

What doctors want patients to know about hyperthyroidism

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Hyperthyroidism is a medical condition in which the thyroid gland becomes overactive, producing more hormones than the body needs. This hormonal imbalance can lead to a wide range of symptoms, including unexplained weight loss, rapid heartbeat, irritability and difficulty sleeping.

While it can affect people of all ages, it is especially common among women and often emerges in early adulthood or later in life. With various potential causes—from autoimmune disorders such as Graves' disease to thyroid nodules—managing hyperthyroidism requires careful diagnosis and individualized treatment.

The AMA's What Doctors Want Patients to Know™ series gives physicians a platform to share what they want patients to understand about today's health care headlines.

In this installment, [Lisa Stone, MD](#), an endocrinologist at Confluence Health in Wenatchee, Washington, discusses what patients should know about hyperthyroidism.

[Confluence Health](#) is part of the [AMA Health System Member Program](#), which provides enterprise solutions to equip leadership, physicians and care teams with resources to help drive the future of medicine.

Thyroid levels are high

“Hyperthyroidism is a condition with high thyroid levels, either overproduced by the thyroid or released from a damaged thyroid gland,” said Dr. Stone, explaining that “thyroid hormone fine-tunes how fast the metabolism and the body work.”



Lisa Stone, MD

“Too much thyroid hormone causes symptoms similar to those of too much adrenaline, or [too much caffeine](#),” she said.

There are different causes

The most common cause of hyperthyroidism is “Graves’ disease, which is an autoimmune disorder—the immune system reacting against itself—where the immune system makes an antibody that turns the thyroid production on, outside the normal control of the thyroid,” said Dr. Stone. Another cause is “functioning nodules—benign growths in the thyroid—that can make thyroid hormone in excess. Again, this thyroid hormone production is outside the normal control of the thyroid.”

“Some illnesses, viruses, postpartum state and medications have the potential to damage the thyroid cells, called thyroiditis,” she said. “This leads to release of thyroid hormone from the damaged cells. Once the stored thyroid hormone is released from the thyroid cells, the thyroid levels will fall on their own.”

Additionally, “taking too much thyroid hormone supplement” can also cause hyperthyroidism,” Dr. Stone said. “Rarely, a pituitary tumor can lead to overproduction of thyroid hormone.”

Know if you are at risk

“Women—particularly younger women—are at higher risk of Graves’ disease,” said Dr. Stone. Meanwhile, “older individuals, both men and women, are at risk of developing thyroid nodules. Of thyroid nodules, about 10% can overproduce thyroid hormone.”

“Individuals with a family history also have an increased risk,” she said, adding that “individuals with autoimmune disorders may predispose to Graves’ disease.”

Additionally, “anyone can develop the post infectious thyroid inflammation thyroiditis,” said Dr. Stone.

It is different than hypothyroidism

“Hyperthyroidism is the presence of too much thyroid hormone,” said Dr. Stone. “This increases the speed at which the body and cells work.”

On the other hand, “hypothyroidism is the lack of sufficient thyroid hormone,” she said. “The effect is to slow the speed at which the body and cells work.”

Symptoms of hyperthyroidism vary

“Some individuals experience few symptoms, even in the presence of very elevated levels, and some individuals experience very significant symptoms with more mild elevation of levels,” Dr. Stone said. “Typically, the higher the thyroid hormone levels, the worse the symptoms.”

“The spectrum of symptoms can be very individual,” she said, noting the symptoms of [hyperthyroidism](#) can include:

- Unintentional weight loss.
- Fatigue.
- Anxiety.
- Tremulousness, which is shaking or quivering.
- Irritability.
- Hair loss.

- Dry skin.
- Itchy skin.
- Increased heart rate.
- Irregular heart rhythms.
- Shortness of breath.
- Insomnia.
- Heat intolerance.
- Headaches.
- Irregular menstrual cycles or cessation of menstrual cycles.
- Forgetfulness.
- Difficulty concentrating.
- Increase in heartburn.
- Increase bowel frequency.
- Diarrhea.
- Weakness.
- Decreased exercise tolerance.

“With more severe, or more prolonged, elevation of thyroid hormone levels, there is an increase of irregular heart rhythms, heart failure and loss of bone density, [osteoporosis](#),” Dr. Stone said, noting that “older individuals often have fewer or less severe symptoms even with similar thyroid hormone levels compared to younger individuals.

“They may experience only weight loss, irregular rhythms, weakness and diarrhea,” she added.

Thyroid levels are tested

Low thyroid-stimulating hormone (TSH) “and inappropriately normal or elevated thyroid hormone levels diagnose hyperthyroidism,” said Dr. Stone. “The thyroid is controlled by the pituitary—master gland that controls many hormone systems. TSH stimulates production of thyroid hormone under normal circumstances.

“Because the causes of elevated thyroid hormone are usually outside the normal control of the thyroid, the TSH is low, trying to turn off thyroid hormone production,” she added. “The thyroid hormone levels, T4 and T3, are elevated. If the TSH is very low, even with normal thyroid hormone levels, the thyroid levels are too high for that individual.”

There are several treatment options

“To reduce symptoms such as increased heart rate, palpitations, tremulousness and anxiety, a beta-blocker may be used,” said Dr. Stone. “These work to decrease the adrenaline and caffeine-like symptoms. They do not treat the underlying cause of the hyperthyroidism.”

“Antithyroid medications, such as Methimazole and Propylthiouracil, decrease thyroid hormone production of thyroid cells,” she said. “This can work for Graves’ disease and overactive thyroid nodules, but not for a temporary thyroid injury.”

“Radioactive iodine is used to destroy overactive thyroid tissue,” Dr. Stone said. “Iodine is absorbed by thyroid cells and used to produce thyroid hormone. Radioactive iodine is energetic iodine that is preferentially absorbed by overactive thyroid cells.

“It then destroys the overactive thyroid cells from inside, as the radioactive iodine deteriorates. This can destroy overactive thyroid nodules, and the thyroid itself in Graves’ disease,” she added. “After treatment, patients with Graves’ disease and many patients treated for nodules will require lifelong thyroid hormone replacement.”

Another treatment option is “surgery to remove the thyroid or a portion of the thyroid,” said Dr. Stone. “Depending on how much thyroid is removed, lifelong thyroid hormone replacement may be required.”

Patient preference determines treatment

“If there is a temporary thyroid inflammation causing injury to the thyroid cells and release of stored thyroid hormone, the only treatment is to control symptoms until the thyroid levels improve on their own,” said Dr. Stone. “If due to Graves’ disease, the use of antithyroid

medications to control the thyroid levels can lead to a reduced immune response against the thyroid.

“After a period of time, it may be possible to stop the medication and maintain normal thyroid levels. In that case, the condition is in remission,” she added. “Alternatively, destroying the thyroid with radioactive iodine, or surgically removing the thyroid, can be pursued.”

“While antithyroid medications can control the high thyroid levels due to functioning nodules, it does not resolve or destroy the nodules. So, if stopped, the thyroid levels will rise again,” Dr. Stone said. “If antithyroid medications are chosen, it will require lifelong treatment. Alternatively, radioactive iodine may destroy the overactive nodules.”

“The remainder of the thyroid may also be injured requiring lifelong thyroid hormone replacement,” she said, noting that surgery is done “to remove the portion of the thyroid with the nodule.”

“Fundamentally, patient preference determines treatment. Many patients do not want to do something irreversible so choose antithyroid medications,” Dr. Stone said. “If patients want to definitively treat the hyperthyroidism or side effects or lack of response to antithyroid medications, radioactive iodine or surgery is chosen.”

Treatments may have side effects

“While antithyroid medications are generally safe, there is the small potential risk of liver injury, sudden drop of white blood cells that could increase risk of bacterial infection or a lupus-like reaction,” Dr. Stone said. “While usually reversible, these adverse reactions can be life-threatening.”

There can also be “allergic reactions or other general side effects such as headache, gastrointestinal symptoms, among others,” she said. Meanwhile, “beta-blockers have the potential for a very low heart rate or blood pressure. This risk is generally low, and dose related. They can exacerbate asthma.”

Additionally, “there is a low risk of leukemia, and salivary gland, breast, uterine and ovarian cancers, which is typically dose related with doses used for treating thyroid cancer, and very low risk with doses used for treating hyperthyroidism,” Dr. Stone said.

Thyroid levels improve gradually

With medication for hyperthyroidism, “T4 levels decrease by 50% in a week,” said Dr. Stone, noting that “thyroid levels can only drop so quickly, depending on this rate of decline.”

“If the involved thyroid is removed surgically, the thyroid levels generally will drop over the course of a couple of weeks,” she said. “Antithyroid medications do not work immediately with thyroid levels generally falling back to the normal range over several weeks or a couple of months.”

Meanwhile, “treatment with radioactive iodine can take from six weeks to six months for thyroid levels to come down,” Dr. Stone said.

Medication is likely lifelong

Historically, anti-thyroid medications have been considered a short-term treatment—approximately a year for Graves’ disease, or until the thyroid levels have been controlled for functioning nodules. If the patient is not in remission after a year on medication for Graves’ disease, radioactive iodine is often recommended. For nodules, radioactive iodine, or surgery is generally recommended.

In recent years, patients are less likely to desire definitive treatment such as radioactive iodine or surgery. So, long-term treatment with antithyroid medications is more common.

With Graves’ disease, don’t skip a dose

“Anything that affects the immune system—illness, and emotional and physical stress—can lead to an exacerbation of the autoimmune response in Graves’ disease,” Dr.

Stone said. “Graves’ disease will usually not remit spontaneously if the hyperthyroidism is significant, so deciding not to treat is not recommended.

“The exception is if the thyroid levels are only mildly abnormal and improving on their own,” she added. “Thyroid levels will need to be monitored based on blood work and the dose of antithyroid medication adjusted as the thyroid responds to treatment.”

“Missing doses of medication, or discontinuation of medication prematurely, will prolong the time it will take to control the thyroid levels or determine if remission will occur,” Dr. Stone said.

There are complications if left untreated

“If left untreated, hyperthyroid symptoms are likely to worsen as thyroid hormone levels rise,” Dr. Stone said. Untreated hyperthyroidism can also lead to “heart failure, atrial fibrillation, other arrhythmias, stroke, osteoporosis, loss of muscle mass, elevated blood pressure, fertility problems and pregnancy complications.”

“With normalization of the thyroid levels, these complications are largely reversible. However, with longer hyperthyroidism osteoporosis may not be reversible,” she said.

Watch your eyes

“Thyroid eye disease—Graves’ orbitopathy—is an autoimmune disorder in which the autoantibodies that cause Graves’ disease react against the tissues around the eyes,” Dr. Stone said. “It can occur in about one of three patients with Graves’ disease. It usually develops around the same time Graves’ disease is diagnosed.

“However, it can occur years before, years after or even in the absence of hyperthyroidism. It can occasionally occur with hypothyroidism,” she added, noting “one of the biggest risk factors is smoking.”

“Symptoms and signs include eye dryness, grittiness, tearing, pain behind the eyes, swelling around the eye, swelling pushing the eyes forward, double vision and, rarely,

vision loss,” Dr. Stone said. “It is usually mild and improves on its own.”

“If severe, or vision threatening, treatment with steroids or immune modifying medication—such as Tepezza or Teprotumumab—may be recommended. It can be exacerbated or triggered by radioactive iodine treatment,” she said.

Maintain a healthy lifestyle

“Caffeine and adrenaline can exacerbate symptoms of hyperthyroidism,” said Dr. Stone. Also, “excess iodine can increase thyroid levels due to providing more iodine for thyroid hormone production.”

“Maintaining healthy lifestyle measures such as [healthy foods](#), [good sleep hygiene](#) and reducing stress as much as possible can help reduce symptoms,” she said.