[CN]Chapter 5

[CT]Treating Hypothyroidism

[IP]Now that you know your thyroid is under active, you'll need to start treatment to restore the hormones you're missing. At the right dosage, you'll quickly notice that your symptoms will ease up, and you'll feel well again. The key is pinpointing that dosage and understanding all the factors that can affect it.

[H1]Drug Options

[NF]People who have hypothyroidism need thyroid hormone replacement, and they'll probably need it for the rest of their lives. Once the right dosage is established, thyroid hormone replacement works well, and is safe and easily tolerated. You'll soon notice that your symptoms will ease up, and your health will improve. And blood tests will reveal that your T4 and TSH levels are back to normal levels.

But sometimes, establishing the right dosage of thyroid hormone replacement can be tricky. It may take a few months before you and your doctor figure out the right amount. After all, what works

for one patient with a similar profile may not always work for another. Working with your doctor, you will have to experiment with different dosages and get regular blood tests before you pin down the one that works for you.

You also need to make sure you are on the correct form of thyroid hormone replacement. These drugs come in different varieties and brands. You may fare better on one brand or type than you would on another, and it may take some time and experimenting before you figure out what works best. In addition, you'll need to take and store these drugs correctly.

[H2]Synthetic T4

Most doctors today start their hypothyroid patients on synthetic T4. Although T3 is the active form of thyroid hormone, T4 is readily converted to T3 in body tissues. T4 is also the more stable form of thyroid hormone, which helps ensure that blood levels of thyroid hormone remain more even, so that you don't experience the highs and lows that come with taking T3.

The generic name of synthetic T4 is levothyroxine, which is sold under several brand names, the most popular being Synthroid. Although Synthroid was prescribed for years, it did not receive approval from the U.S. Food and Drug Administration until 2003. Since its debut in the 1950s, it had been considered an equivalent of natural hormone (Armour) and so was grandfathered in and spared the approval process required of new drugs. But concerns about potency and stability prompted the FDA to revisit all levothyroxine products and require their manufacturers to apply for approval as new drugs.

By 2004, Synthroid was the second most popular drug in the U.S. – behind Lipitor, the cholesterol-lowering agent -- with more than 42 million prescriptions sold. Other brand names include Levoxyl, Unithroid, and Levothroid.

Some patients may prefer one brand over another, but all the brands are made of synthetic thyroxine. Like the real T4 that your body makes, synthetic T4 tends to remain in the blood for a long time, providing your body cells with a steady supply of thyroid

hormone. If your doctor prescribes one brand for you, you should not switch to another brand without his knowledge. Also, ask your doctor to write “DAW” on your prescription. DAW stands for dispense as written and will help ensure that a generic is not substituted. If your pharmacist tries to switch your brand, you should insist on getting the drug you are prescribed.

[E-ssential]

[SB]Although the active ingredient in all the brands of levothyroxine is the same, different brands contain different fillers and are subject to their own quality controls. That’s why it’s best to find one brand you like and to stick with it.

[ESB]

Levothyroxine comes in different color-coded doses. The 50 mcg pill is white and contains no dye, so that people allergic to dyes have that option. Depending on the dosage you’re prescribed, you may take the pills singly or in combination. In some cases, you may be able to cut a pill – they do have a line down the middle for easy cutting – and save some money and trips to the pharmacy.

For most patients with hypothyroidism, treatment with T4 alone is often successful and adequate. Once on T4, their TSH levels will drop to normal, and symptoms will disappear. But if symptoms don't fade, you may need to be treated with T3 as well.

[H2]Synthetic T3

As you probably recall, T3 is the active form of thyroid hormone. The synthetic form of T3 is used primarily to lessen the symptoms of hypothyroidism when preparing for whole body scans (described in chapter 11), which requires that you become hypothyroid. Synthetic T3 is called liothyronine, and sold under the brand name Cytomel.

Unlike synthetic T4, the synthetic T3 works in the body for only a few hours, which means you need to take several doses a day to derive its benefits. Taking T3 also disrupts the way your body naturally controls and regulates TSH levels. And if you take only T3, you will experience low T4 levels. In addition, taking too much T3 can stress the heart.

Still, some patients with hypothyroidism may require T3 if they continue to have symptoms of hypothyroidism even after their TSH levels normalize from the use of T4. Some experts contend that the presence of symptoms suggests that you are having trouble converting T4 into T3. Others dispute that notion and argue that the problem is really another health issue unrelated to the thyroid. In any case, some doctors may prescribe T3 to address the lingering symptoms. The science on the use of T3 is mixed: Some studies have suggested that patients do better when they take both T4 and T3. But other studies have found no difference in patients receiving T4 alone versus a combination of T3 and T4.

It's possible, but not proven that patients with low blood levels of free T3 may benefit from T3 treatment. It is also possible that patients who do not fare well on T4 alone may have low levels of T3 in the brain, which cannot be detected without a brain biopsy.

[E-Alert]

[SB]It's dangerous to take Cytomel – or any other thyroid hormone for that matter – as a way to lose weight. Too much thyroid

hormone certainly can rev up the metabolism and result in weight loss. But many people without a thyroid disorder who take thyroid hormone gain weight because their appetite increases. Taking thyroid hormone can also put you into a state of hyperthyroidism, which can cause heart problems and osteoporosis.

[ESB]

In my practice, I tend to start patients on T4 by itself and adjust the dosage until their TSH is between 0.5 and 2 miU/mL. If they still have symptoms – despite normal TSH levels – I might start them on low doses of T3. (Although Cytomel is taken two or three times a day, patients can use a compounding pharmacy that will make a slow-release T3 that is taken once a day. Unfortunately, most insurance companies will not cover the cost of compounded medications.) I am more inclined to treat patients with T3 if initial tests showed they had low levels of free T3 in their blood.

If they are given both T4 and T3, I check to make sure their blood levels of free T4 and free T3 are in the higher end of normal. When

patients are on this type of combination treatment, they are likely to have lower levels of TSH since T3 suppresses the TSH.

[H2]Synthetic T4 and T3

Some patients who need T3 may be given a drug that combines both T4 and T3. This combination drug is called liotrix and sold under the brand name Thyrolar. The ratio of T3 to T4 in Thyrolar is 1 to 4. If you are prescribed Thyrolar, make sure to store it in the refrigerator.

The disadvantage of Thyrolar is that the T3 to T4 ratio is fixed. If your doctor gives you T3 and T4 separarely, she can adjust that ratio to better match your needs.

[H2]Dessicated Thyroid Drugs

In the years before synthetic T4 was available, people who had hypothyroidism relied on dessicated thyroid hormone replacement to restore their missing hormones. In fact, Armour, the most well-known brand, was the only thyroid hormone drug on the market for the first half of the 20th century. Today, it remains a popular treatment despite the use of synthetic thyroid hormone, with almost

$2.5 million in sales in 2004, according to Drug Topics, an on-line pharmacy publication.

These treatments are made from hormones extracted from the thyroid glands of pigs. They contain both T4 and T3 and are sold under several brand names, Armour being the most popular. Other brands include Bio-Throid, Westhroid, and Nature-throid. These medications are particularly appealing to patients who prefer using "natural" products to synthetic ones.

Although it has not been proven, some experts believe that dessicated thyroid contains other hormones or factors made by the thyroid, which are not found in synthetic hormones.

[E-ssential]

[SB]If you have trouble convincing your doctor that you should try natural hormone therapy, consider finding a more open-minded physician who will let you give it a try. Armour is also much cheaper than synthetic thyroid hormone.

[ESB]

Some conventional doctors are more resistant to using dessicated thyroid hormone in their patients, believing that synthetic products are best. But in reality, some patients do better on these products than they do on the synthetic ones. If you are on synthetic hormones, have a normal TSH (0.5-2.0 mIU/dL) and still not feeling well, you should discuss the possibility of trying natural hormone therapy.

Some people are concerned about the consistency of the different batches of these products. Since the thyroid hormones come from pigs, it is quite possible that the amount of thyroid hormone in the gland of each animal will vary somewhat. On the other hand, most manufacturers do take steps to ensure consistency. Forest Pharmaceuticals, Inc., which makes Armour, for one, says it tests both the powder and the finished tablet to ensure that the amount of hormone is consistent. Any inconsistency that might occur is usually so slight as to be insignificant.

When I have patients who do not improve on T4 treatment alone or combined T4 and T3 therapy, I will sometimes switch to a natural

treatment, usually Armour, plus synthetic T4. I add T4 to the regimen to make up for the higher T3 to T4 ratio found in Armour. When I test them, I look for a free T4 and free T3 in the upper ranges of normal.

[H1]Taking Drugs Correctly

[NF]When you first start taking thyroxine, some doctors may start you on the lowest possible dose. Other doctors (including Dr. Friedman) will recommend starting on a full replacement dosage unless you are elderly or have heart problems. The advantage of starting on a full replacement dose is that you will feel better sooner. The dose you take will be based on several factors, including your age, weight, the cause of your hypothyroidism, and whether you are taking other medications. A rough guide is the dose of T4 in micrograms you will need is equal to your weight in kilograms times 1.6. One kilogram equals 2.2 pounds.

In general, the more you weigh, the higher the dose. And if you are older, you will probably start on a low dose, so that your body can adjust. Drugs generally move more slowly in older people, so you

may wind up staying on a low dose. But if you do need more medication, your doctor will probably increase it very slowly. The cause of your hypothyroidism also may dictate the dose you receive. If you have Hashimoto's disease or mild hypothyroidism for instance, some doctors believe your thyroid may still be making some hormone, and you probably need a lower dose. Other doctors recommend full replacement even for mild hypothyroidism. But if you have had your thyroid removed, you will often need a higher dose to make up for the missing hormone. In any case, taking too much thyroxine can trigger symptoms of hyperthyroidism – anxiety, restlessness, and a rapid heartbeat.

[E-Question]

[SBQ]**Are generic thyroid drugs as good as brand name ones?**

[SB]Although doctors almost always prescribe brand name, some pharmacies – or health maintenance organizations – may actually try to give you a generic version. The American Thyroid Association recommends that you stick with brand names whenever possible since generics may not be consistent from one

refill to the next. Always check that you were dispensed the brand you were prescribed.

[ESB]

Whatever thyroid hormone replacement drug you wind up taking, it's critical that you take it correctly and follow your doctor's orders closely. Becoming familiar with your thyroid hormone drug – which drugs and foods affect it, how to store it, and when to expect to feel better – can make a big difference in how well the medication works for you. Here are some important facts to know.

[H2]Be Consistent

The key to successful thyroid hormone replacement is taking it every day – every single day. One of the most important things you can do to ensure that you remember to take your pill is to take it at the same time every day. Most doctors recommend taking your pill first thing in the morning. Link it to another daily habit such as brushing your teeth or just before taking your morning shower. Some people find it easier to remember by keeping their pills in containers marked by the days of the week.

If you miss a dose, don’t panic. T4 tends to remain in your blood for a long time. Simply take your pill when you remember it. If you forgot to take your pill yesterday, you can take one pill (the forgotten one) in the morning and one in the evening. It’s best to not take two pills at once. Or, you can probably skip the one you missed. If you’re concerned, call your doctor or pharmacist and ask what you should do.

It’s also important to take the brand that you are prescribed. Although each brand contains the same active ingredients, some of the filler ingredients may differ and can affect the way your body absorbs the drug. If you do want to try another drug, you must do so under a doctor’s supervision and get your TSH tested and dosage adjusted, if necessary.

[E-Alert]

[SB]Always take your thyroid medication with a full glass of water. Depending on the brand you take, some tablets may expand and get stuck in your throat, causing gagging or choking.

[ESB]

People who take drugs that contain T3 should talk to their doctors about taking their drugs at different times of the day. T3 is a faster-acting drug that quickly loses its effect after just a few hours. Taking it two or three times a day can sometimes help even out your hormone levels.

[H2]Give it Time

You've been taking your pill every day for three weeks now, but you're still feeling lousy. You may be wondering why the drug isn't working. Meanwhile, your sister noticed improvements in just two weeks. What's going on?

In reality, the impact of thyroid medication varies from one person to the next. For some people, the effects may kick in just two weeks. In others, it might take six weeks before the drug starts to work, and you notice any significant improvements. In any case, around four to six weeks, your doctor will do another set of thyroid tests. If your TSH levels are still high – or they've gone too low -- your doctor will need to adjust your dosage accordingly.

In some cases, it can take months before you and your doctor pinpoint the best dosage. But be patient. Finding the best dose is a matter of trial and error. You will eventually find the right dosage.

[H2]Store It Properly

Most people stash their medications in the bathroom cabinet, where they're easily accessible in the morning or evening. But in reality, the bathroom isn't always the best place for drugs that need to be at room temperature, which includes most thyroid medications.

Levothyroxine (Synthroid) for instance, is sensitive to heat. Heat and steam from several showers can raise the temperature in a bathroom cabinet affect the potency of the drugs stored there. Other storage places you need to beware of include kitchen cupboards near the stove or dishwasher, the glove compartment of your car, or a counter or window ledge that sits in direct sunlight. Instead, store the drug at room temperature in cabinets that are removed from heat and light. The only drug for hypothyroidism that requires refrigeration is liotrix (Thyrolar).

[H1]Watch What You Eat

[NF]The foods you eat and medicines you take can have a big effect on how well your body absorbs your thyroid medication. Ideally, you should take your pill on an empty stomach since food can delay absorption. It’s best to wait an hour before eating after you take your pill.

But if you prefer to eat something before taking your thyroid drug, do that every day. The key is to be consistent. Whether you choose to take your drug with or without food, do the same thing each day. Varying it will make absorption erratic and cause hormone levels to be irregular.

[E-ssential]

[SB]Some experts believe that certain foods, eaten raw, can promote thyroid problems by blocking the thyroid’s uptake of iodine. These foods are known as goitrogens and include items such as broccoli, cabbage, kale, cauliflower, brussel sprouts, and turnips. In reality however, most goitrogens do not cause thyroid problems unless eaten in large quantities.

[ESB]

Certain foods and supplements can inhibit your body’s absorption of thyroid medications, too. A diet rich in fiber for example, may decrease the amount of thyroid medication that your body absorbs. If you’re already eating a high-fiber diet at the time you start taking thyroid replacement, your body will settle into the proper dosage with the fiber taken into account. But if you decide to start eating a high-fiber diet after starting your thyroid drug, be sure to let your doctor know. You may need a higher dose of thyroid medication.

In addition, some substances and minerals in food can inhibit absorption of thyroid medications. These substances should not be ingested at the same time you take your thyroid drug. Foods and supplements that inhibit absorption include:

[BL]Calcium supplements and calcium-fortified foods

[BL]Iron supplements

[BL]Soy foods and other foods that contain isoflavones

[BL]Antacids that contain either calcium or aluminum hydroxide

Taking calcium or iron is especially problematic. If you must eat these foods or take these supplements, make sure to wait at least one hour after taking your thyroid medication before doing so. Spacing them out will reduce the likelihood that these foods and supplements will affect your thyroid treatment.

[H1]Be Wary of Other Drugs

[NF]Foods and supplements aren't the only substances that can impact the way your thyroid hormone replacement works. Certain drugs can impact the effectiveness of your thyroid treatment, too. At the same time, thyroid hormone can have an effect on how these drugs work. That's why it's critical that you tell your doctor *all* medications you are taking before he puts you on a thyroid drug.

Here is a partial list of the kinds of drugs that can affect your thyroid medication:

[BL]Cholesterol-lowering Medications: Drugs that reduce cholesterol levels such as Colestid and Colestrol bind thyroid hormones and make them less effective.

[BL]]Diabetes Drugs: Diabetics who rely on insulin or sulfonylureas may notice that these treatments are more or less effective when they start taking thyroid medications.

[BL]Antidepressants: When taken with thyroid hormone replacement, the therapeutic and toxic effects of tricyclic antidepressants and thyroid drugs may be increased. If taken with a selective serotonin reuptake inhibitor (SSRI) such as Prozac or Zoloft, your thyroid medication may become more or less effective.

[E-ssential]

[SB]Many over-the-counter cough-and-cold remedies have labels advising consumers to check with their doctors first if they have thyroid disease. According to Mary J. Shomon, author of *Living Well with Hypothyroidism*, the warning is intended primarily for patients with hyperthyroidism. But people with hypothyroidism may be extra sensitive to the decongestant ingredient pseudoephedrine, which is a stimulant.

[ESB]

[BL]Anticoagulants: Medications such as warfarin (Coumadin), that are used to prevent blood clotting – known as blood thinners – can sometimes become more potent in the presence of thyroid medications.

[BL]Estrogen: Contraceptives and hormone replacement therapy that contain estrogen may decrease the amount of thyroid hormone in your body and require you to take a higher dose.

[H3]Anticonvulsants: Taking thyroid hormone replacement with drugs used to treat convulsions such as Dilantin can speed up the metabolism of the thyroid medication.

[BL]Gastrointestinal Medications: Antacids that contain aluminum or magnesium, sucralfate (Carafate) and simethicone (GasX) can all affect the way your body absorbs thyroid hormone replacement.

[BL]Beta Blockers: People who have high blood pressure, heart failure, or previous heart attacks may take drugs called beta blockers. The potency of certain beta blockers such as metoprolol (Lopressor) or propranolol (Inderal) may be reduced when you start taking a thyroid drug.

Other drugs that warrant mention include aspirin, steroids, amphetamines, theophylline (for asthma), and medications used to reduce appetite or lose weight. The effectiveness of all these medications may be affected when you start taking thyroid hormone replacement.

Obviously, the list of drugs that interact with thyroid medications is a lengthy one. Again, that's why it's critical that you tell your doctor about *all* the medications and supplements you are taking.

[E-Alert]

[SB]If you'd like a listing of drugs that can affect your thyroid medication, check on the Internet for the individual medications. Many, such as Synthroid (www.synthroid.com) and Armour (www.armourthyroid.com) have their own Web sites, produced by their manufacturers. You can also find information on the National Library of Medicine Web site at www.nlm.nih.gov. But don't let the list alarm you. Most interactions are mild.

[ESB]

You should also tell your doctor about any preexisting medical conditions. While it doesn't necessarily mean that you'll have to stop taking these other drugs, it might mean that you need to adjust your dosage of one or both medications accordingly.

[H2]Other Factors

Life changes, and disruptions in our habits and routines can affect how well our thyroid medication works, even after you've figured out your dosage and been on it for a while. Bouts of stress, starting a high-fiber diet, or going on birth control pills, for instance, can all increase your need for more thyroid medications.

If you notice that your medication no longer seems to be working and your symptoms of hypothyroidism have returned, talk to your doctor. By doing some detective work, she may be able to pinpoint the reasons why your medication has become less effective. She'll also be able to adjust your dose, so that you find a new one that does work.

[H1]A Note on Pregnancy

[NF]Most women have been told to steer clear of medications when they're pregnant. While avoiding drugs is generally a good idea, you should always continue to take your thyroid hormone replacement. Not only is the medication safe, but your body will need it to supply the growing fetus with thyroid hormone.

The best thing to do is to tell your doctor ahead of time if you are trying to conceive and to let her know as soon as possible if you do get pregnant. Your doctor may want to increase your dosage. We'll discuss the thyroid and pregnancy later on in chapter 13.

[H1]Side Effects and Complications

[NF]Luckily, drugs for hypothyroidism tend not to cause many side effects. The main problem with taking thyroid replacement occurs when you take too little or too much of the drug. Too much, and you could become hyperthyroid, which means you'll feel jittery, anxious, and short of breath, and have trouble sleeping. You may also be at risk for osteoporosis since you're speeding up the turnover of bone. Too little, and you'll continue experiencing the

symptoms of hypothyroidism. The key to avoiding that problem is finding the perfect dosage, which is a process of trial and error. Although rare, some people do notice side effects from taking thyroid hormone replacement. Some women for instance, may notice changes in their menstrual periods. Occasionally, people may have an allergic reaction to the dyes in thyroid medications. Other possible side effects include:

[BL]Weight Loss

[BL]Diarrhea

[BL]Fever

[BL]Hair loss

[BL]Headache

[BL]Irritability

[BL]Leg cramps

[BL]Nausea and vomiting

[BL]Tremors

[BL]Insomnia

Such side effects are a nuisance, but are not considered serious unless they persist. But if you notice chest pain or an irregular heartbeat, you should contact your doctor immediately. Other side effects that warrant immediate medical attention include difficulties breathing, excessive sweating, or swelling in the ankles, feet, and legs.

In people who take drugs that contain T3, the side effects are the same. Too much T3 can cause anxiety, insomnia, and a rapid heartbeat. The side effects may be most apparent shortly after you take T3, when your body gets its first jolt of the hormone.

[H1]A Final Note

[NF]Thyroid hormone is essential to your health, and if you've become hypothyroid for any reason, it is critical that you replace the missing hormone. Most people who develop hypothyroidism will have it for the rest of their life and will require thyroid hormone replacement. You will also need to monitor the effect of your medication on a regular basis. The good news is, once you've

established the right dose for your body, the amount of monitoring will go down. Taking your pill will simply become a part of your daily routine.

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