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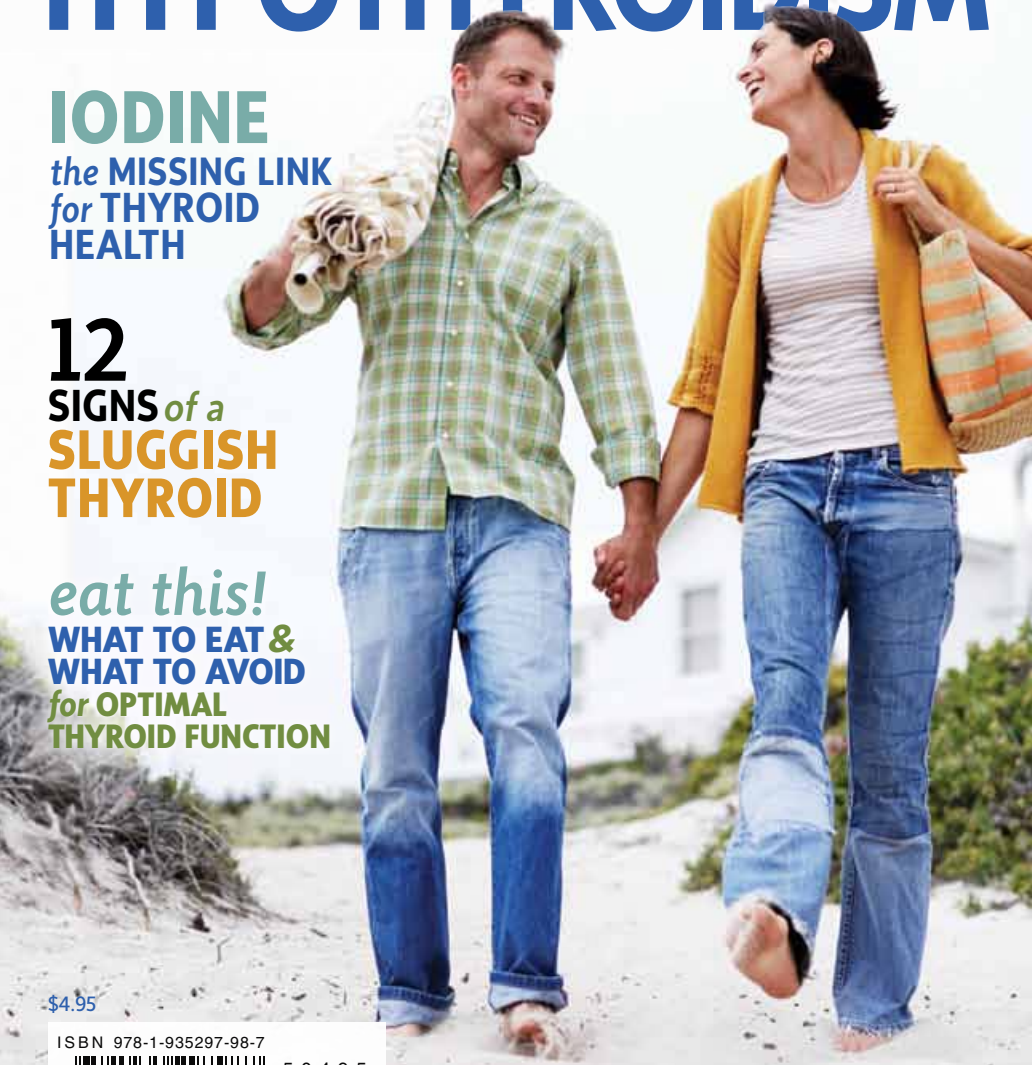

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Business & Editorial Offices
300 N. Continental Blvd., Suite 650
El Segundo, CA 90245

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OVERCOMING HYPOTHYROIDISM

Gaetano Morello, ND, is a board-certified naturopathic doctor practicing at the Complement Health Centre in West Vancouver, BC, and a leading authority on the topic of natural medicine.

Have you been feeling a little "off" lately? Waning energy, mood swings, dry skin, and unexplained weight gain could be a sign of an underactive thyroid. It's an increasingly common problem. In fact, the American Association of Clinical Endocrinologists estimates that thyroid disorders affect approximately 27 million adults in the United States. Of those, it's likely that half haven't been diagnosed. That's not surprising since an underactive thyroid—clinically called hypothyroidism—can mimic a number of other health problems.

Since the thyroid is responsible for regulating numerous functions in the body, including maintaining a healthy body temperature and metabolism, it makes sense that the underproduction of thyroid hormones would lead to a host of symptoms ranging from weight gain and fatigue to high cholesterol levels and even infertility. But, since the symptoms can be so diverse, hypothyroidism is often misdiagnosed. If you suspect you've got an underactive thyroid, it's important to talk with your health care provider. Even a slightly sluggish thyroid can cause big problems.

Fortunately, there are a number of natural ways to restore thyroid function and alleviate many of the symptoms of hypothyroidism. From supplements to diet to exercise, applying the strategies in the following pages can restore thyroid function and help you take your life back.

Gaetano Morello, ND

betternutrition healthy living guide

Chapter One

The Master Gland

You're irritable, tired, and can't seem to remember even simple things. Maybe you've packed on an extra 10 pounds even though you're eating less and exercising more. Or maybe you're just cold—all the time! If these symptoms sound familiar, you may very well be suffering from hypothyroidism.

Often called the "master" of the entire endocrine system, your thyroid is a small gland shaped like the outspread wings of a butterfly that sits at the base of the throat. It excretes two critical hormones—thyroxine, known as T4, and triiodothyronine, known as T3. These two hormones increase basal metabolism—the amount of energy required to keep your body functioning at rest. Creating thyroid hormones that regulate metabolism is a multi-step process. First, the pituitary gland produces thyroid-stimulating hormone which, in turn, produces T4 and T3. Although the thyroid gland makes considerably more T4 (80 percent) than T3 (20 percent), T3 is 300 percent more active than T4. Under normal circumstances, T4 is converted into the more active T3 inside the cells of the body. Some T4 is also converted to reverse T3 (RT3), which tones down excess energy. Think of it like the pedals of your car—T3 is the gas and RT3 is the brake.

Factors that can interfere with thyroid hormone conversion include chronic stress, hormonal and digestive imbalances, nutritional deficiencies, and exposure to environmental toxins like mercury. A diet high in refined carbohydrates or excessive amounts of processed foods containing soy or gluten can also undermine the conversion process, leaving you with less T3 than you need for proper thyroid function.

The problem is that this conversion process can be challenged by a variety of factors, including an iodine deficiency, chronic stress, digestive problems, exposure to environmental toxins, or even pregnancy. Chronic infections or inflammation can also play a role in thyroid under-conversion by damaging cell membranes that are critical for the T4 to T3 conversion. Long-term thyroid problems can also be due to an autoimmune condition known as Hashimoto's thyroiditis, in which antibodies attack the thyroid and render it inactive. If you've been diagnosed with Hashimoto's, your doctor may prescribe T4 hormone replacement. Yet, because T4 is simply a precursor to the active thyroid hormone T3, this strategy may not work if you have trouble converting T4 to T3.

You might have a sluggish thyroid if . . .

- you're often fatigued, even after a good night's sleep.
- you're gaining weight for no apparent reason.
- you're cold, even when everyone else is comfortable.
- you have a hard time concentrating.
- you're frequently constipated.
- you have muscle aches, tenderness, and stiffness.
- your hair is brittle and dry.
- your skin is dry and waxy.
- your voice is deep and hoarse.
- your pulse is slow.
- your sex drive has disappeared.
- you have potency or fertility problems.

Hypothyroidism seldom causes symptoms in the early stages. Left untreated, however, the signs and symptoms of hypothyroidism can gradually become severe and may lead to other health problems such as obesity, joint pain, infertility, and heart disease.

Misdiagnosed and Misunderstood

Typically, doctors test thyroid function during your yearly physical. The problem is, most rely on a single blood test that measures thyroid-stimulating hormone (TSH). Since TSH rises as thyroid function declines, levels over 5.0 mU/L are considered an indication of hypothyroidism. Yet many people with TSH values between 3.04 and 5.0 mU/L—values considered normal under current guidelines—have symptoms that indicate a sluggish thyroid. This means that many symptomatic people with subclinical hypothyroidism go undiagnosed and untreated.

Since standard TSH testing is not an exact science, it's a good idea to ask for further testing if you think your thyroid is underperforming. Looking beyond a simple TSH test can give you and your health care provider a more accurate picture of how well your thyroid is functioning. A much better approach is to look at the symptoms you are experiencing, your family and personal history, and the results of additional thyroid tests, including testing for T4, free T4, and antibody tests like anti-TPO and TgAb which can give a better assessment of T3 and T4 production. Because iodine is essential for the production of thyroid hormones, some alternative practitioners may also use iodine patch testing to check for a deficiency.

Although it may be challenging to get an accurate diagnosis, the good news is that if you do have an underactive thyroid, a thyroid-friendly diet, lifestyle modifications, and natural alternatives to synthetic thyroid replacement therapy can often restore thyroid function and relieve symptoms.

DIY THYROID TESTING

While no substitute for a battery of in-depth lab testing, tracking your basal temperature for several days in a row is one easy test that you can perform at home. Basal body temperature (BBT) is your body's temperature when you're fully at rest. According to many holistic practitioners, the findings may contribute to an accurate diagnosis.

To measure your BBT, take your temperature before getting out of bed in the morning using an old-fashioned mercury thermometer. Set an alarm to ensure you take your temperature at the same time every day and keep the thermometer at your bedside. Don't stand up, walk around, eat anything, drink anything, or engage in any kind of activity until after you've taken your BBT. As soon as you wake up, place the thermometer under your armpit (not under your tongue) for a full 10 minutes. Write down your results each day. Normal basal body temperature for most healthy adults ranges from 97.8 to 98.2° F. If your average BBT is consistently lower than 97.7° F, you may have an underactive thyroid.

If you're a woman of childbearing age, don't try this test if you are ovulating or during your period as the results will not be accurate. It's best to conduct a BBT test either shortly after your period ends or shortly after ovulation.

Chapter Two

The Iodine Connection

While there are a number of nutrients that support healthy thyroid function, the most critical is iodine. This trace mineral is required by the body for the creation of the thyroid hormones T4 and T3. T4 contains 4 iodine atoms. When one of these iodine atoms is stripped off, it becomes T3, with 3 iodine atoms remaining.

The synthesis of thyroid hormones is tightly controlled. When the amount of thyroid hormone in your blood drops, the pituitary gland secretes TSH. This then stimulates the thyroid gland to increase its uptake of iodine from the blood so that more T4 can be synthesized. When necessary, T4 is then converted to the metabolically active T3.

Under normal circumstances, your body contains approximately 20 to 30 mg of iodine, most of which is stored in your thyroid. Smaller amounts of iodine are also found in the breasts, the lining of the stomach, the salivary glands, and the blood. When there isn't enough iodine in the body, your thyroid can't make sufficient amounts of T4 and T3 to prevent dysfunction. In cases of extreme deficiency, it's not unusual for a goiter to develop. A goiter is an enlargement of the thyroid gland that causes swelling of the neck. A much more common scenario, however, is hypothyroidism. Fortunately, increasing your iodine level will allow your thyroid function and metabolic rate to return to normal.

Who Knew?

Most commonly known for its role in thyroid health, iodine is essential for the health of many other areas of the body, including breast, uterine, prostate, and ovarian tissues.

The Iodine Crisis

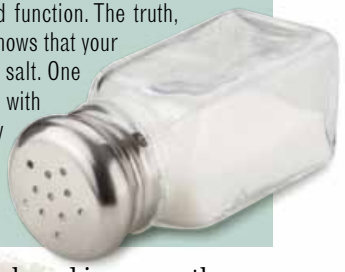
Iodine deficiency is currently on the rise in the U.S. The National Health and Nutrition Examination Survey from 1971-74 found that just 2.6 percent of Americans were iodine deficient. But a follow-up survey found that number jumped to 11.7 percent between 1988 and 1994. This means that, over the past 40 years, the percentage of Americans with low iodine intake has more than quadrupled.

Of particular concern, the number of iodine-deficient pregnant women has increased from one percent to seven percent over the past four decades. Why does it matter? During pregnancy, T4 production doubles causing increases in daily iodine requirements. Iodine-deficient pregnant women cannot produce the thyroid hormones needed for the proper neurological development of their growing babies. This puts infants at risk of cognitive impairment and learning delay. Even moderate iodine deficiency in a pregnant woman can lower her infant's IQ between 8 and 16 points.

This uptick in the rate of iodine deficiency can, in part, be traced to common environmental pollutants known as halides. Halides include the chlorine and fluoride so prevalent in our drinking water, and bromine—a chemical used as a dough conditioner in commercial bread. Halides displace iodine by blocking the

Iodized Salt: Shaking Out the Truth

Iodized salt is frequently touted as the solution to sub-optimal thyroid function. The truth, however, isn't quite so convincing. Research in *The Original Internist* shows that your body can only absorb about 10 percent of the iodine found in iodized salt. One reason for this is iodized salt's chloride content. Chloride competes with iodide for absorption in the intestinal tract. Research from the University of Texas at Arlington also demonstrates that exposure to air, heat, and moisture during storage can degrade the iodine in salt. This means that the salt in your salt shaker likely doesn't live up to its claims.



body's iodine receptors. This effectively lowers iodine levels and increases the risk of thyroid dysfunction.

People who avoid iodized salt or adhere to a salt-restricted diet may also become iodine deficient. Vegetarians and vegans are also at risk of developing iodine deficiency, especially if they eat food grown in low-iodine soil. The good news is that you can easily reverse a deficiency with a high-quality supplement that contains molecular iodine, sodium iodide, and potassium iodide. This trio of iodines benefits not only the thyroid but also breast tissue.

How much do you need? It's been shown that women in Japan consume upwards of 12.5 mg of iodine per day with no harmful effects and a host of benefits for both thyroid and breast health. Indeed, many holistic health care providers in the U.S. commonly recommend 12.5 mg per day—taken with food—to their patients with hypothyroidism. Be aware, however, that the amount of supplemental iodine needed for an individual varies widely based on his or her current health status and thyroid test results. Before taking high doses of iodine, it's wise to consult with a health care provider familiar with iodine's benefits.

Too Much of a Good Thing?

Most mainstream medical experts maintain that an iodine deficiency is uncommon in the United States and Canada—and it's true. An extreme deficiency that can trigger a goiter is very rare. But that doesn't mean you are getting enough iodine to support optimal thyroid function. Many people—even in industrialized countries where some foods are fortified with iodine—have moderate iodine deficiencies that can lead to hypothyroidism and other health problems.

The current RDA for iodine is 150 mcg. But that's only enough to prevent goiter and cretinism (severely stunted physical and mental growth). The recommended amount of iodine is woefully inadequate to prevent many other thyroid disorders, including hypothyroidism. Yet, most clinicians are hesitant to suggest taking supplemental iodine. This misplaced angst is based on a single 2006 study reporting a positive link between the rise in added iodine in China's salt and an uptick in the incidence of Hashimoto's disease. But most doctors aren't aware that these same authors retracted their original conclusions a year later, stating that "Chronic iodine excess does not apparently increase the risk of autoimmune thyroiditis (Hashimoto's)." Indeed, many alternative practitioners have found great success in treating all types of hypothyroidism—including Hashimoto's disease—with supplemental iodine.

Chapter Three

Supporting Nutrients

Iodine may be the foundation to ensure proper thyroid function, but other supplements can offer additional support for those with hypothyroidism. Among the most important is a good-quality multivitamin that provides the basic vitamins as well as antioxidants, iron, and a full range of essential minerals. Because many people with hypothyroidism are deficient in vitamin D, it's smart to add a separate supplement that provides a dose well above the recommended Daily Value. Since an imbalance in beneficial gut bacteria can also contribute to hypothyroidism, including a multi-species probiotic to your basic supplement regime will help support intestinal health. Finally, a high-quality omega-3 supplement can enhance overall health, specifically brain and cardiovascular health.

If you've been diagnosed with hypothyroidism or Hashimoto's disease, more targeted supplementation may be in order. The following supplements specifically target the thyroid and may help improve thyroid function:

Ashwagandha is an adaptogenic herb popular in Ayurvedic medicine that has been shown to help lower the stress hormone cortisol and balance thyroid hormones. In one preliminary study that appeared in the *Journal of Pharmacy and Pharmacology,* ashwagandha increased T3 and T4 levels within just 20 days.

B complex is a family of vitamins that provide overall support to the thyroid gland. However, as we age, our ability to absorb the B vitamins diminishes. What's more, because B vitamins are water-soluble, they aren't stored in the body. Taking a daily supplement that contains 100 mg each of the most important Bs—thiamin (B1), riboflavin (B2), pantothenic acid (B5), and pyridoxine (B6), and 100 mcg of methylcobalamin (B12)—can help to make sure you're getting the Bs you need. To aid in absorption, they should be taken two or three times daily for maximum effectiveness.

Great Glands!

Glandular extracts come from the hormone-producing glands of animals, typically cows, sheep, and pigs. These freeze-dried supplements won't replace thyroid hormones the way prescription thyroid drugs do. Instead, they supply therapeutic amounts of active peptides to effectively improve thyroid function. Recent findings from Walter Reed National Military Medical Center suggest that taking a desiccated thyroid extract may aid in weight loss. What's more, its study of 70 patients with primary hypothyroidism found that nearly half preferred taking a glandular extract compared to conventional levothyroxine therapy.

Guggul is a resin gum derived from the *Commiphora mukul* tree in India which has long been used as a remedy for high cholesterol. But, because guggul also stimulates T3 thyroid hormone synthesis, it can help enhance thyroid function. Some Ayurvedic practitioners also claim that this ancient compound may help detoxify the thyroid by stimulating lymph drainage.

L-Tyrosine is an amino acid essential for optimal thyroid function. Since the thyroid gland combines tyrosine and iodine to make thyroid hormone, not having enough tyrosine limits the amount of T4 and T3 the body can make. Supplementing with tyrosine, however, can kick-start a listless thyroid. Because tyrosine works with iodine, it may be helpful to take supplemental iodine as well. Just be aware that if you are currently taking a thyroid medication such as levothroid, unithroid, synthroid, or levoxyl, check with your doctor since taking a tyrosine supplement can interfere with their action.

Magnesium is necessary for the proper absorption of iodine. Yet deficiencies are common, especially in well-developed countries where processed foods are prevalent. Seven out of every 10 Americans are likely to have a magnesium deficiency. Unfortunately, magnesium deficiencies are one of the hardest things to test for. The current testing methods are unpredictable, and even a reading that is in the normal ranges may be inaccurate. This is why it's prudent to take at least 400 mg of supplemental magnesium each day.

Manganese is essential for the proper metabolism of thyroid hormones, but only small amounts are needed. In addition to being vital for healthy thyroid function, manganese is also important for proper enzyme function, the breakdown of fats and cholesterol, carbohydrate metabolism, skin repair, bone formation, and more.

Rhodiola is an adaptogen often used to treat chronic stress. Because stress can influence thyroid function, it may help some people to take supplemental rhodiola. Studies show that this adaptogenic herb supports the adrenal glands and can improve the body's response to stress. A recent study in the *Journal of Medicinal Food* also reported that rhodiola can clinically enhance thyroid function in those with an underactive thyroid without causing *hyper*thyroidism.

Selenium is required for the conversion of T4 to T3. Specifically, it's a necessary component of the enzymes that remove iodine molecules from T4, converting it into T3. Without selenium there would be no activation of thyroid hormone. When patients suffering from various forms of thyroid disease were tested for selenium levels, all were found to be lower than those of healthy people. Selenium also plays a role in safeguarding the thyroid gland itself. The cells of the thyroid generate hydrogen peroxide and use it to make thyroid hormone. Selenium protects the thyroid gland from the oxidative damage caused by these reactions. Without adequate selenium, high iodine levels may lead to destruction of the thyroid gland cells.

Zinc may be helpful for people with low T3 levels. In animal studies, zinc deficiency lowered T3 and free T4 concentrations by approximately 30 percent. In a group of patients with low levels of free T3 and normal T4, but elevated rT3 and a mild-to-moderate zinc deficiency, taking zinc supplements for 12 months, raised serum free T3 and total T3 levels, decreased rT3, and normalized TSH levels. Very high doses of zinc interfere with copper absorption and can lead to a potentially dangerous deficiency. This is why most practitioners advise taking a small amount of copper along with your supplemental zinc.

Chapter Four

Healthy Thyroid Habits

An accurate diagnosis and proper supplementation are the first steps toward restoring your thyroid function. But making healthy lifestyle changes can go a very long way in helping you reclaim your vitality.

What you eat can make a big impact if you have an underactive thyroid. It's wise to avoid stimulants and chemical food additives. Some of the more obvious include caffeine, sugar, and preservatives. Caffeine and sugar tax the adrenal glands, causing imbalances throughout the body. Preservatives and artificial sweeteners like aspartame can cause further stress to the thyroid, as well as the brain, so it's important to eliminate or greatly reduce your intake.

Surprisingly, some otherwise healthy foods can depress thyroid activity. Known as goitrogens (goiter-causing substances), these foods include cruciferous vegetables, soy, and many green leafy vegetables. Instead, focus on foods high in thyroid-friendly vitamins and minerals such as beans, nuts, and seafood. And make sure to add plenty of anti-inflammatory fruits and vegetables to your diet, opting for organic whenever possible.

You can also increase your iodine intake with the right foods. This essential trace mineral is found

The Gluten Glitch

Since gluten can interfere with the absorption of T4, it's smart to avoid breads, baked goods, cereal, pasta, and other recognizable sources of gluten. Other less obvious sources can include soy sauce, salad dressing, canned soups, and even ice cream! Always check ingredient labels for wheat, barley, and rye—all of which contain gluten.

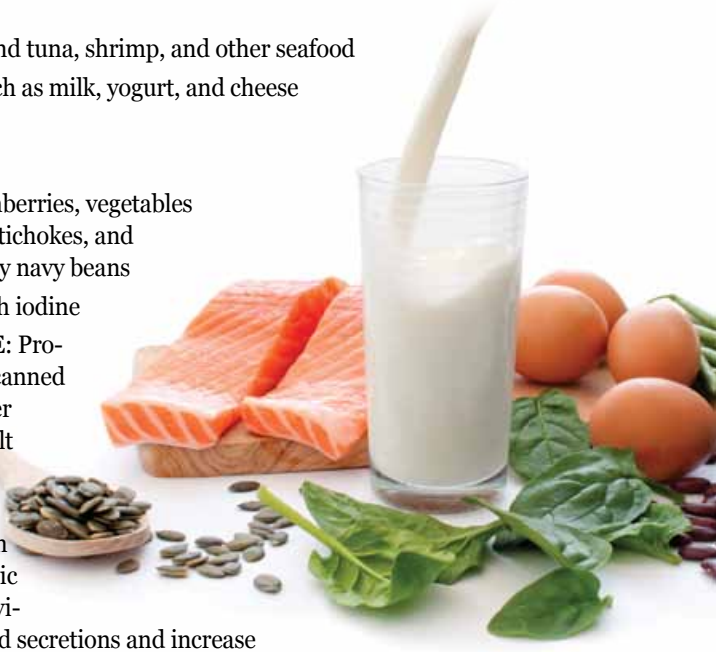
Avoid These Foods

The following goitrogenic foods can interfere with the proper functioning of the thyroid gland:

- Broccoli
- Cabbage
- Brussels Sprouts
- Spinach
- Soybeans
- Peanuts
- Mustard Greens
- Cauliflower

naturally in some foods and is added to others. Making sure you include the following iodine-rich foods in your daily diet can boost your consumption and help to keep your thyroid in top form:

- Fish such as cod and tuna, shrimp, and other seafood
- Dairy products such as milk, yogurt, and cheese
- Egg yolks
- Nuts and seeds
- Fruits such as cranberries, vegetables like onions and artichokes, and legumes, especially navy beans
- Bread fortified with iodine
- Iodized salt. NOTE: Processed foods like canned soups almost never contain iodized salt



It's also important to get moving. Adopting a regular exercise program that includes both aerobic and weight-bearing activities can stimulate thyroid secretions and increase tissue sensitivity. It may also help you manage weight gain resulting from thyroid dysfunction. Plus, exercise boosts heart health—an important consideration since hypothyroidism increases the risk of cardiovascular disease. If that weren't enough reason to hit the gym, regularly walking, biking, swimming, or lifting weights may also help to counter fatigue.

Minimizing stress is also advisable whenever possible since it can compromise digestion and create nutrient deficiencies that can lead to lower thyroid function. While exercise can help you de-stress, taking additional steps to create calm is important. Try taking hot baths, walking in nature, getting a massage, meditating, or trying a gentle yoga or tai chi class.

YOUR ACTION PLAN FOR OPTIMAL THYROID FUNCTION

DIET

- **Enjoy fatty fish like salmon** two to three times per week for a boost of dietary omega-3s, vitamin D, and iodine.
- **Snack on** a handful of selenium-rich Brazil nuts.
- **Swap your vegetable oil for rice bran oil**, which is high in gamma oryzanol—a compound shown to boost thyroid hormone production.
- **Add a water filter to your faucet.** Chlorine and fluoride can interfere with your thyroid's ability to absorb iodine.

HEALTHY HABITS

- **If you're new to exercise,** start slowly with a 10-minute walk three days a week. Gradually increase to at least 30 minutes five days a week.
- **Take a 15-minute "time-out"** at least once a day to reduce adrenal stress that can tax your thyroid.
- **Make sure to log at least seven hours** of sleep a night to keep stress hormones in check.

SUPPLEMENTS

- **Stimulate a listless thyroid** and enhance overall cellular heath with a combination of several types of safe and bioavailable iodine. We like **Tri-Iodine** by **Terry Naturally**, a synergistic blend of potassium iodide, sodium iodide, and molecular iodine.

- **For those needing even more thyroid support**, try **Thyroid Care** by **Terry Naturally**, which combines Tri-Iodine with L-tyrosine for the optimal production of thyroid hormones.
- **Boost iodine absorption** and give your thyroid the nutritional support it needs with a comprehensive thyroid supplement like **Iodine Co-Factors** by **Terry Naturally**.

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Maximize Iodine Activity

Not everyone's body utilizes iodine the same way. Ensure maximum iodine benefits with synergistic cofactors:

- Manganese
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- Selenium
- Niacin
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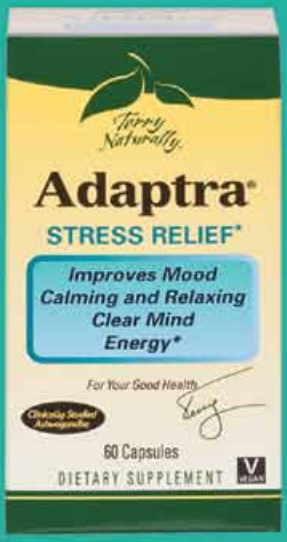

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