
Low-Iodine Diet Guidelines — Summary

ThyCa: Thyroid Cancer Survivors' Association, Inc.SM
For details, and our free downloadable *Low-Iodine Cookbook*, visit www.thyca.org

Key Points

- This is a Low-Iodine Diet, NOT a No-Iodine Diet or an Iodine-Free Diet.
- The diet is for a short time period, usually for the 2 weeks (14 days) before a radioactive iodine scan or treatment.
- Avoid foods high in iodine (over 20 mcg per serving). Eat any foods low in iodine (up to 5 mcg per serving). Limit the quantity of foods moderate in iodine (5 to 20 mcg per serving).
- Read the ingredient lists on labels of packaged foods. Check with your physician about medications you're taking.

Not Allowed—

Avoid These Foods and Ingredients

- Iodized salt, sea salt, and any foods containing iodized salt and sea salt.
- Seafood and sea products (fish, shellfish, seaweed, seaweed tablets, carrageenan, agar-agar, alginate, nori and other sea-based foods or ingredients).
- Dairy products of any kind (milk, cheese, yogurt, butter, ice cream).
- Egg yolks or whole eggs or foods containing whole eggs.
- Bakery products containing iodine/iodate dough conditioners or high-iodine ingredients. Low-iodine homemade and commercial baked goods are fine.
- Red Dye #3. (E127 in the UK)
- Most Chocolate (due to milk content). Cocoa powder and some dark chocolates are allowed.
- Some molasses (if sulfured, such as blackstrap molasses). Unsulfured molasses, which is more common, is okay. Sulfur is a term used on labels and does not relate to iodine.
- Soybeans and soybean products such as tofu, TVP, soy milk, soy sauce. The NIH diet says to avoid some other beans: red kidney beans, lima beans, navy beans, pinto beans, and cowpeas.
- On some diets, rhubarb and potato skins (inside of the potato is fine).
- Iodine-containing vitamins and food supplements.
- If you're taking a medication containing iodine, check with your physician.

Allowed Foods and Ingredients

- Fruits except rhubarb and maraschino cherries (with Red Dye #3 or E127 in the UK).
- Vegetables: preferably raw or frozen without salt, except soybeans and (according to NIH diet) a few other beans.
- Unsalted nuts and unsalted nut butters.
- Whites of eggs.
- Fresh meats up to 6 ounces a day.
- Grain and cereal products up to 4 servings per day, provided they have no high-iodine ingredients.
- Pasta, provided it has no high-iodine ingredients.
- Sugar, jelly, jam, honey, maple syrup.
- Black pepper, fresh or dried herbs and spices.
- Oils. All vegetable oils, including soy oil.
- Sodas (except with Red Dye #3 or E127 in the UK), cola, diet cola, non-instant coffee, non-instant tea, beer, wine, other alcoholic beverages, lemonade, fruit juices.
- Read the ingredient list on all packaged foods.

Easy Snacks for Home, Work, or Travel

- Fresh fruit or juice
- Dried fruits such as raisins
- Fresh raw vegetables
- Applesauce
- Popcorn
- Unsalted nuts
- Sodas other than those with Red Dye #3 (E127 in the UK)
- Fruit juice
- Unsalted peanut butter or other nut butters (great with apple slices, carrot sticks, crackers, and rice cakes)
- Unsalted Matzo crackers and other unsalted crackers
- Homemade low-iodine bread or muffins

- Easy Quick Meals**
- Oatmeal toppings-cinnamon, honey, applesauce, maple syrup and walnuts, fruit
 - Grilled fresh meat, vegetables, fresh fruit or baked apple
 - Salad topped with grilled chicken or beef, oil and vinegar dressing
 - "Sandwich" with Matzo crackers, plain peanut butter, jelly

Our thanks to ThyCa's medical advisors and conference speakers for information and support.

Disclaimer: This information is intended for educational purposes only. It is not intended, nor should it be interpreted, as medical advice or directions of any kind. Any person viewing this information is strongly advised to consult their own medical doctor(s) for all matters involving their health and medical care.

The Low-Iodine Diet

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 of these 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 may then receive treatment with a larger dose of RAI in an attempt to eliminate remaining thyroid cells.

In preparation for an RAI scan or RAI treatment, patients are usually asked to go on a low-iodine diet (LID). The diet is to prepare for the RAI. The patient follows the diet when preparing for RAI either by temporarily stopping levothyroxine (withdrawal) or by receiving injections of Thyrogen (recombinant TSH) while continuing on levothyroxine.

The purpose of a low-iodine diet is to deplete the body of its stores of iodine, to help increase the effectiveness of the radioactive iodine scan or treatment. The premise is that when the radioactive iodine is administered, the thyroid cells will "suck" up the iodine, because the body has been so depleted.

This diet is for a short time period. The usual time period is around two weeks (14 days) 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.

The following is a combination of diet guidelines from several ThyCa medical advisors (who use urine iodine testing to check patients' iodine levels), from researchers' findings presented in medical journals and at ThyCa events, and from input from our 22-member Medical Advisory Council. Your physician may have different guidelines. Please check with your doctor before you start the diet.

General Comments

- **The diet is a low-iodine diet, NOT a low-sodium diet.** Remember: LOW IODINE has NOTHING TO DO WITH SODIUM. Sodium is in most foods. Table salt is sodium chloride, not 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 and NOT an "iodine-free" diet.** A low-iodine diet reduces iodine consumption—on most diets to below 50 micrograms (mcg) of iodine per day (on some diets to below 80-100 mcg per day). The American Thyroid Association recommends that the low-iodine diet include less than 50 mcg of iodine per day. (The Recommended Daily Allowance of iodine is 150 mcg per day for adults. One teaspoon of iodized salt contains 400 mcg of iodine.)
- During your time on the diet, 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. Pages 10 and 11 have lists.** However, avoid foods high in iodine (over 20 mcg per serving). Also, many thyroid cancer specialists' guidelines recommend limiting foods that are moderate in iodine (5 to 20 mcg per serving).
- For recipes and a snack list, use ThyCa's free [Low Iodine Cookbook](#). You can download it free from our web site www.thyca.org and print it out.

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- You also can adapt your favorite recipes from your own cookbooks to the low-iodine diet. To do this, eliminate ingredients that are high in iodine, or substitute ingredients from the list of foods and ingredients that are fine on the diet.
 - If you follow other dietary guidelines due to allergies, diabetes, other medical conditions, or other reasons, you can adapt your recipes and meal plans. Use this cookbook's lists and tips.
 - Thyroid cancer survivors created this cookbook and donated these recipes to help you with this diet. We are proud to share this large collection of recipes, plus our handy snack list.

Avoid These Foods and Ingredients

Avoid the following foods, starting when instructed by your physician before your radioactive iodine test or treatment. Continue as instructed until after your radioactive iodine treatment (often for about 24 hours after). 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 may be used. For example, Kosher salt is okay unless the label says that it is iodized or sea salt. 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. Read the label. (One teaspoon of iodized salt has 400 mcg of iodine.)
- **Seafood and sea products** (fish, shellfish, seaweed, seaweed tablets, kelp). These are all very high in iodine and should be avoided.
- **Foods or products that contain these sea-based additives:** carrageenan, agar-agar, algin, alginate, nori (these food additives are seaweed by-products).
- **Dairy products** (milk, cheese, cream, yogurt, butter, ice cream, powdered dairy creamers, whey, casein, other dairy products). Note: Nondairy creamers often have iodine-containing ingredients, too. A study published in 2004 in the *Journal of Clinical Endocrinology and Metabolism* reported on tests of 18 brands of milk in the Boston, Massachusetts area. It reported that 250 ml of milk (about 8 ounces, or 1 cup, or 16 Tablespoons) contained from 88 to 168 micrograms of iodine and averaged 115 mcg. (This means that one teaspoon of milk has 1 to 3 micrograms of iodine, and one Tablespoon of milk has 3 to 9 micrograms of iodine.) The study also noted that sources of iodine in milk include iodine in cattle feed, the products containing iodine used to clean teats and udders, and a small amount from equipment cleaning products. (All low-iodine diets given to ThyCa say to avoid dairy. Some low-iodine diets allow **very small** amounts of milk or other dairy, if not listed in the first three ingredients on a label. There is no dairy in any of the recipes in this cookbook.)
- **Egg yolks** or whole eggs or foods containing whole eggs. Egg whites are acceptable, because they contain little or no iodine. (Some low-iodine diets allow foods with very small amounts of eggs, if not listed in the first three ingredients on a label. The recipes in this cookbook use only egg whites.)

(This list continues on the next page)

Limit the Amounts of these Foods

Some diets from thyroid cancer specialists and researchers recommend limiting the daily intake of foods that are moderate in iodine—5 to 20 micrograms per serving.

- **Fresh meats.** 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 researchers, who noted that meat contains 25-130 micrograms of iodine per pound.) Whole cuts tend to contain less iodine than do ground meats. **Also, check the package label on meats, including whole turkeys, turkey breasts, turkey cutlets, chicken, and all pork products.** Many food makers inject broths into 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.
- **Grains, cereals.** Up to 4 servings per day of grains, cereals, pasta, and breads without iodine-containing ingredients are fine on this diet. The iodine content depends on the iodine content of the region where the grain was grown. 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.** Like grains, rices vary in the amount of iodine depending on the region where grown, so rice should be eaten only in limited amounts. Some low-iodine diets recommend avoiding rice. Basmati rice has been mentioned as the best for the 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 avoid restaurant foods other than plain juices or soft drinks, or the inside of a plain baked potato. For most restaurant foods, 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 and researchers' presentations allow salty processed foods and other 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 in the USA 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, many patients prefer to eat fresh 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 (or E127 in the UK).

In the past some patients have contacted manufacturers asking whether or not they used iodized salt in their products or iodine-containing cleansers or sanitizers for their equipment and surfaces involved in food processing. 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 may change procedures and may use iodine-based cleaners or sanitizers on food-processing surfaces, utensils, equipment, and containers used in processing steps.
3. Because fewer and fewer manufacturers in the USA have been using iodized salt in their food processing, there seems to be a rise in iodine deficiency. It might become the practice to start using iodized salt again.

Also, some spice blends like chili powder may contain added salt.

Read the ingredient labels on all packaged foods and spices. Some support group participants have compiled lists of brands of processed and packaged foods low in iodine. A list is being reviewed for addition to ThyCa's web site and as an appendix to this cookbook.

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 foods and ingredients are fine to eat. You do not need to limit the quantity, except as noted.

- Fresh fruits and fruit juices, except rhubarb, maraschino cherries (if they contain Red Dye #3 or E127 in the UK), and fruit cocktail with maraschino cherries.
- Vegetables, preferably raw and fresh-cooked or frozen without salt. (But not skins of potatoes, soybeans, and, according to the NIH diet, some other beans like pinto, lima, navy, red kidney, cowpeas).
- Unsalted nuts and unsalted nut butters.
- Grain/cereal products in moderate amounts (see above).
- Fresh chicken, beef, and other meats in moderate amounts (see above).
- Sugar, jelly, honey, maple syrup, and unsulfured molasses.
- Black pepper and fresh or dried herbs.
- All vegetable oils. Salad dressings provided they contain only allowed ingredients.
- Homemade foods (see the free Low-Iodine Cookbook from the ThyCa web site at www.thyca.org)
- Cola, diet cola, lemonade, sodas (except those with Red Dye #3 or E127 in the UK), non-instant coffee and tea, beer, wine, other alcohol.

Food prepared from 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.

Low-Iodine Snacks

- Fresh fruit—apples, grapes, bananas, melon, etc. Keep on hand and ready to eat.
- Apple sauce. 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-iodized salt).
- Unsalted nuts—pecans, walnuts, almonds, etc. (Shop for these in the baking supplies aisle, since nuts in the snack foods aisle will probably 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 or E127 in the UK).
- Sodas, including colas, 7-Up, and Sprite (read labels, as caramel-colored sodas may have Red Dye #3 or E127 in the UK).
- Sorbet (check label to be sure no salt, dairy, or Red Dye #3 or E127 in the UK).

DISCLAIMER—Do not assume that all items on this list are low iodine in every form or merchandise brand. Read labels to be sure that the items meet the requirements of your version of the low-iodine diet.

[Snack list contributed by Nina Geiger]

What if it's not on the "okay" list on this page, or in earlier pages in this book?

- There are minor variations in low-iodine diet guidelines provided by different thyroid cancer specialist physicians.
- These guidelines combine the recommendations of several thyroid cancer specialists whose patients have successfully used their guidelines.
- Some guidelines say just to avoid certain items or certain food categories, and do not give details within categories.
- Other diets list foods and ingredients that are allowed, without limits on quantities consumed.
- Many of our web site visitors and correspondents request details as given here, so that they can plan their menus with their own preferences in mind.
- If your health care professional has recommended that you follow a low-iodine diet, please discuss your diet guidelines with him or her.

More Low-Iodine Diet Tips

- **Vitamin/mineral supplements** often contain large amounts of iodine, so check the labels. Consider taking a calcium supplement, since the diet disallows dairy products. Avoid brands deriving calcium from oyster shell, which may contain iodine.
- **Iodine enters the body via products other than food.** Many contrast agents used in radiology testing—particularly CT scans, and possibly other scans—contain iodine. (If you are unsure if you had any such tests in the past several months, have your doctor review your files.)
- **Iodine is used as a topical antiseptic**, such as that commonly swabbed on the skin before surgery (including thyroid surgery). Avoid Betadine^(R) soaps and shampoos.
- **Check toiletry labels for Red Dye #3 or E127 in the UK**, which is also used in pills and other medications such as cough syrups. Check with your doctor if you are unsure whether any of your current medications contain Red Dye #3 or E127 in the UK or if you discover Red Dye #3 or E127 in the UK in a current medication and wonder whether to suspend taking it while on the diet.
- People on the diet often seek allowed **substitutes** for basic items. As for butter, remember that margarine also contains dairy. Most margarine substitutes contain salt or another disallowed ingredient. However, some margarines of a brand called Mother's, made in Newark, NJ, and available in parts of the USA, seem to be allowed. Read the label carefully.
- No milk substitute is allowed, because most are soy-based, and the rice-based one has sea salt. **The cookbook has a recipe for a milk substitute called "Nutty Milk."**
- **If you consume alcohol when hypothyroid**, remember that your body's metabolism is slowed down and that you may react differently than you usually do. Therefore, many people prefer to consume smaller amounts of alcohol.
- **Remember to use unsalted nuts** for any recipes that call for nuts. For any recipe that contains salt as an ingredient, use non-iodized salt and salt that is not from the sea.
- **Breadcrumbs** are easy to make in a food processor. For flavored crumbs, add parsley, oregano, and garlic powder. Your local bakery should also have fresh breadcrumbs.
- **Instead of whole eggs, use whites only, doubling the number or adding water.** Instead of commercial salad dressing, make a simple vinaigrette with equal amounts of vinegar and oil, spicing it to taste with herbs, pepper and non-iodized salt; keep refrigerated.
- **Be sure to have on hand several allowed snacks/finger foods.** When really tired or too unsettled to face a full meal, a small plate of snack foods (such as peanut butter crackers and apple sauce, or toasted bread with honey, a banana and a few nuts) is better than eating nothing or breaking down and eating disallowed foods.

A Final Note

- The key to coping well with this diet is being prepared ahead of time, especially if you are preparing for RAI by stopping your levothyroxine pills and becoming hypothyroid.
- Before you start becoming hypothyroid, prepare the basics and freeze. You do not want to be making chicken stock while you are hypothyroid.
- Remember also the handy snack list. We suggest that you stock up on snack items from the list for times when you do not feel like cooking.
- We encourage you to use our free Low-Iodine Cookbook for variety and enjoyment of low-iodine meals and snacks. Thousands of other thyroid cancer survivors have used and enjoyed our recipe collections.