

Nutrition and Diet for Carcinoid Patients: An Interview with Jeffrey I. Mechanick, M.D.

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“Niacin deficiency, general protein energy deficiency, nutrition problems due to surgery, malnutrition and chronic diarrhea, and the excess metabolism of tryptophan,” are the key nutritional issues for carcinoid patients says endocrinologist Jeffrey I. Mechanick, M.D. Dr. Mechanick has been working with carcinoid patients at Mt. Sinai School of Medicine in New York City, where he is Clinical Professor of Medicine and an attending physician, for over twenty years, beginning when he was a Fellow in Endocrinology at the hospital in 1981. He became interested in carcinoid patients as he worked at Mt. Sinai alongside Richard R.P. Warner, M.D., a nationally and internationally recognized carcinoid specialist and Medical Director of The Carcinoid Cancer Foundation.

The challenges of working with carcinoid patients, explains Dr. Mechanick, are both in the very early diagnostic stage as well as in the advanced stage, when very sick patients are undergoing surgical intervention.

When carcinoid patients inquire about the best diet for them, Dr. Mechanick’s advice is based upon whether or not the patients have symptoms. For those without symptoms, he recommends a traditional healthy diet, including fresh fruits and vegetables, protein, and healthy fat. A multivitamin is suggested if one’s diet does not include the daily recommended levels of vitamins as outlined by the Food and Drug Administration. In the absence of pellagra, a disease that affects carcinoid patients who have niacin deficiency, Dr. Mechanick says there is no reason to take dietary supplements.

For carcinoid patients who have symptoms, Dr. Mechanick recommends dietary modifications based upon the symptoms. For example, a diet for patients with diarrhea should include starchy, easily digestible carbohydrates and low saturated fats. When carcinoid patients have surgery to remove a large portion of the small intestine, they may experience short bowel syndrome, a condition in which nutrients are not properly absorbed (malabsorption). Dr. Mechanick suggests those patients replace Vitamins A, D, E, and K if there is a deficiency. Pancreatic enzymes, including Viokase, Ultrase, Creon, or Pancrease, can also be used to treat malabsorption. A possible side effect of taking Sandostatin is biliary stasis, a problem with the flow of bile that may lead to gallstones. Dr. Mechanick says those patients should take Ursodiol, a bile acid.

Pellagra is a condition that can affect carcinoid patients who have carcinoid syndrome. Niacin deficiency occurs in carcinoid syndrome as a result of increased tryptophan metabolism into serotonin. If untreated, in some patients this can lead to pellagra. The 4 “D”s associated with pellagra are dermatitis, diarrhea, dementia, and death. For those deficient in niacin, a daily supplement of 25 to 50 mg should be taken. Low doses of niacin, up to 50 mg per day, do not cause flushing but if a person is hypersensitive to niacin then niacinamide can be used.

Carcinoid patients with symptoms should augment protein in their diets, add more tryptophan in the form of lean meats and protein, and avoid high tyramine-containing foods, which can cause flushing, such as hard and aged cheeses, including cheddar and Stilton; cured meats; and some nuts, specifically walnuts, peanuts, coconuts, and Brazil nuts.

When undergoing chemotherapy, carcinoid patients should make sure they have a sufficient number of calories, proteins, and minerals. The first choice is to replace these by mouth but

if not possible, enteral (tube) feedings are used. In the rare instances that enteral feedings are not possible, a patient will need IV treatment.

“Supplements are only to be used for deficiencies,” notes Dr. Mechanick. They can be taken when additional calories are needed, for chronic diarrhea, niacin deficiency, to supplement protein, and for additional, fat-soluble vitamin needs. Dr. Mechanick cautions patients not to overuse supplements, in which case “they can cause more harm than good.” The overuse of supplements can interfere with other drugs a patient is taking, causing adverse effects; toxicity of the liver or kidney impairment can occur; and excess of one nutrient can cause a deficiency of another. For example, too much zinc could result in copper deficiency.

Carcinoid patients may wonder if they should take nutraceuticals, food or food products that provide health and medical benefits, including the prevention and treatment of disease. Nutraceuticals include a wide range of products, such as echinacea, St John's wort, oils from fish and flax seed, glucosamine and chondroitin, calcium-fortified juices and plant-sterol-containing butter substitutes. Dr. Mechanick urges patients not to take anything that is “unproven unless it is part of a scientific investigation that is ethically conducted.” To find a clinical trial for medications or nutraceuticals, patients can go to www.clinicaltrials.gov, the website of the U.S. National Institutes of Health. Dr. Mechanick also suggests that patients discuss clinical trials with the physician who is treating them for carcinoid. Alternatively, patients can call major cancer centers ranging from MD Anderson in Texas to Dana-Farber in Massachusetts to Mount Sinai in New York, where clinical trials are regularly conducted.

When asked to describe a healthy diet, Dr. Mechanick said that in order to maintain a healthy body weight and a BMI (body mass index) between 18.5 and 24.9, one's diet should include the following:

- 7 to 10 servings per day of fresh fruits and vegetables
- Up to 25 - 30 grams of fiber
- Phytonutrients (also known as phytochemicals, the antioxidant, immune boosting and other health-promoting properties of active compounds in plants) from sources such as grains, legumes, and teas
- Protein from food that is not rich in saturated fat, including lean meats, egg whites, beans and fish
- Healthy fat found in monosaturated fat, including olive oil, avocados and other plant-based foods
- Minimize foods rich in saturated fats and eliminate foods containing trans fats, such as those found in fast food

A healthy diet should be modified based upon individual genetic makeup, based upon age, chronic degenerative disease, and medical conditions.

To help determine the best diet possible for each carcinoid patient, Dr. Mechanick says patients can choose to see a registered dietitian, preferably one who specializes in cancer, but also suggests that patients work closely with their carcinoid specialist. According to Dr. Mechanick, “There is a shortage of physicians who are experts in nutrition.” For a list of physicians who specialize in nutrition, visit the website of the American Board of Physician Nutrition Specialists (ABPNS) at <http://main.uab.edu/Sites/abpns/>.

What is Dr. Mechanick's most important advice for carcinoid patients? “Learn healthy eating, engage in plenty of physical activity, listen to your doctor, and above all else, enjoy life.”

Additional Resources about Nutrition and Diet:

- U.S. Food and Drug Administration, <http://www.fda.gov/>
- United States Department of Agriculture, National Agriculture Library, Food

- and Nutrition Information Center,
http://fnic.nal.usda.gov/nal_display/index.php?info_center=4&tax_level=1
- American Institute for Cancer Research, The New American Plate,
http://www.aicr.org/site/PageServer?pagename=pub_new_amer_plate
 - Carcinoid Cancer Foundation, <http://www.carcinoid.org> (see sections on Nutrition and Frequently Asked Questions)
 - The New American Plate Cookbook: Recipes for a Healthy Weight and a Healthy Life, published by The American Institute for Cancer Research,
www.amazon.com
 - Eat, Drink, and Be Healthy: The Harvard Medical School Guide to Healthy Eating, by Walter C. Willett, M.D., www.amazon.com



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Since 1996 he has been the Director of the Metabolic Support Service for Mt. Sinai's Division of Endocrinology and Metabolism. He holds certifications as a Physician Nutrition Specialist, Endocrine Certification in Neck Ultrasound, Specialist in Clinical Nutrition, and Nutrition Support Physician.

His clinical interests include thyroid disorders, osteoporosis, nutrition, parathyroid disease, and endocrinology. Dr. Mechanick is a member of numerous professional societies including the American Diabetes Association, the American Society of Clinical Nutrition, the International Society of Neuroendocrinology, and the New York Academy of Sciences.

He currently serves on the Board of Directors of the American Association of Clinical Endocrinologists (AACE) and on the Editorial Board of the [Journal of Thyroid Research](#). He is the co-editor, with Dr. Elise Brett, of two books that will be published in the Spring of 2010: **Power of Prevention: The Complete Guide to Lifelong Nutrition**, to be published by Booksurge Publishing (available at www.amazon.com) and **XXS Pocket Diabetes**, to be published by Börm Bruckmeier Publishing (available at www.Media4u.com).

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