

Nutrition Recommendations for Carcinoid Syndrome

What dietary changes can I make to manage Carcinoid Syndrome?

For some people certain foods and drinks can trigger carcinoid syndrome symptoms. The types of foods/drinks that can cause a reaction are individual in nature. The most reliable way to identify triggers for your symptoms is by keeping a food/drink and symptom diary for a 2 week period. If you find a food or drink that causes symptoms, try reducing the portion size or completely avoiding it. You only need to avoid particular foods if they cause you to have these symptoms. Every one is unique and you may be able to tolerate nearly all or very few of the trigger foods.

Certain foods have been identified as common triggers for symptoms in patients – limiting or avoiding these foods may help you manage carcinoid syndrome.

- Fatty foods, raw vegetables, raw fruits and spicy foods with pepper may cause diarrhea, gas and bloating.
- Tomatoes may cause diarrhea and flushing.
- Alcohol may cause diarrhea and flushing.
- Large meals may cause diarrhea.
- Foods containing amines (see table) may cause diarrhea, gas, bloating and flushing.

Foods High in Amines: Avoid/Limit	Foods Moderately High in Amines: Avoid/Limit
<ul style="list-style-type: none"> • Aged cheeses (Cheddar, Camembert, Stilton) • Alcohol • Smoked, salted or pickled fish and meat (herring, salami, sausage, corned beef) • Chicken, beef liver or liver pate • Yeast extracts, Brewer's yeast, nutritional yeast or "hydrolyzed proteins" such as marmite/vegemite, or used for flavoring processed foods • Fermented foods – tofu, miso, sauerkraut, shrimp paste, fish sauce, soy sauce 	<ul style="list-style-type: none"> • Caffeine – coffee, cola • Dark chocolate, milk chocolate, cocoa powder • Peanuts, coconut, brazil nuts • Raspberries, bananas, avocados • Soyfoods – tempeh • Fava beans

General Nutrition Tips for Symptomatic Carcinoid Syndrome

- Eat 4-6 smaller, meals instead of 3 large ones.
- Increase your dietary protein intake. Protein rich foods include fish, poultry, lean meats, eggs, low-fat dairy, nuts, seeds, legumes, protein powder and nutrition supplement drinks.
- Reduce your fat intake. Choose the healthiest fats including extra virgin olive oil, nuts and seeds.
- Cook vegetables for improved digestibility.
- To minimize exacerbating diarrhea, limit or avoid wheat bran and foods made with wheat bran, prunes, dried fruits, and popcorn.
- Choose foods low in amines (see table).

Foods Lower in Amines:
<ul style="list-style-type: none">• Fresh lean meats, fresh poultry, fresh fish• Most vegetables – cooked may be better tolerated than raw• Fruits in moderate amounts – except banana, avocado, and raspberries• Grain foods, starchy foods – lower fiber or soft cooked grains may be tolerated the best• Fresh cheeses and dairy – low-fat cottage cheese, ricotta cheese, mozzarella cheese, low-fat yogurt or kefir, low-fat cream cheese, low-fat milk or low-fat lactose-free milk• Fresh soy foods – soy milk, edamame

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- Carcinoid syndrome causes the body to make large amounts of serotonin; this process increases the body's need for both dietary protein (to supply more of the amino acid, tryptophan) and niacin (Vitamin B3).
 - If you have carcinoid syndrome or elevated serotonin levels, ask your doctor about taking a niacin supplement. It may be recommended that you take 25 – 50 mg of niacin or niacinamide daily. This amount can often be found in a multivitamin and B-complex vitamins.
 - Additionally, chronic diarrhea reduces your body's ability to absorb the vitamins and nutrients in the foods you eat. It may be recommended that you take a multivitamin to supplement your diet.
 - Once your symptoms of carcinoid syndrome are controlled it is recommended to follow the nutrition recommendation for cancer prevention.

Sample Menu – Low in Common Carcinoid Symptom Trigger Foods

Breakfast:

- Oatmeal (1 cup cooked) with chopped almonds or pumpkin seeds (2 T), cinnamon and unsweetened applesauce (1/2 cup), hard-boiled egg (1), and herbal tea

Lunch:

- Fresh roasted turkey (avoid processed meats made with added nitrates/nitrites) sandwich with vegetable soup (1 cup)

Dinner:

- Baked wild caught salmon (3-4 ounces) with ½ of a medium sized baked sweet potato and mixed vegetables (1 cup) sautéed in olive oil

Snacks (1-3 per day):

- Plain Greek yogurt (2/3 cup) with blueberries (1/2 cup)
- Pita (1) with humus (1/3 cup)
- Sliced pear dipped in almond butter (2 T)
- Smoothie (sample recipe below)

Sip water throughout the day

High Calorie, High Protein Smoothie Recipe
<p>Almond Weight Gain Shake:</p> <p>Ingredients:</p> <ul style="list-style-type: none">• 1 cup almond, soy or rice milk (unsweetened)• ½ cup organic plain yogurt• 1 scoop protein powder• 1 T almond butter• ¾ frozen fruit (cherries and peaches pair well with almond butter) <p>Blend & Enjoy!</p> <p>400 calories, 30 gm protein</p>