



Dietary Suggestions during Chemotherapy and/or Radiation

Introduction/Rationale

Patients receiving chemo and radiation therapy often have significant gastrointestinal symptoms including nausea, vomiting, diarrhea, constipation, reduced appetite, etc. Proper nutrition is very important during this time to ensure treatment efficacy and tolerance and prevent weight loss. By adhering closely to these guidelines you will:

1. Ensure adequate intake of essential nutrients
2. Consume foods that are easy to digest
3. Avoid foods that will increase inflammation or stress the digestive tract

General Recommendations:

- **Eat Organic as much as possible:** organic produce normally contains less pesticides and herbicides (these chemicals can harm the nervous system). In addition, organic produce has been shown to have increased levels of vitamins and minerals.
- **Eat “Free Range” as much as possible:** Free range means first that the meat has not been subjected to hormones, antibiotics and inorganic grain feed. Second it usually means that the animal was treated humanely while being reared.
- **Avoid Canned Food:** The canning process causes heavy metals like Lead, Cadmium, Tin and Iron to leak into the food. These metals can be hard on the body.
- **Drink Good Water:** Reverse Osmosis filtered water is the best water to drink as it has low levels of inorganic minerals, low levels of chlorine, low oxidation levels, and is pH balanced. You should drink at least 1.5 – 2.0 L of water/day (8-10 glasses) in order to adequately flush the system. This does not include coffee, tea, juice...Only water!
- **Eat Slowly:** Take time to eat. Stop working. Turn off the TV and chew your food. Digestion begins in the mouth and cannot be completed properly without the breaking down process done by the teeth.

Toxicity in Our Diets

Seafood to avoid due to toxicity concerns:	
<ul style="list-style-type: none"> • Bluefin tuna or Toro and Albacore tuna and even Skipjack tuna • Halibut • Chilean Sea Bass • Grouper • Orange Roughy • Shark/Dogfish • Skate • Atlantic Sole 	<ul style="list-style-type: none"> • Catfish • Lingcod • Mahi Mahi (Opah) • Marlin • Farmed Salmon • Farmed Shrimp • Striped Bass • Swordfish • Asian derived Tilapia • Tile Fish
Seafood that have not been found to be contaminated with toxic chemicals, but are to be avoided due to sustainability concerns:	
<ul style="list-style-type: none"> • Atlantic Cod • Monk Fish • Abalone (unless it is farmed) • Anchovy • Clams • King Crab from Russia 	<ul style="list-style-type: none"> • Octopus • Rockfish • Giant Scallops • Red Snapper • Spiny and Rock Lobster from Central America
Seafood safe to consume and do not harm the environment:	
<ul style="list-style-type: none"> • Arctic Charr • Pacific Halibut • Herring • Jelly Fish • Mackerel • Mullet 	<ul style="list-style-type: none"> • Pollock • Sablefish • Sardines • Squid • Blue Whiting • Alaskan Sockeye salmon
Heavily Sprayed Produce (always purchase this produce list organically grown):**	
<ul style="list-style-type: none"> • Peaches • Apples • Sweet Bell Peppers • Celery • Nectarines • Strawberries 	<ul style="list-style-type: none"> • Grapes (Imported) • Blueberries • Spinach • Potatoes • Lettuce/Kale/collard greens • Cherry Tomatoes
Produce with the lowest Pesticide Residues (these products contain lower amounts of pesticide and are not as important to be purchased in the organic variety)**	
<ul style="list-style-type: none"> • Onions • Avocado • Sweet Corn (Frozen) • Pineapples • Mango • Sweet Peas (Frozen) • Asparagus • Mushrooms 	<ul style="list-style-type: none"> • Kiwi • Cabbage • Eggplant • Cantaloupe • Watermelon • Grapefruit • Sweet potato
Meats and Poultry	
<ul style="list-style-type: none"> • Most animals in North America are given hormones to encourage rapid development and growth. The European Commission has banned the use of hormones in meat due to their potential effects on human health. Excessive hormones have been implicated in a variety of cancers. • Most meat and poultry products in North America are given large doses of antibiotics to prevent infection mostly due to poor raising conditions and cramped quarters. This overuse of antibiotics can lead to antibiotic resistance and excessive human ingestion. • You should always eat organic, free range, antibiotic free meats and poultry. 	

WHAT TO DO: Foods to include in your diet

Dairy Alternatives:

- Rice or Almond Milk
- Rice based ice creams
- Sorbets (no milk/cream)

Meats/Meat Alternatives:

The North American diet tends to include too much animal protein. Although a vegetarian diet is not necessarily the optimum way to go you should look to moderate meat products in your diet. Acceptable animal protein/alternative sources are:

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| • Chicken | • Lamb |
| • Turkey | • Tofu |
| • Fish | • Tempeh |

Grains:

These grains are good sources of fiber and are hypoallergenic/hypointolerance. There is a large number of prepared products utilizing these grains that are available. Contrary to normal healthy eating guidelines it will be helpful to avoid whole grains as they can be difficult to digest. Grains to include are:

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| • Rice | • Amaranth |
| • Gluten Free Oats | • Buckwheat |
| • Quinoa | • Millet |

Fruits & Vegetables:

In times of significant gastrointestinal distress all fruits and vegetables should be cooked in order to reduce the amount of harsh insoluble fiber that can be irritating to the gastrointestinal tract. Juicing is another method of removing this fiber while also getting the raw vitamins, enzymes and phytonutrients.

- Remember...organic is best
- Eat lots and lots of veggies/fruit even though it needs to be cooked

Legumes:

While legumes are good sources of vegetable protein they are often very difficult to digest. It is important to restrict your intake of legumes to fresh forms like fresh green beans, wax beans and peas.

Nuts:

Nuts are excellent sources of certain minerals and protein; however, they can be difficult to digest. Usually nut butters are more tolerable and can be taken without chance of intestinal irritation. Try almond, cashew and macadamia nut butters. These are energy dense and tasty.

Ginger Tea:

One of the best therapies for reducing nausea and vomiting is Ginger Tea (Pillai, Sharma, Gupta and Bakhshi 2011). It is simple to make and can be very helpful to take.

- Use 1" of fresh raw ginger
- Wash the ginger and remove the skin
- Slice thinly and place into boiling water for 7 minutes
- Add agave, xylitol or honey to sweeten to taste

Drink 3 cups of this per day when gastrointestinal upset is high

Protein Powders

Protein powders can be effective supports for individuals who are having a difficult time keeping up their nutrient intake during active treatment. Douglas Laboratories Ultimate Protein Plus is a gentle hypoallergenic protein powder formula combined with vitamins, minerals and essential fatty acids. Use up to 3 scoops per day in rice or almond milk.

Fats and Oils

Very likely your naturopathic doctor will have recommended essential fatty acids during your treatment; however other fats can be effective nutritional supports during active treatment. Butter is a relatively gentle fat that contains medium and short chain triglycerides that can be helpful for feeding the cells of your gastrointestinal tract. Olive oil can also be used to add on top of vegetables for flavor and extra calories. Take care to not use too much oils and fats as large quantities can be irritating.

Soups and Broths

Soups and broth are some of the best foods to eat during treatment as they are easy to digest and full of healthy nutrients. Homemade is always better. Here is a recipe for a vegetable alkaline broth that is not only nourishing, but helps to neutralize acids in the system:

Prepare one cup of each of the following (chopped):

- Celery – celery root preferable
- Green beans – well scrubbed fresh, frozen acceptable
- Zucchini
- Potatoes (especially during winter months)
- Carrots

The above can be varied according to the season and availability. For variety and flavour one or more of the following may be added:

- Fennel
- Parsley root
- Garlic clove
- Bay leaf
- Cloves
- Juniper berries (traditionally aids in elimination through the kidneys)
- Nutmeg

Cover with good water and simmer (do not boil) for 60-90 minutes. Strain and discard the vegetables, add a small amount of sun-dried sea salt.

WHAT NOT TO DO: Foods to exclude from your diet

Dairy Products:

Humans are the only mammals that consume milk after the weaning years. Although milk products have high levels of protein and certain vitamins and minerals humans are not meant to consume them after nursing stops. Our digestive tract does not contain the enzymes necessary to break down both the protein and sugars in milk. This leads to fermentation and putrefaction of food leading to bowel dysfunction, immune dysregulation, and increased toxic burden on the body. Ensure you avoid:

- Milk
- Cheeses (all varieties)
- Cream
- Yogurt
- Ice Cream

Meats:

Certain meats tend to acidify the system as well as harbor toxins that can adversely affect physiologic function (Wang et al 2011). In addition, certain meats contain high levels of histamine which can irritate the gastrointestinal tract and aggravate allergies. Meats to avoid:

- Beef
- Pork
- Game Meats (Venison, Rabbit, Moose, etc.)

Grains:

Gluten containing grains not only adversely affect individuals with celiac disease, but can also adversely affect other individuals with gastrointestinal dysfunction. Avoidance of these grains is key:

- Barley
- Rye
- Oats (gluten free is acceptable)
- Wheat
- Spelt
- Kamut

Fruits:

Generally all fruits are healthy choices but citrus fruit have been long known to aggravate certain allergic conditions. This is most likely due to the fact that they are heavily sprayed (even organic) and tend to contain fungal organisms. Fruits to Avoid:

- Oranges
- Grapefruit
- Honeydew melons and cantaloupes
- Kiwis

Nuts:

Peanuts are the one major nut to avoid since they universally contain small amounts of a known carcinogen called aflatoxin.

Eggs:

Egg whites are the main problem with egg intake. The protein in eggs tends to be very acidifying and create immune reactions within the intestine.

Onions & Garlic:

What happens when you cut an onion? Eyes water, nose runs and general mucosal irritation. Once eaten, onions and garlic have the same effect on your intestines.

References:

Environmental Working Group. EWG's 2011 Shopper's Guide to Pesticides. Retrieved from <http://static.foodnews.org/pdf/EWG-shoppers-guide.pdf>. June 13, 2011.

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Wang J, Joshi AD, Corral R, et al. Carcinogen metabolism genes, red meat and poultry intake, and colorectal cancer risk. *International Journal of Cancer*. 2011.