

Thyroid Disorders

Introduction:

There are many disorders in the world today that have an effect on our lives. I picked Thyroid Disorders because I knew that if something happens to your thyroid you'll be at risk to become over weight. I don't know much about the gland itself and what other disorders come along with it so I'm interested in learning about how it can affect someone's life. I'm interested in learning what causes this disorder and what the possible treatments that are available for an average consumer. Hopefully with all the information I find I will have a better understanding of this disorder and I will be able to share my knowledge with others.

Section 1: Background and Problem Statement:

- **Web site #1 Name:** U.S. National Library of Medicine and the National Institute of Health
- **Web address:** <http://www.nlm.nih.gov/medlineplus/thyroiddiseases.html>
- **Background Information:**

I couldn't find any information of thyroid diseases on the Healthy People 2010 Web site. I found this Web site to use instead. It is part of the National Library of Medicine and National Institutes of Health. It's an up and coming health problem because there are 13 million people affected by it each year. There is no way to prevent thyroid disorders, but you can manage the disorder so there aren't any complications. You must be aware of any changes in the way you feel and you must go see a doctor who specializes in autoimmune disorders. There are 3 disorders you can come upon dealing with the thyroid. First, Hashimoto's Disease, which is when the immune system attacks the thyroid, most common with women between, ages 30-50. Symptoms include weight loss, depression, trouble swallowing. Next, hypothyroidism is a condition where the thyroid makes too little hormone. Symptoms are the same as Hashimoto's. Then, we have thyroid cancer, which is a cancerous tumor or growth located on the gland. This scenario is not found often, it is discovered by patients touching their neck and feeling a stubble or bump. When a person has a problem with his/or her thyroid gland they usually get Thyroiditis, which is discomfort of the gland. They have to battle with fatigue, scratchiness, constant bathroom breaks, and temperature sensitivity.

- **Web site #2 Name:** Thyroid Australia Ltd.
- **Web address:** <http://www.thyroid.org.au/Information/disorders.html>
- **Background Information:**

Your thyroid gland is an Endocrine gland, which means it sinks hormones directly into the bloodstream. It's located in the lower part of your neck and it wraps around your trachea, and is well supplied with blood vessels. The thyroid gland contains cells that emit chemical substances called hormones. The main two hormones created by the thyroid are called thyroxin and triiodothyornine. Basically, the thyroid hormones regulate metabolism, the way the body

uses energy and affect nearly every organ in the body. It affects tissue, cells, and organ systems. Thyroid hormones control the body's metabolism (lethargy, body temperature, and weight), the division of cells, plus aspects of child development. For example, thyroid hormone is essential for fetal brain development in humans. After reading this list, you can see that that the thyroid controls many important functions of the body. The thyroid gland needs iodine to produce its two types of hormones. According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), thyroid problems affect as many as 27 million people worldwide. Among the most common problems are hypothyroidism and hyperthyroidism. This is obviously a huge problem that I don't think many people know about.

- **Web site #3 Name: National Endocrine and Metabolic Disease Information**
- **Web address: <http://www.endocrine.niddk.nih.gov/pubs/Hyperthyroidism/>**
- **Background Information:**

Hyperthyroidism is a disorder that occurs when the gland makes more thyroid hormones than the body needs. A study done at the American Association of Clinical Endocrinologists states that one percent of the population has this disorder, and it's way more likely to affect women than men. There are a couple causes of hyperthyroidism; the most common is Grave's disease, which is an autoimmune disease, which means the body's immune system acts against its own cells and tissues. In Graves' disease, the immune system makes an antibody called (TSI), which mimics TSH and causes the thyroid to make too much hormone. The next is Thyroiditis, which causes stored thyroid hormone to leak out of the inflamed gland and raise hormone levels in the blood.

The symptoms of hyperthyroidism can vary from person to person but are commonly nervousness, fatigue or muscle weakness, mood swings, weight loss, heat tolerance, and trouble sleeping. Women are 10 times more likely to get hyperthyroidism than men. It's suggested that you have a blood test done every 5 years after age 35 to detect any thyroid problems. Hyperthyroidism is more common in people over age 60 and is often caused by thyroid nodules. Factors that can increase your chances of developing hyperthyroidism are previous thyroid problems, having type one diabetes, having a family history of thyroid problems, eating a lot of food with high iodine content, being pregnant and delivering a baby within the past 6 months. There are a couple testing methods that are used such as the Thyroid-Stimulating Hormone Test, T₃ and T₄ Test, Radioactive iodine uptake test, or a Thyroid scan.

The most common treatment for hyperthyroidism is medication prescribed by a doctor called Antithyroid drugs, these are helpful but it can take a while to see results it may take a year or two to work. Next, there is Radioiodine therapy where radioactive iodine is absorbed by the thyroid. Because it cannot absorb the iodine itself, the radioactive iodine helps restore the cells in the thyroid. The least used treatment is thyroid surgery, where they remove part of your thyroid. There is high risk with this surgery as there are nerves and important glands around your thyroid that could be potentially damaged during the surgery.

Section 2: Research:

- **Web site #1 Name: Smoking and Thyroid Disease**
- **Web address: <http://aje-online.org/cgi/content/abstract/146/2/153>**
- **Summary of the research:**

Smoking has caused cancer for many years now and in this research they compare smokers who have Grave's Disease to people who haven't smoked before who also have the disease. They did this study to try and find out if there is a link between smoking that causes Grave's disease to see if smokers are at higher risk to get Grave's Disease. First, Graves's disease is when an autoimmune disease, which means the body's immune system acts against its own cells and tissues. The study took results from 25 cases that were found on Medline. The results were that if you smoked you had a 3.30% higher chance of getting the disease, and a 1.4% higher chance if you had become an ex-smoker. It was interesting to find out that the risk of smoking and getting Grave's disease was a lot higher for men instead of women. If the individual stops smoking they will lower their chances of getting the disease. This would be good information for a person trying to learn about smoking and respiratory/immune system diseases. This is because every time a smoker smokes they are sending toxic carcinogens down their throat, which is where the thyroid is located. That would be important because this study shows that the smoke does increase your chances to get Grave's disease, so a smoker looking for another motive to stop smoking might read this and it might be the last straw so they stop.

- **Web site #2 Name: The Colorado Thyroid Disease Prevalence Study**
- **Web address: <http://archinte.ama-assn.org/cgi/content/abstract/160/4/526>**
- **Summary of the research:**

This is a study that was conducted by the Colorado Thyroid Disease Prevalence committee. This study looked at the rising levels of abnormal thyroid function in the United States. Effects of abnormal Thyroid function haven't been clearly defined in mild cases of thyroid failure. The participants were 25,000 people in a statewide health fair. They tested the Serum thyrotropin (the stimulating hormone) and total thyroxin concentrations, serum lipid levels and complete a questionnaire. The results of the study were as follows: The amount of elevated TSH in this population was 9.5% and the amount of decreased TSH levels was 2.2%. Lipid levels had increased as thyroid function decreased. Symptoms were reported more often in hypothyroid individuals, but symptom sensitivities were low. This means that there is substantial occurrence of abnormal thyroid function, which confirms that report in smaller populations. A surprising fact was that of patients taking medications, only 60% were within the normal range of TSH. Thyroid dysfunction is common and often goes undetected. This study would be helpful to any individual who wanted to become knowledgeable about how thyroid disease can affect any normal person without even realizing the symptoms that are affecting you. The study included 25,000 people so it wasn't a small study and the people who were on medications and their TSH level was off is pretty shocking to me.

- **Web site #3 Name: Annals of Internal Medicine**
- **Web address: <http://www.annals.org/content/129/2/144.abstract>**
- **Summary of the research:**

The purpose of this study was to evaluate the information on the benefits of screening with a sensitive thyroid-stimulating hormone for thyroid dysfunction in patients that have no previous history of thyroid gland disorders. The study tested 33 adults who were in treatment in subclinical hypothyroidism or subclinical hyperthyroidism. The screenings detect apparent, but unsuspected thyroid dysfunction. Evidence of the efficiency of the treatment is inconclusive. Although the treatment for thyroid dysfunction is controversial, screening to find it may be indicated in women older than 50 years. This will help people trying to learn about Thyroid disorders because it shows them to get tested every so often because even if you don't feel the symptoms you might still have something wrong.

Section 3: Statistics:

- **Web site #1 Name: How many Americans suffer Thyroid Disorders?**
- **Web address:**
http://www.womenshealthresearch.org/site/News2?page=NewsArticle&id=5362&news_iv_ctrl=0&abbr=press_
- **Summary of the statistics:**

Twenty-seven million, that's the number of Americans who are experiencing a thyroid disorder, including that about half of these cases are undiagnosed at this time, according to the American Association of Clinical Endocrinologists. Most thyroid cancers respond to treatment, although a small percentage can be very aggressive. Many Americans experience diabetes, around 16 million to give an estimate, the number of people with thyroid disease exceeds that by more than 40%, making thyroid disease the most common endocrine disorder. I believe this is a worsening disease in American as the numbers are increasing as you can tell by the statistics and who knows when it will stop. There really is permanent treatment for any Thyroid gland disorder, so I believe the numbers will keep increasing unless more people get knowledgeable about these disorders. The growing/young population must keep testing on the thyroid glands because if we don't do self-test we might catch it too late.

- **Web site #2 Name: Thyroid Increase in Women Seen**
- **Web address:**
http://www.acog.org/publications/patient_education/bp128.cfm
- **Summary of the statistics:**

Thyroid cancer affects women two to three times more than men. Besides what appears to be a hormonal or gender connection, the causes of thyroid cancer are not known. When the American Cancer Society came out with a study in 2009, it told us that in the U.S in 2009 there will be 37,000 new cases of thyroid cancer. The majority of these cases will be in women around 27,000 the other 10,000 will be men. About 940 women will die from thyroid cancer in 2009. The annual report by the North American Association of Cancer reported that thyroid cancer rates among women increased 2.2 percent per year from 1981-1993, 4.6 percent per year from 1993-2000 and 9.1 percent from 2000-2003. The high percentage of thyroid cancer that affects women needs to be treated with more urgency, because I believe that not many women know about this disease or how many lives it takes each year. Thyroid cancer is soon to be the highest cancer causing death in the United States and that is a ridiculous statistic.

- **Web site #3 Name: American Cancer Society**
- **Web address:**
http://www.cancer.org/docroot/cric/content/cric_2_4_1x_what_are_the_key_statistics_for_thyroid_cancer_43.asp?sitearea=&level=
- **Summary of the statistics:**

Thyroid cancer is one of the few cancers on the rise in recent years, with a growth rate of about 6% a year since 1997. Many experts believe that the increase is primarily due to greater use of thyroid ultrasound, which is better able to detect previously malignant thyroid nodules that, in the past, likely went undetected. (ACS1) Thyroid cancer is vastly different from other adult cancers as this mostly affects younger people as 2 out of 3 cases are found in people between the ages of 20 and 55. I would hope that this study creates an increase of informative studies furthering the knowledge of teenagers and young adults that thyroid disorders can happen to them and they are able to do self tests and are staying healthy. The American Cancer Society creates these statistics from studies that they perform and they are trying to help the American citizens become healthier.

Section 4: Consumer Information:

- **Web site #1 Name: Radioiodine Therapy for Hyperthyroidism**
- **Web address:**
<http://www.radiologyinfo.org/en/info.cfm?PG=radioiodine&bhcp=1>
- **Summary of the information:**

Hyperthyroidism is when the entire thyroid gland becomes overactive and is producing too much thyroid hormone. This is commonly caused by Grave's disease. One type of treatment is Radioactive Iodine I-131, which an isotope created from iodine to create radiation for medical use. If a small dose of I-131 is swallowed, it is absorbed into the bloodstream very quickly and the iodine is concentrated from the blood by the thyroid gland, then it begins destroying the gland's cells. This treatment remains in the thyroid for some time; it does go down within a few days. The full treatment usually takes between one to three months to develop, the best part of this treatment is that only a single dose or one treatment is needed. The biggest part of this treatment that a consumer would be interested in is that your thyroid will be virtually destroyed in the procedure, and you will have to take thyroid pills for the rest of your life because the pills will take the place of the hormones your thyroid gland is no longer making, so your metabolism is still in the correct sequence. This is important for consumers out there that have thyroid conditions and are looking for different treatment options. If they read this one and don't like it maybe they could look into other types of treatment.

- **Web site #2 Name: Nation Endocrine Disease Center**
- **Web address:** <http://www.endocrine.niddk.nih.gov/pubs/pregnancy/>

- **Summary of the information:**

Some interesting facts I learned while doing my research is that the amounts of hormones in a woman are greatly affected by pregnancy. This is true because during pregnancy human chorionic gonadotropin and estrogen increases thyroid hormone levels in the blood. The Thyroid gland usually enlarges slightly in a healthy woman's pregnancies but not enough to be detected by a doctor. The mother's thyroid hormone is a critical part of normal development of the baby's brain and nervous system. Around 10-12 weeks the baby's thyroid starts to function on its own and gets its own supply of iodine through the mother's diet. The mother needs more iodine when they are pregnant, about 250 micrograms a day. About 7 percent of the women in the United States don't get enough iodine in their diet. Consumers, especially women should take note that they must be careful of their thyroid during pregnancy because it's very easy for a doctor to miss if there is a problem with it. The most important part for pregnant women to do is to make sure they are getting enough iodine to support the newborn baby's thyroid gland.

- **Web site #3 Name: National Cancer Institute**
- **Web address: http://planning.cancer.gov/disease/Head_and_Neck-Snapshot.pdf**
- **Summary of the information:**

The frequency of thyroid cancer has been on the rise in all races and in both sexes, male and female in the past two decades. (SEER) Thyroid cancer occurrence is three times higher in females than in males, and two times higher in whites than African Americans. Even though there has been a rise in cases the death rates have remained low. With thyroid cancer on the rise, the American Cancer Institute believes it will spend 3.2 million annually on cancer prevention and treatment each year.

Section 5: Solutions to the Problem (or Issue):

- **Web site #1 Name: American Thyroid Association**
- **Web address: <http://www.thyroid.org/about/pressroom.html>**
- **Summary of the information:**

The American Thyroid Association was founded in 1934 and is a professional group of 900 plus U.S physicians and scientist who focus their careers around the research and treatment of thyroid diseases. They are dedicated to promoting scientific research and public understanding to improve methods of prevention, diagnosis and management. The ATA is leading in promoting thyroid healthcare, and is the leading organization completely focused on thyroid biology, and the treatment of thyroid disorders. Over the past 40 years the ATA has been able to accomplish: Cost effective methods to detect thyroid cancer, an experimental drug that can prove useful for treatment and eye problems associated with Grave's disease, and mandatory screening of

newborns to make sure their thyroid is working properly and to make sure they are not at risk of hypothyroidism.

- **Web site #2 Name: The Hormone Foundation**
- **Web address: <http://www.hormone.org/Thyroid/lifestyle.cfm>**
- **Summary of the information:**

The Hormone Foundation is a source of health information for the public, doctors and media about hormones and the endocrine society. Their mission is to provide a quality resource for promoting the prevention and treatment of hormone-related conditions through education. The foundation tries to work directly with society to translate science for the benefit of patients with endocrine disorders. It promotes awareness through its Web site, free educational materials, medical meetings and media education campaigns. It's promoting and helping the public by using the information that is garnered from doctors and scientist, they use these tools to help the raise public awareness and to help individuals recover from their own cases of thyroid disorders.

Conclusions:

I learned a lot by researching thyroid disorders. At first I only knew that if you had problems with your thyroid you usually were going to gain weight. Now I know a lot more such as what diseases it causes such as hypothyroidism, hyperthyroidism, thyroid cancer, and Grave's disease. I learned all about the treatments and what is out there for cases. The most important thing I learned was that this type of cancer is on the rise and that women are two times more likely to get this disease. I hope my audience was able to take away knowledgeable information and will now know more about the disease and now will be able to know if they have a disorder or not.

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