diarrhea should be corrected as soon as possible. Foods that help control diarrhea include applesauce, bananas, peanut butter, and toast. It is equally important to be familiar with the foods that worsen diarrhea. Apple juice, fried foods, fructose-sweetened drinks, and sugar-free candies, often sweetened with sugar alcohols such as sorbitol and mannitol, are known to increase diarrhea.

**Constipation.** Constipation, mainly a concern for colostomates, should be treated with dietary interventions before laxatives are used. An increase in fiber and water intake may help the treatment of constipation but other foods, such as cooked fruits and vegetables, warm or hot beverages, and fruit juices, also have been useful.

**Practice Points**

Healthcare practitioners should reassure patients with an ostomy that side effects often can be managed with some simple dietary changes. Patients should be encouraged to notice how they react to various foods and to keep a food diary for several weeks to highlight patterns. Other good advice includes:

- Chew thoroughly
- Drink adequate fluids
- Eat frequent, small meals – skipping meals increases flatulence and watery stools
- Try new foods one at a time and note any side effects
- Snack in between meals to maintain adequate intake
- If problems persist, consult a registered dietitian (RD).

**References**


**Coming next month:**

**Selecting a Tube Feeding Formula**