

Nutrition & Neuroendocrine Cancer

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“Let food be thy medicine and medicine be thy food” ~Hippocrates



We will cover...

- How stress affects us?
- What foods are essential and why?
- Carcinoid syndrome and your diet.
- Nutritional strategies for managing diarrhea, flushing, weight loss, headaches, nausea, hypoglycemia and ulcers.
- Which foods aggravate carcinoid syndrome?
- Nutrients depleted by your medication.
- Meal planning guidelines.

Stress

- Stress is implicated in every symptom that we have. Stress affects our bodies, thoughts, feelings, and behavior.
- Stress elevates our blood pressure and increases the risk of a heart attack or diabetes. When we are under stress our cortisol levels go up.
- Cortisol stimulates our appetite and signals fat to be deposited in the abdominal region. It affects sleep and memory, reduces bone density, increases triglyceride levels, increases memory loss and estrogen and suppresses immunity. It also affects our colon, which can lead to illness.

Symptoms of Stress

- Migraine/tension headaches
- Multiple Sclerosis
- Endocrine and autoimmune problems
- Irritable bowel
- Tension headaches
- Lower back pain
- Digestive problems
- Ulcers/Colitis
- Panic attacks
- Shingles
- Stroke
- Chest pains
- Heart attack
- Cancer
- Arthritis
- High blood pressure
- Skin problems; psoriasis, eczema, acne
- Coronary thrombosis
- Epileptic attacks
- Kidney disease
- Allergies
- Diabetes

Perception

- Our interpretation of stressors affects our ability to cope with stress. Our beliefs, attitudes, and perceptions determine how we interpret and react to potentially stressful situations.
- If we tend to see situations as threats, pressures, demands, or catastrophes, we compromise our ability to cope. The resulting feeling of helplessness sets us up for a variety of unpleasant responses to stress.
- *“Change the way you see things and the things around you will change.”* –Richard Bach

Reducing Stress

- Get enough sleep.
- Exercise and eat right for your body.
- Try deep breathing, meditation and yoga.
- Build a social support network.
- Learn to say “no.”
- Create peaceful times in your day, especially between 2 pm and 5 pm, when cortisol levels are lower.
- Try different relaxation methods until you find one that works for you.
- Cut down on addictive substances such as; coffee, alcohol, sugar...

Food

Food has the ability to alter the production or release of certain neurotransmitters, the chemical messengers that carry information from one nerve cell to another.

Eating too much can make you feel lethargic, while not eating enough causes low blood sugar and can make you feel irritable and anxious. Eating the right foods, frequently and in smaller portions throughout your day, will help to keep your blood sugar stabilized, avoiding mood swings and symptoms.

- Stress and nutrition are closely intertwined. A nutritional deficiency is itself a stress, since suboptimal amounts of one or more nutrients places a strain on all of the body's metabolic processes dependent on that nutrient.

How well your body is nourished prior to and during a stressful event will affect how well you handle the stress.

Stress affects our need for nutrients by reducing absorption, increasing excretion & altering how the body uses the nutrients, ultimately increasing requirements for nutrients.

Basic Guidelines

- Choose plant based foods, cut out red meat and avoid processed foods
 - Plant based foods have been linked to a reduced risk of cancer, heart disease, obesity, diabetes and hypertension. High in vitamins, minerals, fiber, phytonutrients (boost immune system, neutralize free radicals, detoxify carcinogens)
 - Reduced consumption of animal fats, animal proteins, salt, sugar, additives and preservatives
- Avoid dairy products, use almond, rice or coconut milk.
- Choose organic – less pesticides

Basic Guidelines

- Avoid soy products – Omega-6 = inflammation
- Avoid too much caffeine
- Avoid too much alcohol
- Eat a lot of fruit and vegetables
- Consume cruciferous vegetables daily (steamed or softened in soup)
- Use sprouts and grasses (barley, wheatgrass)
 - Broccoli sprouts - Broccoli is the best source of the chemical precursor to Sulforaphane, Glucoraphanin. Sulforaphane has been shown to mobilize, or induce, the body's natural cancer protection resources and help reduce the risk of malignancy.

- Garlic, onions and leeks - increase enzymes that deactivate carcinogens, enhancing our ability to eliminate carcinogens before they do any damage. Onion and garlic compounds slow the growth and stimulate the self-destruction of cancer cells.
- Sea vegetables; kelp and dulse.
- Dandelion - liver tonic and bile stimulant and helpful for hypoglycemia.
- Fresh vegetable juices - alkalize and are full of vitamins and minerals
- Citrus – alkalizes and cleanses
- Phytoestrogens; ground flaxseeds, mung bean sprouts, red clover sprouts, pumpkin seeds
- Shitake mushrooms - boost immune system

Turmeric

- Anti-oxidant, anti-tumor, anti-inflammatory
- Curcumin, the main active ingredient can prevent the formation of a blood supply to cancerous tumors
- Reduces both hormone dependent and hormone independent cancer cells
- Have one teaspoon of turmeric daily or supplement with curcumin



Omega-3 fatty acids

- Omega 3 fatty acids are found in wild salmon, herring flaxseeds, hempseeds, chia seeds, flax & hemp oil, green leafy vegetables, and walnuts.
- Omega-3 suppresses inflammatory cytokines associated with:
 - Cancer cachexia (weight loss)
 - Joint pain
 - Cancer related fatigue
 - Helpful with mood, memory and focus

Vitamin D

Can slow the progression of cells from premalignant to malignant states and keep their proliferation in check.

It helps improve muscle strength and immune function.

It helps reduce inflammation.

It promotes the absorption of calcium from the small intestine.

Vitamin D

- Sunlight (between 11 am - 2 pm, for 15 - 30 minutes before applying sunscreen), fatty fish, sprouted seeds, alfalfa, mushrooms, sunflower seeds, fortified foods & dietary supplements.
- Ask your MD to check your vitamin D levels (“25-OH vitamin D” in your blood) to determine the need for supplementation, especially with chronic diarrhea and fat malabsorption.

Niacin B3

- Some people with carcinoid develop niacin deficiency because the tryptophan is used for excess serotonin production (causing carcinoid symptoms)
- Symptoms of B3 deficiency include:
 - Depression
 - Diarrhea
 - Inflamed mucus membranes
 - Mental confusion
 - Scaly skin sores

B3 Niacin

- Proper circulation and healthy nervous system. Required by the liver to break down estrogen and prevent tumor growth.
- Food sources: nuts, brown rice, sunflower seeds, potatoes, green vegetables, almonds, rhubarb, whole barley and rice bran.

Carcinoid Syndrome & Diet

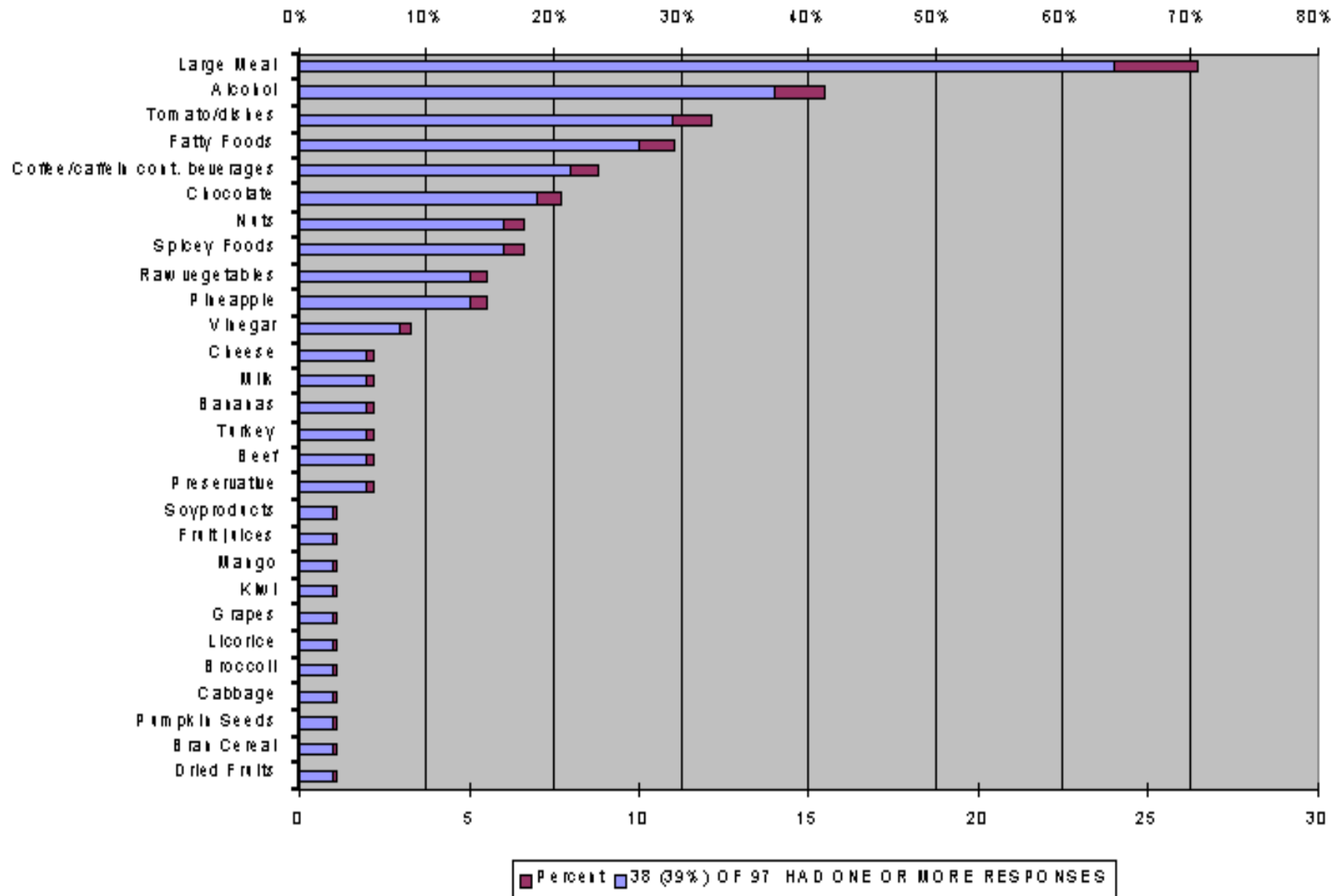
- We all have a unique biochemistry and foods behave differently in different people.
- It is important to look at the whole picture to determine the cause.
- For example, fatigue can be caused by poor sleep, low blood counts, hypothyroidism, stress, allergies/food intolerances, PMS, side effects of medicines and depression, which eventually may lead to poor food intake.

Carcinoid Syndrome & Diet

- Symptoms include flushing, sweating, wheezing, diarrhea, abdominal pain, loss of appetite, weight loss, nausea, shortness of breath
- Common triggers:
 - Hormone secretions
 - Certain foods – patterns
 - Stress/perception/attitude
- If you have symptoms – diet modifications may help

- Keep a food/mood and symptom log and see if there is a pattern
- Most common food triggers:
 - Large meals
 - Fatty meals
 - Very spicy foods
 - Alcohol
- Foods high in Amines– chemicals in foods that cause carcinoid tumors to produce more of the hormones that cause carcinoid syndrome

Foods reported to provoke reactions



The Carcinoid Cancer Foundation

(<http://www.carcinoid.org>)

- The number one “offender” turned out to be large meals.
- Alcohol, tomatoes (cooked seemed better tolerated than raw), fatty foods, coffee and caffeine containing drinks, chocolate, nuts, spicy foods, raw vegetables, pineapple, vinegar, cheese, milk, bananas etc.
- These foods may trigger attacks, affecting quality of life.

Amines in food

- Amines are naturally occurring chemicals found in many foods. They result from the breakdown of proteins or through the fermentation process, and are responsible for giving food its flavor. The more intense the flavor, the higher the amine content, so the longer a fruit ripens or a meat cures the more amines it will contain.
- Tyramine and other pressor amines are usually only present in **AGED, FERMENTED, AND SPOILED PROTEIN PRODUCTS.**

Amine content of foods

High amounts:

- Aged cheeses
- Alcohol
- Smoked, salted fish and meats
- Yeast extracts (found in many processed foods), Brewer's yeast
- Fermented foods (tofu, miso, sauerkraut)

Moderate amounts:

- Caffeine (large amounts), coffee, colas
- Chocolate (especially dark)
- Peanuts, brazil nuts, coconut
- Avocado, bananas, raspberries
- Most soybean products (soy sauce, tempeh)
- Fava beans (broad beans)

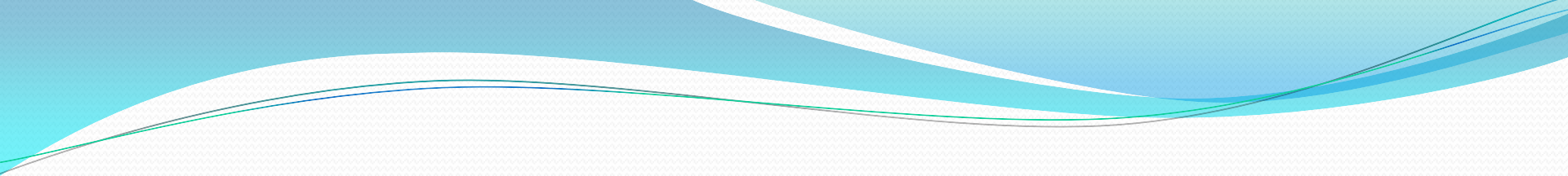
Foods containing serotonin

Highest amounts:

- Walnuts, pecans
- Plantains
- Pineapple, banana, kiwi, plums
- Tomatoes
- Avocados
- Dates
- Grapefruit, Cantaloupe, Honeydew
- Olives
- Eggplant

Moderately low amounts:

- Brazil nuts, filberts, almonds, cashews, macadamia nuts
- Sunflower seeds
- Strawberries, blueberries
- Raspberries, cranberries, cherries, peach, orange, lemon
- Apple, papaya, mango
- Limes, carrots
- Cucumber, lettuce
- Corn, potatoes, rice

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- The only time that you would want to stay away from foods that are high in Serotonin is before and during the collection of the 24-hour urine for the 5-HIAA test.
 - Will not fuel tumor growth.

“So, what can I eat?”

- Only avoid foods that bother you!
- If no symptoms, follow the healthy guidelines.
- With symptoms:
 - Try 4 – 6 smaller meals (less food more often)
- Increase protein – choose vegetarian sources.
- Beans, quinoa, buckwheat, brown rice protein, sprouts, coconut milk, almond butter, tahini, sunflower/pumpkin seeds, oatmeal, wheatgrass and eggs.
- Niacinamide: 25-50 mg twice daily.

Information about protein

- The average adult requires approximately 30 – 60 grams per day (1 gram per 5 pounds of body weight).
- When we consume animal protein, the body increases its production of a hormone called IGF-1. IGF-1 has been shown to promote the growth, proliferation and spread of cancer cells.
- Several observational studies have suggested that high circulating IGF-1 may translate into the promotion of tumor growth in the colon.

IGF-1

- Minimizing or avoiding animal protein, isolated soy protein and refined carbohydrates can help to keep our IGF-1 levels in a safe range. Green vegetables, beans and other legumes and seeds are rich in plant protein and have cancer-preventive, not cancer-promoting properties.
- However, there is a need for more protein at different times. Choose lower fiber (if fiber is a problem), from vegetarian sources.

Carcinoid Syndrome

- Choose low fat
- Avoid greasy, fried foods
- Avoid animal fats (butter, cheese, chicken skin...)
- Avoid trans-fats (partially hydrogenated oils)
- Include small amounts of foods rich in healthy omega-3 and phytoestrogens:
 - Ground flaxseeds, walnuts, raw pumpkin seeds, clover sprouts and mung bean sprouts
- Medium chain triglycerides (MCT oil) can be used:
coconut oil

Carcinoid Syndrome

- Vegetables & fruits
- 4-5 cups daily as tolerated
- Steamed vegetables – avoid raw during symptoms
- Steamed Brassicas daily; broccoli, cabbage, cauliflower, collard greens, Brussels sprouts, bok choy
- Large portions of fruit may increase diarrhea
- Small portions of vegetables & fruits may be better tolerated
- Vegetable juices, soups and smoothies are better tolerated

Carcinoid Syndrome

- Low sodium – High potassium
- If sodium is high – cells swell and trap toxins
- Less fluid retention
- Potassium preserves alkalinity of the body fluids, encourages kidneys to eliminate toxic wastes
- Potassium rich foods: caraway seeds, navy beans, dark cherries, dried apricots, lentils, walnuts, oranges, almonds, apples, avocados, peaches, bananas, grapefruits, pineapples, potatoes, squash, tomatoes, sage, mint, apple cider vinegar, carrot juice

Strategies for Controlling Diarrhea

- Eliminating dairy
- Eliminating high sugar foods, especially fruit juices
- Cut down on raw fruits and vegetables – vegetable juices and soups with cabbage are better
- Take proteolytic enzymes
- Consume BRAT to help control diarrhea – (bananas, rice, applesauce and toast)
- Mix slippery elm, ground flaxseeds or chia seeds with applesauce or a small amount of liquid (2 oz) and take with meals
- Banana flakes; 15g, 1-3 times daily

- Take probiotics – HMF forte or Udo's choice, Ultra Flora IB
- Use mint flavored chlorophyll in your water
- Put electrolytes in your water – Emergen-C
- Use Ultra Clear Sustain from Metagenics
 - Supports GI mucosal integrity.
 - Supports a healthy microbial balance, is a low allergy rice protein, readily absorbed metabolized lipid source, and contains zinc gluconate, L-glutamine and pantothenic acid.

Slippery Elm

- Mucilage – complex mixture of polysaccharides that form a gelatinous fiber with water
- High in nutrients
- Gentle, easily digested, well tolerated for gastritis, and other intestinal problems such as inflammatory bowel, ulcerative colitis
- Absorbs toxins from the bowel; increases bulk size and enhances beneficial bacteria
- Helps with hormone balance
- Anti-inflammatory

To control nausea

- Fresh ginger tea
- Peppermint
- Chamomile
- Red raspberry
- Cocculine Boiron - homeopathic



Sandostatin

- Decreases bile secretion
- Can cause hypoglycemia
- Suppresses secretion of thyroid stimulating hormone, which may result in hypothyroidism
- Depressed vitamin B₁₂ levels have been observed in some patients receiving Sandostatin therapy, and monitoring of vitamin B₁₂ levels is recommended during chronic Sandostatin therapy

Our lymph system:

Plays a vital role in helping our immune system and only moves by osmotic pressure.

The lymphatic fluid is only active when our bodies are active. If you do not move, then your lymph system will become stagnant and toxic. This increases vulnerability to illness.

Rebounding, yoga, dry brushing or taking a bath in epsom salts helps to get your lymphatic system moving.



Breakfast	Creamy buckwheat cereal with ground flax, smoothie with greens or fresh vegetable juice
Snack	Fruit, water with chlorophyll or fresh juice with wheatgrass
Lunch	Veggie wrap with nori, steamed cabbage quinoa salad with avocado & sprouts
Snack	Rice crackers, almond butter, carrots, celery & hummus, cilantro pesto
Dinner	Stir-fry with mushrooms, brown rice, salad w/dandelion, grated beets and sprouts or vegetable soup (pureed if easier to digest)
Snack	Apple sauce (homemade) with 1 tbsp ground flax or slippery elm

and finally...

Eat healthy! Stay motivated! Be happy!

For more information or to set up a private
consultation:

www.arawiseman.com

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