

The Low-iodine Diet (adapted from Thyroid Cancer Survivor's Association)

Thyroid cancer patients with papillary or follicular thyroid cancer often receive a dose of radioactive iodine (RAI) about two months after their surgery in an attempt to destroy (ablate) any remaining thyroid cells in their bodies. Most thyroid cancer patients also undergo whole-body radioiodine scans at periodic intervals, using a "tracer" dose of RAI. If their scan is not "clean", they then receive treatment with a larger dose of RAI in an attempt to destroy any remaining thyroid cells in their bodies.

In preparation for an RAI scan or an RAI treatment, patients are usually asked to go on a low-iodine diet. The purpose of a low-iodine diet is to deplete the body of its natural stores of iodine to help make the radioactive iodine treatment more effective. The premise is that when the radioactive iodine is administered, the thyroid cells will "suck" up the iodine because it has been so depleted.

This diet is for a short period. The usual time period is around two weeks or slightly more. The diet usually begins around two weeks before testing and continues through the testing and treatment period. However, recommendations for the time period can vary, depending partly on the individual patient's circumstances.

General Comments

Remember: LOW IODINE has NOTHING TO DO WITH SODIUM.

Sodium in any form is OK, as long as it is not provided as IODIZED salt. NON-IODIZED salt is OK for the diet, as long as it is not sea salt. As noted below, you should avoid any product or ingredient from the sea. That's because sea-based products are high in iodine. Also, this is a "low-iodine" diet, not a "no-iodine" diet.

During your time on the low-iodine diet, avoid foods high in iodine (over 20 mcg per serving) and limit foods moderate in iodine (5 to 20 mcg per serving). You may freely eat any foods that are low in iodine (up to 5 mcg) per serving. There are lots of foods that you can eat. We will include a list in these guidelines. For recipes and a snack list, use ThyCa's free **Low Iodine Cookbook**. You can download it free from www.thyca.org and print it out. You also can adapt your favorite recipes from your own cookbooks to the low-iodine diet by eliminating ingredients that are high in iodine, or by substituting ingredients from the list of foods and ingredients that are fine on the diet. Thyroid cancer survivors created this cookbook and donated these recipes to help you with this diet.

Avoid These Foods and Additives

Avoid the following foods, starting when instructed before your radioactive iodine test or treatment, and continue as instructed until after your radioactive iodine treatment is completed. These foods and ingredients are high in iodine (over 20 mcg per serving, according to researchers' presentations at our conferences).

- **Iodized salt** and **sea salt** and **any foods containing iodized salt or sea salt**. Non-iodized salt (such as Kosher salt unless the label says that it is iodized or sea salt) may be used. The reason to avoid sea salt is that all products from the ocean tend to be high in iodine. You can usually find plain, non-iodized salt next to the iodized salt at your grocer.

- **Seafood and sea products** (fish, shellfish, seaweed, seaweed tablets, kelp). These are all very high in iodine and should be avoided.
- **Dairy products** (milk, cheese, cream, yogurt, butter, ice cream, powdered dairy creamers, other dairy products). Although the source of the iodine is not known, tests of all types of dairy products have generally shown the presence of iodine, sometimes in very large quantities. Animals secrete dietary iodine into their milk, animal feeds often contain iodine, and products containing iodine may be used to clean udders. Also, methods for processing dairy products can change over time and from one company to another. Note: Nondairy creamers often have iodine containing ingredients, too.
- **Egg yolks** or whole eggs or foods containing whole eggs. (Egg whites are acceptable, because they do not contain iodine).
- **Foods or products that contain these additives:** carrageen, agar-agar, algin, alginate, nori (these are food additives that are seaweed by-products).
- **Commercial bakery products.** Avoid bread products that contain iodine/iodate dough conditioners (usually small bakery breads are safe; it's best to bake it yourself or substitute with Matzos). If you read labels closely, you may also be able to find crackers made only with flour and water. While a few commercial bakery products have tested low in iodine, manufacturing processes can change over time.
- **Red Dye #3.** However, Red Dye #40 is OK. We suggest that you avoid red, orange, or brown processed food, pills, and capsules. Many red, red-orange, and brown food dyes contain iodine and should be avoided. The problem with food colors is specific to Red Dye FD&C #3 (erythrosine) ONLY. However, the problem is that some food labels do not specify which red dyes are used. Better safe than sorry. For medications, the best source is the Physician's Desk Reference (PDR), which clearly states the ingredients. For example, Rocaltrol in the 0.5 mcg size is NOT good for the diet because it contains FD&C Red Dye # 3. However, Rocaltrol 0.25 mcg does not and is safe for the diet (you can take two of them to get to the 0.5 mcg dose). Please always check with your physician.

Avoid These Foods and Additives—*continued from the previous page.*

- **Chocolate** (for its milk content). Cocoa powder and some dark chocolates are permitted. Check the label for other ingredients not allowed on the low-iodine diet.
- **Molasses** (sulfured, such as blackstrap molasses, which has a slightly bitter taste. It's okay to use the milder, fairly sweet unsulfured molasses usually used in cooking.)
- **Soy products** (soy sauce, soy milk, tofu). These vary in iodine content. Some are moderate in iodine. (Some diets say that vegetable oil with soy is okay.)
- **Some beans** – The National Institutes of Health diet says to avoid these beans: red kidney beans, lima beans, navy beans, pinto beans, and cowpeas.
- **Potato skins.** These have iodine. The inside of the potato is fine.

- **Rhubarb.**

- **Iodine-Containing Vitamins, and Food Supplements. Also products containing iodate or iodide.** Check the label and ingredients and discontinue completely if iodine is included. Most vitamins with minerals contain iodine. Vicon Forte, a multivitamin, is fine for the diet.

- If you are taking a **Medication** that contains iodine, check with your physician.

Limit the Amounts of these Foods

The following foods are moderate in iodine, so you can eat them but should limit your intake. Moderate in iodine means 5 to 20 mcg per serving, according to the researchers' presentations at our conferences.

- Up to 5 ounces per day of fresh meats such as chicken, beef, pork, lamb, and veal are fine on the low-iodine diet. (Up to 6 ounces, according to one of the research presentations.) Whole cuts tend to contain less iodine than do ground meats. Also, check the label on whole turkeys, turkey breasts, turkey cutlets, chicken, and all pork products. Many food makers inject broths into the turkey or chicken or pork. The label may not indicate whether the broth contains iodized salt. If you are not sure, go to your local butcher for fresh turkey, pork, or chicken.

- Up to 4 servings per day of grains, cereals, pasta, and breads without iodine-containing ingredients are fine on this diet. Homemade baked goods and cereals are best on this diet. If you use processed foods, read the labels carefully to avoid iodine-containing ingredients. Also, remember that labels are not always accurate or up to date.

- Rices vary in the amount of iodine, so rice should be eaten only in limited amounts. Some low-iodine diets recommend avoiding rice. Basmati rice is the best to eat on the low-iodine diet.

What About Restaurant Foods and Fast Food?

Although restaurants generally use non-iodized salt, it is not possible to know whether a particular restaurant is using iodized salt or sea salt. The manager or serving staff may not know what product is being used, or whether butter or other dairy products are present in foods. The ingredients that chain and fast-food restaurants use may change.

Therefore, we suggest that you try to avoid restaurant foods, as there is no reasonable way to determine which restaurants use iodized salt. Avoid if in doubt.

What About Manufactured and Processed Foods?

Some published low-iodine diets allow salty processed foods. Some of these foods include potato chips and cured and corned foods such as hot dogs, ham, corned beef, sauerkraut, bacon, sausage, and salami.

Currently, manufacturers of processed foods generally use non-iodized salt. However, food processing techniques can change and labels are not always accurate or up to date. For that

reason, if fresh foods are available in their area, many patients prefer to eat fresh foods rather than processed foods during the short period of being on the low-iodine diet. They avoid processed food, because it is not known for sure whether or not iodized salt has been used. For any processed food, it is also important read the label to be sure there is no Red Dye #3.

In the past many patients have contacted manufacturers asking whether or not they used iodized salt in their products. Doing this is NOT recommended for the following reasons:

1. Manufacturers cannot guarantee that the ingredients they receive from their suppliers do not contain iodized salt.
2. Manufacturers often use iodine-base cleaners on their machinery.
3. Because fewer and fewer manufacturers have been using iodized salt in their food processing, there seems to be a rise in the number of goiter cases. It might become the practice to start using iodized salt again.

Foods That Are Fine to Eat on the Low-Iodine Diet

The low-iodine diet consists mostly of fresh, low-fat, low-calorie foods. Because of this, following this diet greatly reduces the tendency to gain weight while hypothyroid. The following are fine. Their iodine content is 5 mcg or less, according to the researchers' presentations at our conferences.

- Fresh fruits and fruit juices, **except** rhubarb, maraschino cherries (if contain Red Dye #3), and fruit cocktail.
- Vegetables, raw and fresh-cooked and frozen without salt. (But not certain beans [pinto, lima, navy, red kidney, cowpeas], soy products, and skins of potatoes).
- Unsalted nuts and unsalted nut butters.
- Moderate amounts of grain/cereal products (see above) and fresh chicken, beef, and other meats (see above).
- Sugar, jelly, honey, maple syrup.
- Black pepper, fresh or dried herbs.
- Oils and salad dressings provided they contain only allowed ingredients. (Some diets say that soybean oil is okay; others say to avoid all soy products.)
- Homemade foods
- Cola, diet cola, lemonade, sodas (except those with Red Dye #3), non-instant coffee and tea, beer, wine, other alcohol. Food prepared from any fresh meats, fresh poultry, fresh or frozen vegetables, and fresh fruits should be fine for this diet, provided that you do not add any of the iodine-containing ingredients listed above to avoid.

Low-Iodine Snacks

- Fresh fruit (not canned)—apples, grapes, bananas, melon, etc. (keep on hand and ready to eat)

- Apple sauce (preferably in a glass jar—check label to be sure no salt)
- Raisins and other dried fruits
- Raw carrot sticks (chopped and ready to eat)
- Unsalted peanut butter (great with apple slices, carrot sticks, crackers and rice cakes).
Unsalted peanut butter tends to be the “natural” type that separates so that the top is swimming in oil, while the bottom is dry. Dump the contents into a bowl and stir until the oil is evenly distributed. (Add non-iodized salt to taste, if desired.) Spoon back into jar and refrigerate. Chilled, the product does not separate, yet it is still easy to spread.
- Unsalted Matzo crackers (in the Kosher aisle)
- Unsalted rice cakes
- Popcorn (homemade, with non-soybean oil and non-iodized salt)
- Unsalted nuts—pecans, walnuts, almonds, etc. (shop for these in the baking supplies aisle, since nuts in the snack foods aisle will be salted)
- Homemade bread or muffins (made with a low-iodine recipe) with honey or jelly (check label to be sure no Red Dye #3)
- Sodas, including colas, 7-Up, and Sprite (bottles are preferable to cans; read labels, as caramel-colored sodas may have Red Dye #3)
- Sorbet (check label to be sure no salt, dairy, or Red Dye #3.)

DISCLAIMER—Do not assume that all items on this list are low iodine in every form or merchandise brand. It is each person’s responsibility to read labels to be sure items meet the requirements of his/her particular version of the low-iodine diet.