How To Handle Hypothyroidism: Suspect, Detect, Defeat?

We've all experienced changes in our bodies from time to time that seem more of a nuisance than a medical issue. Take, for example, forgetfulness or fatigue, difficulty falling asleep or staying asleep, perhaps even muscle or joint pain.

Too often we chalk these symptoms up to the stresses of modern life or (yikes!) simply getting older. And that may seem to be reasonable.....that is, until these changes become pervasive, persistent and bring day-to-day life as you know it to a grinding halt.

This is hypothyroidism, an often-hidden health problem in which the master gland of metabolism—the thyroid—produces less hormone than the body needs, impacting virtually all organ systems in the body. It is one of the most misunderstood, misdiagnosed and prevalent medical conditions in the U.S.: studies estimate that more than 10 million Americans suffer from the disease. Yet hypothyroidism frequently goes undiagnosed.

The American Association of Clinical Endocrinologists (AACE) and the American College of Endocrinology (ACE) hope to enlighten those who are unaware they might be suffering from an underactive thyroid with the 2016 public awareness campaign: "HYPOTHYROIDISM: Suspect. Detect. Defeat." Throughout the year, the organizations will be sharing helpful information on websites (thyroidawareness.com, empoweryourhealth.org), in ACE's quarterly patient education magazine EmPower®, and in media appearances and social media. Meanwhile, here are the fundamentals regarding what you need to know about the symptoms of hypothyroidism, how the disease is diagnosed and treatment options.

Suspect

For a condition that affects so many and whose impact can be devastating, it might seem odd that there seems to be a lack of knowledge about hypothyroidism (and thyroid disease in general). But there are several reasons for this.

The early effects of hypothyroidism are often mild, appear gradually and aren't concentrated in a single area of the body, so it's easy to disregard them or attribute them to other causes. Also, two people with the disease may have entirely different symptoms, and one person's can develop quickly, while the other person's symptoms may take years to emerge. Some people with hypothyroidism have no symptoms at all. And as we age, diminished or faulty hormone production is common, so it's understandable that older patients in particular often go undiagnosed. Plus, the body has the ability to compensate somewhat over the short term by increasing the stimulation to the thyroid to produce more hormone.

However, as production of thyroid hormone decreases and the body slows down, the disease progresses and classic symptoms of the condition begin to appear. They may include any of the following:

- **Constant fatigue**
  Low thyroid function results in less energy.

- **Depression**
  Fatigue is often accompanied by depression. Body functions slow down, including the brain. Routine mental tasks become more difficult. Appetite may decrease and you may sleep more.

- **Weight gain and fluid retention**
  An underactive thyroid slows down all your body processes (your metabolism). With lower energy needs, you require fewer calories, so your appetite can decline, but your body converts fewer calories into energy, leading to weight gain. Fluid retention occurs due to decreased excretion of sodium and water by the kidneys.

- **Dry, brittle hair and nails**
  Nails and hair are composed of very active cells that are highly sensitive to the metabolic slowdown seen in hypothyroidism.

- **Dry, itchy skin**
  Skin issues are among the most common symptoms of hypothyroidism. When your body slows down it produces less heat and you sweat less, leading to dry skin.

- **Muscle or joint pain or stiffness**
  Many people with hypothyroidism experience aches and pains that resemble arthritis.

- **Constipation**
  The muscles of the digestive tract contract to move its contents through the bowel. Hypothyroidism slows down these contractions.

- **Sensitivity to cold**
  This is due to the body conserving heat energy by constricting the blood vessels to the skin, minimizing heat loss.

- **Menstrual cycle changes**
  Hypothyroidism causes an imbalance of female hormones, leading to excessive and irregular menstrual bleeding.

- **Slow pulse**
  Low levels of thyroid hormone commonly cause the heart to beat more slowly than normal, a condition called bradycardia.

- **High cholesterol**
  Low levels of thyroid hormone cause the liver to make fewer LDL receptors, which pull LDL (bad) cholesterol out of the blood.

- **Increased sensitivity to medication**
  A slower metabolism alters the way in which the body processes medication or clears it from the system, causing medications to be more potent or have more side effects.

Although symptoms can vary dramatically from person to person, and not every symptom means that you have an underactive thyroid, if you have been suffering from health issues and your physician has yet to determine what the underlying cause is, ask to have your thyroid function checked.

Before you can fully understand what doctors are looking for when they suspect hypothyroidism, it is helpful to know some details regarding how the complex interactions and connections between the thyroid and the body's other endocrine systems work together to keep your body in balance.

The thyroid gland weighs less than 1 ounce and is located at the front of your throat below the voice box (larynx). Shaped like a butterfly, the thyroid has two lobes connected by a middle section of tissue called the isthmus. The thyroid extracts iodine that has been passed into the bloodstream from food that we eat and uses it to make two kinds of hormone: T4, or thyroxine, which is relatively inactive, and T3, or triiodothyronine, the more active thyroid hormone. As thyroid hormone is produced, it is stored in microscopic follicles in the thyroid gland. When your body needs the hormone, the thyroid releases a small amount of T3 into the bloodstream along with T4, which is converted to "active" T3. The T3 travels through the blood to the liver and other organs in quantities needed to meet your cells' metabolic needs.

The thyroid itself gets its direction from the pituitary gland, a pea-sized structure located at the base of the brain which releases thyroid stimulating hormone (TSH) that tells the thyroid how much hormone to make. When the thyroid does not produce enough hormone, the pituitary gland produces more TSH in order to stimulate it. Hence, an elevated TSH level indicates hypothyroidism.

Detect

When visiting a doctor to be assessed for possible thyroid problems, you will be asked to provide a medical history, highlight any troubling symptoms you are experiencing. The physician will also perform a physical exam to look for signs of the disease. He/she will assess the size of your thyroid gland and look for enlargement by manually feeling around your neck area. He/she will also check for any signs of hypothyroidism, such as dry skin, a puffy appearance and coarse or thinning hair.

If your doctor suspects thyroid dysfunction, diagnostic tests will be ordered, beginning with blood work. Only blood tests can confirm if you are hypothyroid, and a test that measures TSH levels in your blood is the single best indicator. Thyroid hormone levels may be checked to determine the severity of disease as well as antibodies against the thyroid to determine its cause.

If you are found to have a TSH level that does not fall within an established "reference range," your doctor may recommend treatment. And if a primary care physician diagnoses your thyroid disorder, you may be referred to an endocrinologist, a medical doctor whose specialty is the body's glandular, or endocrine, system.

Defeat

The goal of hypothyroidism treatment is to replicate normal thyroid function and return your body to a balanced state. Standard treatment consists of daily intake of a synthetic thyroid hormone, levothyroxine sodium, which comes in pill form and works in the same way your own thyroid hormone would normally work. The initial dose is carefully selected by the physician based on your age, weight, gender, other medical conditions and the severity of your hypothyroidism. You should consult with your endocrinologist about other medications you are taking, such as iron, calcium supplements, antacids and cholesterol-lowering medications, since they can interfere with the effectiveness of thyroid medicines.

Because each person's thyroid hormone needs are very precise, finding the proper dose of levothyroxine can take some time, and adjustments in medication dosage are typical until the patient's TSH level is within normal range. Keep in mind that the medication is slow-acting, so you are unlikely to feel its full effects immediately.

Once the thyroid hormone dosage that is right for you has been determined, you should stick to the same dosage of the same medication, whether brand name or generic manufacturer, and take it at the same time each day.

Once you and your doctor agree on the brand and thyroid hormone dosage that is right for you, you should not switch the brand of hormone replacement medication you are taking. While each brand is FDA-approved and all have the same active ingredient, inactive ingredients vary from brand to brand and can have a significant impact on how much T4 your body absorbs. However, sticking with the same generic formulations may be difficult. Pharmacies often dispense different generic drugs based on what is in stock, the cost of the medicines and the formulation's availability. If your insurance plan only covers generic drugs, make sure your pharmacist provides the same pills from the same manufacturer every time.

Patients should experience relief from some symptoms within a few weeks, while some changes such as dry skin may not improve until several months after starting treatment. Once your TSH levels are stabilized, they'll typically be checked every six to 12 months and the dosage adjusted if necessary.

Before synthetic thyroid hormone tablets were developed, people with thyroid conditions were treated with extracts from sheep thyroid glands that were dried, powdered and placed in pill form. Known as dessicated thyroid hormone, this formulation is made today primarily from pig thyroid glands and is available online and in some pharmacies.

While proponents of dessicated thyroid promote its natural qualities, including that it contains other substances made by the thyroid gland, it has its challenges. Because dessicated thyroid contains relatively large amounts of T3, it can lead to toxicity or hyperthyroisism. Since most cases of hypothyroidism in adults are permanent and often progressive, many patients need to take thyroid medication throughout their lives. The good news is that the medication is relatively inexpensive, has minimal side effects and can restore a hypothyroid patient to optimal health.

For more information about hypothyroidism and other thyroid disorders,
visit www.thyroidawareness.com.

Hypothyroidism Glossary

As with any health issue, the period following a diagnosis of hypothyroidism can be understandably overwhelming—the body (and often the brain) is not functioning properly. A number of tests may be run to determine the cause of the disorder, and the patient begins the process of working towards a "new normal."

During the process, you'll likely hear a number of thyroid-related medical terms and abbreviations that can be confusing but are extremely important for you to become familiar with. Here's a helpful glossary.

- **Antithyroid Antibodies** - Antibodies that are directed against the thyroid gland and associated with inflammation of the thyroid. Testing for antithyroid antibodies in the blood is useful in the diagnosis of chronic thyroiditis (see below), also known as Hashimoto's thyroiditis, the most common cause of hypothyroidism in the United States.
- **FT3** - Free Triiodothryonine (trahy-ahy-oh-doh-thahy-ruh-neen) Test, A free T3 or total T3 (TT3 - see below) test may be ordered when hyperthyroidism is suspected and TSH levels are very low.

- **FT4** - Free Thyroxine (thahy-rok-seen) Test, Free thyroxine (T4) can be measured directly (FT4) or calculated as the free thyroxine index (FTI--see TT4).
- **TFTs** - Thyroid Function Tests
- **TG** - Thyroglobulin (thi-ro-glob-ye-lin), Thyroglobulin is a protein produced by the cells of thyroid and is used within the thyroid to store T3 and T4. After the thyroid gland has been removed, thyroglobulin should no longer be present. This is the reason thyroglobulin levels are useful for monitoring those who have been treated for thyroid cancer.
- **Thyroiditis:** - Inflammation of the thyroid gland.
- **TRH** - Thyrotropin (thahy-ruh-troh-pin)-Releasing Hormone Test, TRH is the hormone that is secreted by the hypothalamus gland in the brain to stimulate TSH production in the pituitary gland. In the past, this test was done when either pituitary gland or hypothalamus problems were suspected to be the cause of hypothyroidism. Now that TSH measurements have become more precise, TRH testing is no longer necessary.
- **TSH** - Thyroid Stimulating Hormone, TSH is produced and secreted by the pituitary gland to stimulate the thyroid gland to make and release thyroid hormones (T4 and T3) into the blood. Through a feedback loop, these hormones reach the pituitary and decrease the secretion of TSH.
- **TT3** - Total Triiodothryonine ([trahy-ahy-oh-doh-thahy-ruh-neen) Test, A T3 blood test measures both bound and free triiodothyronine in the blood. T3 has a greater effect on the way the body uses energy than T4, even though T3 is normally present in smaller amounts than T4.
- **TT4** - Total Thyroxine (thigh-ROX-een) Test, Thyroxine (T4) is the main hormone produced by the thyroid gland. Most of the T4 in the blood is attached (“bound”) to a protein called thyroxine-binding globulin. Less than 1 percent of the T4 is unattached (“free”). A total T4 blood test measures both bound and free thyroxine. Free thyroxine affects tissue function in the body, but bound thyroxine does not.