

A photograph of a man and a young girl smiling at each other. The man is on the left, wearing a light blue shirt, and the girl is on the right, wearing a pink shirt. They are standing behind a wooden table with a plate of fruit, including strawberries and green grapes. The background is a bright, textured wall.

# GI Problems for IG Patients

By Jill Weisenberger, MS, RD, CDE

Immune disorders often cause inflammation and infection that affect nutrient absorption. Understanding these effects and taking action can help to keep patients healthy.

The belief that good nutrition feeds the immune system is nothing new. Hippocrates said, "Our food should be our medicine, and our medicine should be our food." This seems simple enough to understand, but it's not so simple for those with intestinal problems.

Individuals with chronic infections often experience stomach irritation, inflammation and diarrhea, leaving their intestinal wall inflamed and unable to adequately absorb the nutrients their body craves for good health. These individuals are highly prone to nutrient deficiencies from malabsorption. And, since optimal immune function demands optimal nutrition, this can become a self-perpetuating cycle of disease: Inflammation or infection hinders nutrient absorption, which weakens the immune system, which further lessens absorption and so on and so on. Therefore, the discomfort, diarrhea and dashing to the bathroom — even when fairly mild — are more serious than the inconvenience or embarrassment they cause.

### Immune Disorders

#### Pummel the Intestines

An immune deficiency disease disrupts the normal functions of the intestines in several ways, says Neil L. Kao, MD, allergist and immunologist in Greenville and Spartanburg, S.C. Lack of antibody production provides opportunities for infections in the intestinal tract, and these infections damage the gut, he explains. In addition, the side effects of treatment can hinder nutrient absorption, and other defects in the immune system can lead to autoimmune diseases, such as ulcerative colitis and Crohn's disease, further damaging the intestines. Actually, an individual with an immune disorder may be burdened with some or all of these problems, leading to nutrient absorption issues that range from mild to severe.

### Common Infections and Causes of Inflammation

For someone with an immune disorder, the immune system's defenses have holes or gaps that allow outside infections to infect and thrive inside the body, says Kao.

Among the invaders are giardia and cryptosporidia, single-celled parasites that cause much of the diarrhea in humans. These tiny organisms enter the body with contaminated water or food and set up home in the small intestine, where they multiply in massive quantities. Similarly, the bacteria campylobacter and yersinia, common in undercooked foods, also invade and grow in the small intestine. This swarm of trespassers then inflames or injures the intestinal walls. Likewise, Crohn's disease and ulcerative colitis, which are common among individuals with immune deficiency diseases, cause chronic inflammation of the intestines.

### When Malabsorption Occurs

Because of its specialized cells and incredible length of about 20 feet, a healthy small intestine is remarkably capable of absorbing more nutrients and calories than the body needs. But damaged or irritated tissue loses its

ability to extract the nutrients from food and move them into the bloodstream. Being denied entrance into the cells that depend on them and with nowhere else to go, these unabsorbed nutrients and particles of food travel to the large intestine, where they are eventually excreted with the feces.

The symptoms of malabsorption are many and range from unnoticeable to frequent diarrhea, severe weight loss, dehydration, irregular heartbeats and more. Symptoms depend on the severity of malabsorption

and the site of diseased tissue. Importantly, even those immune disorder patients who appear well-nourished may have one or more nutrient deficiencies, notes registered dietitian Colleen Gill, MS, RD, CSO, of the University of Colorado's Oncology Services and Integrative Medicine. According to Gill, there are many nutrients of special concern.

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### Common Nutrient Deficiencies

Dietary changes are often enough to improve nutritional status, but frequently, malabsorption is severe enough to warrant supplementation. However, supplementing with

any nutrient has risks, including interfering with medications, causing toxic symptoms and decreasing the absorption of other nutrients. Before taking any supplement, immune disease patients should talk to a physician, registered dietitian or pharmacist.

**Vitamin B12.** This water-soluble vitamin is absorbed in the ileum, the lowest portion of the small intestine. If this section of the digestive tract is affected by illness, the vitamin is poorly absorbed. Additionally, some patients with immune deficiencies are at risk for atrophic gastritis, a condition in which the stomach lining fails to produce enough acid, says Kao. Without adequate acid, the body cannot extract vitamin B12 from proteins in food. Long-term lack of vitamin B12 leads to a form of anemia and to nerve damage that may eventually be irreversible.

**Fat-soluble vitamins and essential fatty acids.** Signs of fat malabsorption include “stools that float on the surface of the toilet basin,” explains Gill. This is similar to fat separating from water when oil is poured into pasta while cooking, she adds. The fat-soluble vitamins are A, D, E and K. These vitamins have multiple roles in immune function, blood clotting, bone health, vision, growth and more. Some pharmacies supply vitamins A, D, E and K in a special highly absorbable, water-soluble form just for those individuals with fat malabsorption problems.

**Calcium.** This bone-building mineral depends on adequate vitamin D for its absorption. Additionally, calcium and other minerals may bind with fats in the digestive tract, hindering uptake, says Gill. Patients who need a calcium supplement should choose calcium citrate over calcium carbonate if they produce inadequate stomach acid; calcium carbonate requires



some acid for absorption.

**Other minerals.** Zinc, magnesium, selenium and other minerals also bind with fats, forming a chemical “soap,” blocking absorption. Some minerals that are lost in diarrhea also can cause or aggravate diarrhea when taken in excess, so caution should be used with these and other nutrient supplements.

### **Medications and Nutrient Losses: A Double-Edged Sword**

Anyone who takes medications for chronic diseases can relate to the refrain: “Sometimes the treatment is worse than the disease.” Many medications for immune disorders or for the infections they cause increase malabsorption problems or otherwise raise the risk for nutrient deficiencies.

**Prednisone.** Prednisone decreases the inflammation of the gastrointestinal tract, but sabotages nutritional status. This corticosteroid and others decrease calcium absorption, leaving the bones vulnerable to weakening. This drug further damages the bones by accelerating bone loss and by increasing calcium excretion in the urine. Protein needs also may increase because of increased breakdown of body proteins.

**Cholestyramine.** This drug decreases diarrhea, but also blocks the absorption of calcium, iron and the vitamins A, D, E, K, folate and B12.

**Sulfasalazine.** This anti-inflammatory impedes the absorption of folate, a B vitamin important in the formation of red blood cells and in cell growth and division.

**Antibiotics.** While attacking the bacteria that have caused a respiratory infection or any infection, antibiotics also kill the good bacteria in your gut that contribute to a

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healthy gastrointestinal tract, says Gill. If this leads to diarrhea, food and food particles run through the digestive tract more quickly than usual — so quickly that they don't get absorbed.

### Take Action

A gentle rain gradually soaks into the soil, but a hurricane dumps so much rain that it floods the neighborhood. A comparison can be applied to the size of meals, suggests Gill. Eating too much at once floods the gastrointestinal (GI) tract. Instead of eating three large meals that can overwhelm the intestines, individuals with an immune disease need to slow down the assault by eating smaller, more frequent meals.

If diarrhea is a problem, limiting irritants like caffeine also is a smart idea. While a daily latté may help someone else manage constipation, caffeine isn't a good idea for those with frequent trips to the bathroom. Hot coffee compounds the problem, Gill adds. "Extremes in temperature, whether cold or hot, will trigger more contractions," speeding the passage of food through the GI tract and limiting absorption.

Some people with diarrhea have trouble digesting the sugars in dairy products. If this is a problem, they should try eating only small amounts at a time or use lactose-free milk. Lactase supplements (sold as Lactaid) also help. Finally, fluids lost with diarrhea need to be replaced. "Dehydration makes everything worse: fatigue, nausea and pain control," Gill adds.

Sometimes discomfort or the fear of embarrassment prevents individuals from eating adequately. It's important for these people to take action and to seek the help of their physician or a registered dietitian.

### When Food Alone Isn't Enough

In some cases, malabsorption is so severe that food — and even standard or high-dose vitamin-mineral supplementation — isn't enough. Frequently, physicians and dietitians recommend high-protein or high-calorie supplemental beverages such as Peptamen 1.5, which is pre-digested and, thus, more easily absorbed. For those with fat malabsorption problems, Gill recommends Resource Fruit Breeze or Enlive. However, these products should only be used under the guidance of a healthcare professional. Whatever product is chosen, it should first be

drunk at room temperature or only slightly cold to avoid the gastrointestinal contractions brought on by temperatures above or below room temperature.

Short-term tube feedings may be necessary for some individuals. Either a thin, flexible plastic tube is placed down the nose into the stomach or a tube is surgically placed into the small intestine. A prescribed amount of liquid feeding is administered through the tube. Tube-feeding products vary in nutrient composition. They may be high-protein, high-fiber, low-fiber, low-fat and many other versions. A physician or registered dietitian will select a product specific to a patient's needs. And, like some supplemental beverages, some tube-feeding products contain nutrients that do not need to be digested before absorption. In some cases, tube feedings may be used for supplemental nutrition, and in others, they may be the sole source of nutrition.

Total parenteral nutrition (TPN) is reserved for individuals whose GI tracts are so inflamed or damaged that only minimal nutrients can be absorbed, or for those people who need to allow their bowels complete rest in order to heal. In TPN, all essential nutrients, including calories, fluids, vitamins,

minerals, amino acids and carbohydrates, are delivered through an intravenous catheter placed directly into the bloodstream, completely bypassing the stomach and small intestine.

### Planning an Individualized Diet

Nutritional status affects all facets of health and daily living. Immune disease patients should visit the American Dietetic Association ([www.eatright.org](http://www.eatright.org)) website to find a registered dietitian near them to help them or a family member plan an individualized diet. ■

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### Sources

University of California San Francisco, patient education. Accessed June 5, 2010.  
<http://www.ucsfhealth.org/adult/edu/inflammatoryBowelDiseaseNutrition/index.html>.

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