



THYROID EYE DISEASE AND ITS HEALING

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THYROID EYE DISEASE AND ITS HEALING

**(GRAVES' EYE DISEASE, OPHTHALMOPATHY,
EXOPHTALMOS)**

Natural cures, remedies and exercises to help your
bulging eyes, double vision, and protruded eyes.

This book is dedicated to all people suffering from Thyroid Eye Disease (Graves' Eye Disease, Graves' Ophthalmopathy or Exophthalmos).

Let this book be your path to healing.

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Why I decided to write this book?

It's been more than a year since my first book "Life Manual for Graves' Disease and Hyperthyroidism" was released. For that time I received 2 765 emails from people suffering from Graves' Disease or Hyperthyroidism, telling me about their symptoms, asking for advice or just saying thank you for the information. I also had nasty emails from people who were frustrated and who thought that my website was a hoax and I am one more person, who want to take their money. Gladly, they were just a few and the confusion usually was resolved after the first exchanged emails. Thank you for your honesty, it helped me to become a better person and to serve you better.

Most of the emails that I received were from people who had Thyroid Eye Disease and weren't able to find any cure for their condition whatsoever. This is the most painful question for many of us. Why? Because it's evident, everybody can see our starring, bulging eyes, people look with a strange expression on their faces and ask questions like "What is wrong with your eyes?", "Why are you looking like that?".

We don't know what to say. Because this disease hits our self-esteem, and the image we have in our minds for "how we looked before".

We can not hide our eyes. We can hide the palpitations, the sleepless nights, the muscle cramps, the weight loss (it's so socially acceptable to look skinny), and the other symptoms of our Graves' Disease, but we can not hide our eyes. This is the first thing that we see in a person. Our eyes are the doors to our soul. They speak for us even when we are speechless. But now we no longer look the handsome, beautiful men or women, we turn into a Quasimodo. We consider ourselves ugly and

unattractive, because, even today, unfortunately people will judge you first from your outside appearance and then for everything else.

When I had this disease I also had the starring eyes, my left eye was much bigger than the right one, sticking out of its socket, painful and swelling. I was feeling so miserable. I did not want to go out, to meet with friends, to go to parties or other events. I even did not want to go to my daughters PTA meetings or at her school because the kids would ask her “What’s wrong with your mom?”, or “She looks so ugly” and she didn’t know what to respond. You know kids are so honest, they don’t know how to be ‘kind” or “tolerant”.

This story is over now. Luckily, I have my both eyes the same now, as they were before. There is no difference and I am the same charming person (at least in my eyes as before). I don’t know what really helped me- I tried many things and I am still trying and researching, I never stopped. A few of the things which I know were helpful, I described in my book “Life Manual for Graves’ Disease and Hyperthyroidism”. They did help many people- according to their emails. But were not enough for others.

The emails I am still receiving from other people are filled with pain, frustration, hopelessness and desperation. And I personally know how much it hurts.

So I decided to put together more information, actually all the things that I tried and worked for me. I really hope that they will help you too.

In this book I tried to present the diagnosis, symptoms and classification of Thyroid Eye Disease. I also tried to present various methods for treatment- starting from Alternative methods, holistic approach and understanding of Thyroid Eye disease, Eye exercises, useful supplements and a list of tips which can help your condition. I tried them all. See which one works for you- may be one, or two, or a combination of

all. Finally, I tried to present all ‘modern” and purely “medical” methods for treatment- surgery, immunoglobuline therapy, corticosteroids, RAI treatment and radiation. All - to the best of my knowledge and research, even though I never tried them and can not speak from personal experience about them.

Please, use your own judgment and consult your ophthalmologist or other eye specialist before applying them. Every person is different and unique and thus requires a unique approach.

Good luck in the battle called Thyroid Eye Disease!

The Real Drama about Thyroid Eye Disease

Thyroid Eye Disease affects approximately 1 million people in USA and Canada and 250,000 people in the UK. Although blindness is a dreaded complication, fortunately only a small minority of patients require surgery or other medical treatment to protect their vision. The majority of patients with Thyroid Eye Disease however appear to suffer silently trying to come to terms with the facial disfigurement that is caused by the disease. It is particularly unkind, distorting the most expressive, vivid and ageless feature of the face, the eyes.

Believe it or not, the presence of this terrible symptom can change or affect your life dramatically. What I have seen, read and experienced on my own could be expressed with one word "horror". And I am not talking about a horror movie. It's a real one.

Many patients with Thyroid eye disease are unable to face the world, they don't want to look at the mirror any more and avoid social contacts as much as they can. Relationships break down, jobs are lost, depression sets in and life changes for the worse. These patients are really desperate, as I was, they are losing hope that they will ever get better and the consequences in their everyday life are simply severe.

Is there a way out? There is, I believe....Not only I believe, but I know too.

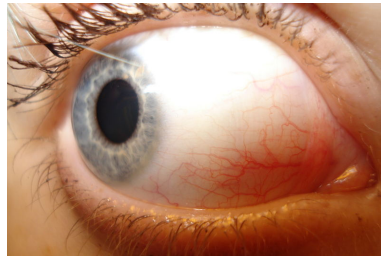
What is Thyroid Eye Disease?

Thyroid Eye Disease is an inflammatory condition which affects the orbital contents including the extraocular muscles and orbital fat. It is almost always associated with Graves' disease (GD) but may rarely be seen in Hashimoto's thyroiditis, primary hypothyroidism, or thyroid cancer. The ocular manifestations of Thyroid Eye Disease (TED) include soft tissue inflammation, eyelid retraction, proptosis, corneal exposure, and optic nerve compression.

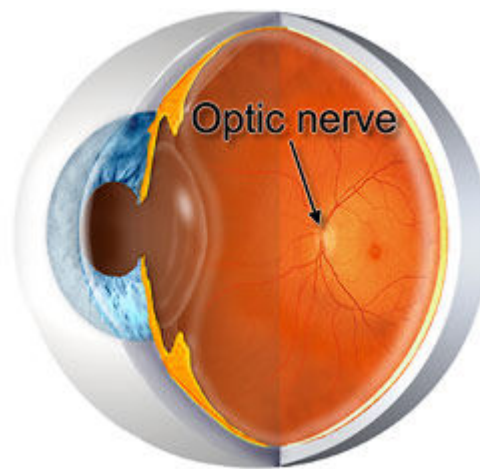


The signs and symptoms of the Thyroid Eye Disease are characteristic. These include lid retraction, lid lag, and a delay in the downward excursion of the upper eyelid in down gaze that is specific for TED. The inflammation and infiltration typically affect the muscles, fat, and the tissues that support the eye, the blood vessels and the nerves that serve the eye, and the eye lids. As muscles become more inflamed and enlarged, several things can happen:

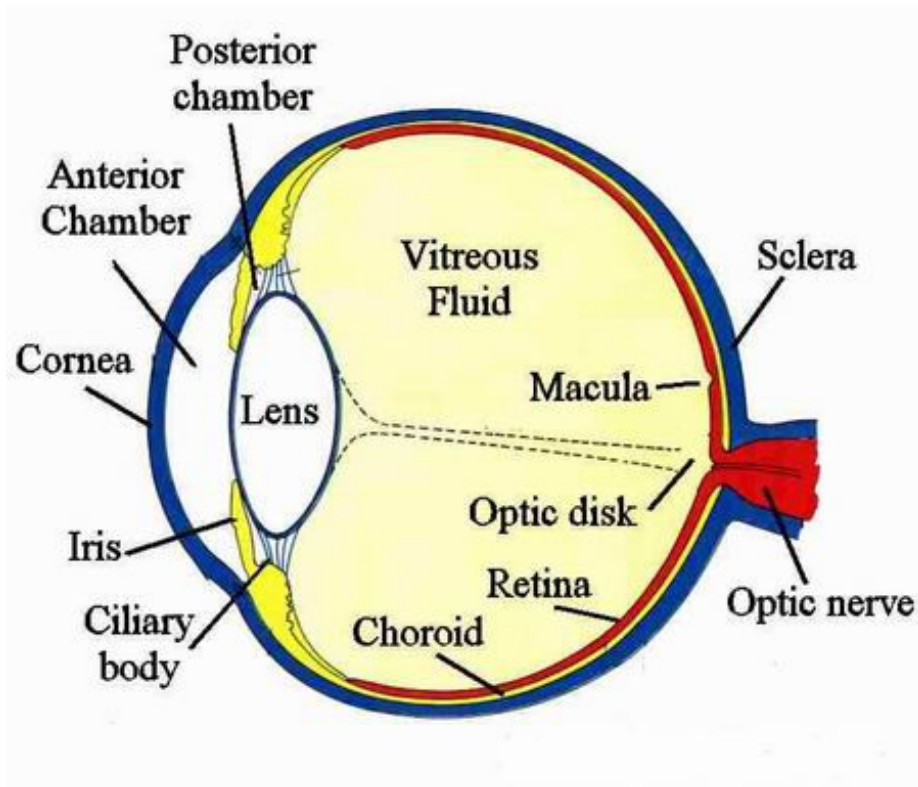
1. The eyeball gets pushed forward, causing proptosis and often a prominent stare.



2. The eye muscles may become stiff and they can't move as easily, which makes it harder for the eye itself to move, causing problems such as double vision.
3. The eye muscles may press on the optic nerve, which can interfere with vision.



The Eye Structure



Symptoms of Thyroid Eye Disease

The following symptoms should be considered when suspecting Thyroid Eye Disease
(the list may not be complete)

1. Bulging and protrusion of the eyes
2. Red, inflamed and/or bloodshot eyes
3. Dry eyes
4. Watery eyes
5. Stare in the eyes
6. Retraction of the upper eyelids, resulting in a wide-eyed look
7. Infrequent blinking
8. Lid- lag: when the upper eye lid doesn't smoothly follow downward movements of the eyes when you look down
9. Swelling of upper eyelids
10. Twitching in the eyes
11. Uneven motion of upper eye lid
12. Uneven pupil dilation in dim light
13. Tremor of closed eyelids
14. Eyelid puffiness
15. Inflamed cornea
16. Blurred vision
17. Sensitivity to light (photophobia)
18. Excess tearing
19. Decreased eye movement or discomfort
20. Exophthalmos (protrusion, exophthalmos, proptosis)
21. Eye pain

22. Double vision
23. Reduction of color brightness
24. Loss of peripheral vision
25. Excessive lacrimation
26. Palpebral edema
27. Photophobia
28. Increased Intra- ocular pressure
29. Keratitis and corneal ulcers
30. Lagophtalmos

Diagnosis and Classification of Thyroid Eye Disease

History. Elevation of the upper eyelids may occur in anyone with hyperthyroidism from any cause, any time the blood level of thyroid hormone (TSH) is under 0.3. For example, patients who are hyperthyroid because of too much thyroid hormone medication may have raised upper eyelids, causing their eyes to appear enlarger or staring. In this situation however, the eyes do not actually protrude.

There are a variety of ways to classify eye symptoms, but one useful system is known as NOSPECS. It is a six level classification of eye problem, as you can see from the following table:

Level	Class	Signs
0	N	No signs
1	O	Only signs are upper lid retraction and stare (may have lid lag and proptosis)
2	S	Soft tissue involvement (symptoms of excessive tearing, grittiness, pain behind the eye, light sensitivity, but no double vision)
3	P	Proptosis/ Exophtalmos (bulging) is significant
4	E	Extraocular muscle involvement (usually with double vision)
5	C	Corneal involvement
6	S	Sight loss (due to optic nerve involvement)

The “HOT” phase

If you have Graves’ Disease, you may develop protrusion and inflammation of your eyes without there being any evidence of infection. It is likely to begin about the time your thyroid becomes overactive, but it may precede your hyperthyroidism or occur years after your thyroid function has become normal. Very rarely, the eye disorder may occur without your having any obvious abnormality of thyroid function at any time in your life.

A “hot phase” is when the eye antibodies are active and changing the eyes. As the antibodies attack the eye muscles and if the tissues around your eyes swell with fluid causing the muscles to thicken and then the eyes to bulge- this is not due to thyroid gland’s overactivity. This is due to the autoimmune antibody process behind the eye.

More serious eye problems may occur in patients with Graves’ Disease and very rarely Hashimotos’ thyroiditis. The severity of these conditions is unrelated to the blood level of thyroid hormone, but more severe eye problems tend to occur in people who smoke cigarettes. If the condition is mild, you may have only redness and irritation of your eyes. On the other hand, in those rare instances when the inflammation is more severe, your eyes may protrude, you may have double vision and sometimes your sight may be threatened.

Patients, who had undergone RAI or surgery (subtotal thyroidectomy) may also experience thyroid eye disease symptom at any point after the above procedures.

Sometimes it may even happen years after that, or your eyes may get worse immediately after RAI. The cases are all different, and nobody knows the outcome.

I should mention here, that according to my own researches Thyroid Eye Disease does not necessarily progress in an orderly fashion from mild to severe in any given patient.

In fact, a rapid decrease in vision can occur as a result of pressure on the optic nerve in a patient with only minimal swelling of the eyelids.

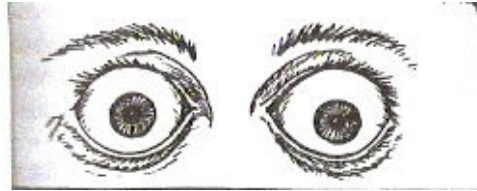
For this reason, if you have Graves' Disease, you should have a complete eye examination. If your eye involvement is severe, your physician should refer you to an ophthalmologist (eye specialist), who will have all the equipment needed to evaluate the various eye problems that may occur in Graves' Disease. Your vision can be accurately tested. The amount of eye protrusion can be accurately measured with an exophthalmometer. The corne and the other tissues of your eye can be examined by the use of a microscope like instrument known as a slit lamp. Ultrasound pictures of your eye and the eye socket (orbit) may be taken by use of sound waves in a technique similar to radar. Alternatively, your physician may request special x-rays of your orbits done by computerized tomography (CT scan) or by magnetic resonance imaging. These techniques will provide a clear picture of the inflamed tissues behind your eye.

Visual Diagnosis of Thyroid Eye Disease/ Graves'

Opthalmopathy

Graves' Opthalmopathy could be manifested in a few different ways:

Bilateral Retraction of Upper Eyelids



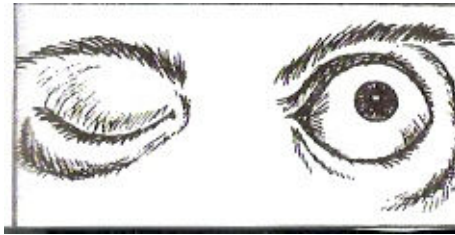
Periorbital Edema



Unilateral Upper Lid Retraction



Proptosis causing inability to close one eye



Graves' Ophthalmopathy (adapted from Werner and Ingbar's *The Thyroid, a Fundamental and Clinical Text*, 7th ed., edited by Lewis Braverman and Robert Utiger, Lippincott- Raven Publishing, 1996)

The Holistic Understanding of Thyroid Eye Disease

I have never been able to understand the “contemporary” medicine, which considers the human body and its parts as a car. If a part of this car is broken, we need to repair or change that part. However, I would not take the same approach to the human body. Human body is a whole thing and all “parts” in this body are connected, like it or not. Even though Thyroid Eye Disease is considered a separate disease and we know that it’s a consequence of Graves’ Disease or Hyperthyroidism, I would still ask and face the same questions- **Why me? Why my eyes? Why some people have it, and some don’t?**

I have always believed that understanding the “spiritual” meaning of any disease may lead to its healing. I have also learned that for every condition in our lives, there is a need for it. Otherwise, we would not have it. The symptom is only the outer effect. We must go within to resolve the mental cause. This is why willpower and discipline do not work. They are only battling the outer effect. But when the need for that condition is gone, the outer effect, i.e. the symptom will die too.

It is said that the eyes are mirrors of the soul. Our eyes represent the capacity to see clearly- past, present and future. Any eye problem is not liking what you see in your life. Every eye disorder therefore is an important message that clearly indicates you are not moving in the right direction, or in the direction of your soul’s purpose.

The left eye represents your internal view or your self image. It is influenced by what you have learned from your mother, as the left side of the body reflects the feminine aspect.

The right eye represents your external, or world view. Your perception of life is influenced by what you have learned from your father, as the right side of the body reflects the masculine aspect.

Understand that nothing will change in your life, especially if you refuse to see the truth. Rather than believing that you will lose something meaningful by seeing the truth, it is wiser and more beneficial in the long run to face up to it and address it as it happens.

When your eyelids are involved or suffering:

Eyelids are defined as either of the two folds of skin and muscle that open and close over the eye. They serve to protect the eye from external dangers as dust, particles, cold and light. Any problem with the eye lids indicate that you are not protecting yourself effectively from external forces, allowing yourself to be easily and overly influenced by what you see. It may be also, that you are so preoccupied with seeing everything that you do not allow yourself some necessary shut-eye, or time to rest and withdraw.

If you are experiencing irritation, understand that it is your perception of what is going on around you that is irritating you, not what is actually going on. If

you can't seem to tolerate what is happening with you or around you, take time to withdraw and rest. Once you are rested, you will be re-energized and empowered to do what you need to do, without demanding or having expectations of others. You will see with fresh eyes, from a more tolerant perspective.

As I already said, all eye disorders indicate a preference for closing your eyes to what is happening around you rather than to risk losing someone or something. It's a way to protect yourself. It's possible that you no longer want to keep an eye on things. Or you try to see everything around you in order to know what others need.

Many spiritual teachers say, that Eye ailments often accompany a time for you to have new vision about your life or a situation that you are currently presented with. I also have repeated many times, that you have to change your life style in general, in order your Graves' Disease and Hyperthyroidism treatment to be successful.

In order to find out what's really wrong, I need you to take a pen and answer the questions on the other page.

Nobody will see your answers, so be honest with yourself. This may be your passport to your healing, who knows? See, what needs to be seen, correct what needs to be corrected, change what needs to be changed. Don't be afraid to make mistakes, we are here to learn.

My questions for you:

What do you refuse to see?

What are you afraid to see?

What you don't like in your life now?

**If you could, and you know that there is no way to fail, what would
you change in your life?**

THYROID EYE DISEASE EXERCISES

The exercises I used seemed to help a lot of people and I collected them from different resources and tried them all during the years. I am still doing them. Besides my protruded eyes they helped also my astigmatism and my other eye problem – I was nearsighted. They all work and provide excellent results- no matter if you have protruded eyes, double vision, if you have astigmatism, or you are farsighted or nearsighted. These exercises are used in yoga practices, Tibetan culture and in accordance to Norbekov healing system. They are known to help the eye muscles, improve your vision, and help double vision, farsighted and nearsighted people and astigmatism. Results may vary, depending on your condition on how often you do them. But you will see results, for sure.

Do not force your eyes!

I would suggest doing this eye exercises while sitting with straight spine. While doing them- do not move your head, just your eyes. Once in the morning and once in the evening is recommended for best results (usually they won't take more than 10 min. total). Do not force your eyes too much. If these exercises are too difficult for you, do them 3-5 times at the beginning instead of 10 times. If you start feeling dizzy, stop and rest. After each exercise, close your eyes and rest for a few seconds. Even though these exercises are safe and easy to do, you may want to consult your doctor first.

Live water for your eyes

We all know that the water is not just water, it carries its own energy. If you haven't heard about "The hidden messages in water" by Masaro Emoto, it's time to learn more. Depending on where the water comes from, it forms crystals with different shapes and structure- which could be healing, or killing for our immune system. The procedures below are very safe and can be used to relieve the pressure and pain in your eyes. What you need is just purified water (not from the tap), and no matter how funny you may find it, pour the water in glass bottles (no plastic please) and just write with a permanent marker some simple nice words on the bottle- like "love", "thank you", "gratitude", "health" and whatever nice that comes to your mind. For even better results you can put first the water bottles in the sun for a few hours to "charge" them with solar energy (it's called solarized water). It doesn't cost a penny and you even don't have to believe it. Use this water for drinking (better keep in refrigerator), or for the following eye water baths:

Remedy #1

Eye Baths

As our Thyroid Eye Disease is an inflammatory condition (hot in its nature) I believe that I could be helped by cold remedies. The purified water must be first cooled in the refrigerator. Then pour the water in a small pot or similar vessel (a little bit bigger than your face). For 10- 15 seconds just place your face in the water, open your eyes and just blink. Raise your head from the water, keep blinking and then sink your face in the water again. Repeat this a few times, no need to put any records, water should not be freezing. That simple procedure gives an immediate relief, especially if you feel like your eyes are "burning", or contaminated.

Variation: Some of us can not sink their face in the water or keep their breath even for this short time. In these cases you can use special small eye cups, or cold spoons, or you can use your own palms just to put cold water on the eyes. The main rule you should keep in mind: water needs to be purified and cold, the eye contact is short and you should be convenient when doing the procedure. Duration: 15- 30 seconds.

You can repeat the above as many times as you feel like it during the day. No contraindications.

How this helps us and our eyes: The eye water baths have stimulating and energizing function. These baths also energize the skin around the eyes and face and make them look younger, especially if you have wrinkles and puffiness around the eyes. Also, when we sink our face in the water we'll stop breathing for a few seconds, but when we take out our face that will increase the oxygen intake to the head and the eyes, which is very important when healing the eyes.

Remedy # 2

Contrast eye compresses

You'll need two separate pots, or similar water vessels, not very big. The water in both vessels should be as contrast as possible. Paul Bragg (1895 –1976), nutritionist and a pioneer in America's wellness movement) for example recommends putting ice blocks in one of the vessels. But you don't have to- just put the water from one of the vessels to cool in the refrigerator.

Start with the hot water (not very hot so you won't burn your eyes) - soak cotton balls, or handkerchiefs in the hot water and then put them on closed eyes for 2

minutes. Change with cotton balls from the cold water- for 1 minute. Then dry the skin and eyes with a towel.

From my personal experience I can say that the cotton balls are less effective- they get cold or warm quicker. For that purpose I use small towels- in this case they will cover also the nose and the skin around the eyes. Very good effect for puffiness, dark circles and wrinkles, trust me.

For the same purpose you can use small tea packs (as sold in the food store). I have that described later in the book with chamomile cold compresses.

Remedy #3

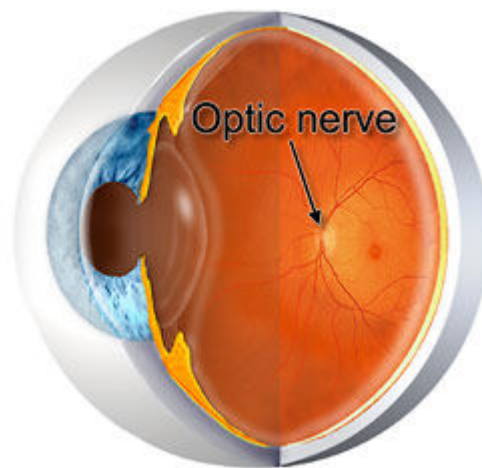
Solarization therapy/ Phototherapy

As we all know, if you have Thyroid eye disease (TED) your eyes will be very sensitive to any light. In fact, I recommend wearing sun glasses when it is very sunny. However, it's been proven that exposing your eyes to "a safe sun" can have very good effect on eyes. When is the sun safe? These are the hours just at early sunrise or late sunset, with the time depending on the season. I personally prefer the sunset (can not wake up so early for sunrise) and without knowing anything about this phototherapy I have used it many times in my healing intuitively. Years later I have researched the subject and I found a lot of information about this therapy.

Dr. Jacob Liberman, an American scientist has written 3 books on the subject. He received a Doctorate of Optometry in 1973 from Southern College of Optometry, a Ph.D. in Vision Science in 1986 from The College of Syntonic Optometry and an Honorary Doctorate of Science in 1996 from The Open International University for Complementary Medicines. His book is called "Light Medicine of the future" and generally claims the following: Dr. Liberman says that when the sun beams go

through the optic nerve it will bifurcate. The first part will go to the brain and then form the visual image (any image that you look at right now). The other part will go to the hypothalamus, connected with the nervous and endocrine system (thyroid is part of the endocrine system). Due to the hypothalamus we maintain the blood pressure, the body temperature, and the heart rate at certain levels, because of the hypothalamus we feel fear, joy or happiness. Inside the hypothalamus there is a double twisted (curved) lens- the epiphysis. Coming through this lens the light will decompose into the colors of the solar spectrum and goes to the inside body organs and systems. It is considered that the insufficiency of certain colors from the solar spectrum inside the body leads to certain diseases and illnesses.

If the insufficiency of light can cause certain diseases, then the presence of saturated light can also lead to healing.



There are 3 phases for solarization treatment, do not skip any of them, if you want to try this remedy.

Phase #1

Step at the edge of a solid shadow. Let one of your legs be in the shadow and the other in the sun. Stay stable, feet slightly spread. Take off your glasses, close your eyes and lift your head towards the sun. Eyes closed! Then start turning your head very slowly left and right, so your face and your eyes to be exposed correspondingly to shadow and sun. Repeat a few times, every day for a week, until you feel comfortable.

Phase #2

This one may take longer to master, sometimes a few weeks. Face up to the sun, eyes closed, feet spread up so you can keep a balance. Turn your head slowly left to the right, and you can repeat- "Sun comes from the right and sun goes to the left (or however your position is). Repeating the phrase is not mandatory, it just can prevent you from losing balance and getting dizzy.

In fact, all these exercises can be performed while sitting, you don't need to be standing.

Phase #3

Watch late (I mean LATE!) sunset/ early sunrise for 10-15 seconds. Not more. You can increase the seconds everyday. If you feel uncomfortable doing phase #1 and phase #2 to whatever reason during the day, do them early in the evening when the sun is not so strong. While watching the sunset- blink, as many times as you feel comfortable. Blinking helps if you are also shortsighted or longsighted.

Precaution: You should not look at the sun directly at any circumstances, especially when it's in the zenith.

It really works and it's free, but don't over do it.

[If you at any point feel uncomfortable doing the above exercises- stop, or do the “Palming” exercise \(see below\).](#)

It is not mandatory to do phase 3 after phase 1 and 2. It depends on how you feel.

“Candle” Exercise

This one is very simple and the only requirement is to have a candle. Light the candle up, sit comfortable and focus on the light, just watch the candle burning. Do that as long as you can, usually about 20-25 minutes. This exercise is used also as a form of meditation and in yoga practices, but it helps you also to relax your eyes, your breathing and your soul.

“Palming” Exercises

This is the most popular and well known for centuries technique for calming and relaxing the eyes. It's first officially described by William H. Bates.

William Horatio Bates (1860 –1931) was an American physician who practiced ophthalmology and developed what became known as the “Bates Method” for better eyesight. One of the exercises included in his “Bates Method” is exactly the “Palming” exercise.

“Palming” is actually artificial darkening of the eyes with the help of your palms. Simple as that. Palms and hands are used in Reiki, in a similar position. It's practically giving energy to your eyes. So how we do that:

First: Rub up you palms/hands for a few seconds, so the friction can warm them a little bit. Then put your fingers next to each other, so there is no light coming between the fingers. There are 2 options here. You can cross the little fingers, or you can use the Reiki style, however you feel comfortable. You can sit on a chair and put your elbows on the back of the chair to support them, or you can choose another position, just rest your elbows. You can also lie on a bed, but you'll need some pillows under your elbows, or any other position you feel comfortable with.

Your back and neck should be in one line, do not bend them in any direction. Breath deeply a few times, relax your torso, and your hands, no pressure should be applied on the eyes, eyebrows or head. See examples below.



The most important here is your mental condition- during this palming exercise you should not worry about anything, try to relax to the best you can. If you are not able to- postpone for other times. You can also use any relaxation music, or aromatherapy candles/sticks. Anything that helps you to relax.

The exercise should last at least 10- 15 minutes, the longer the better. Anytime you feel your eyes are tired. You can do it as many times daily as you want, at least twice. There are no contraindications.

The essence of Palming exercise

The healing properties of this exercises come from the darkness and the black color, which is created by closing your eyes and putting your palms on. If you can not get the “black” color, but instead you see lights, blinks, circles, grey shadows and forms, other colors- that means your visual center in the brain is too agitated, stressed and arduous. Relieve the pressure and relax. You can help yourself with your imagination- imagine black curtains or blinds, black ink or any other “black” association that comes to your mind.

If you are not successful with the black color, or it depresses you, than try to imagine a beautiful picture, the park, a forest, the sea, a nice memory from your past, something that gives you a nice, relaxing feeling. It will do the job.

Etheric/ Virtual Eyes Exercise

This is a variation of the palming exercise and it’s created by a Russian follower of William Bates called I. Afonin from Cherepovetz.

Imagine that your etheric/ virtual eyes are just in front of you. Imagine your eyes in front of you, to be more specific. They are just sitting in the nothingness in front of you, they are not attached to anything and can move freely in any direction. These eyes can go further left, right, diagonal, they can go in different direction- one of them to the right, the other up to the left. They are not connected. One of them can do circles clockwise, the other counterclockwise; one can come closer to you, the other far away from you. Only your imagination can limit their movements, as they are product of your fantasy, and can be controlled only by your thoughts and imagination. This exercise is very useful for people with severe eye problems and double vision, as they may have difficulties doing any eye exercises at the beginning, or closing their eyes at all.

Now- these are your eyes, imaginary, virtual- but yours. Take a close look at them, check the condition of the iris, the eye muscles, the retina, the optic nerve. Clean them, caress them, feed them with color, fluids and nutrients, whatever they need to feel better. Then wash them with cold water. And finally take them and put and connect them with your real eyes.

This, as you can see, is a type of visualization exercise and we all know that visualization works even for cancer patients. Why not for Thyroid eye disease? This method is used also in psychotherapy, called “our second body”, especially with people who have body- mind issues. By using this exercise you are not becoming “crazy”, it’s just a method for healing your eye problems.

Variation for Palming exercise

I do this exercise when I have to relieve the pressure from the eyes very quickly, or you can do it also before the palming exercise.

Eye Exercise #1

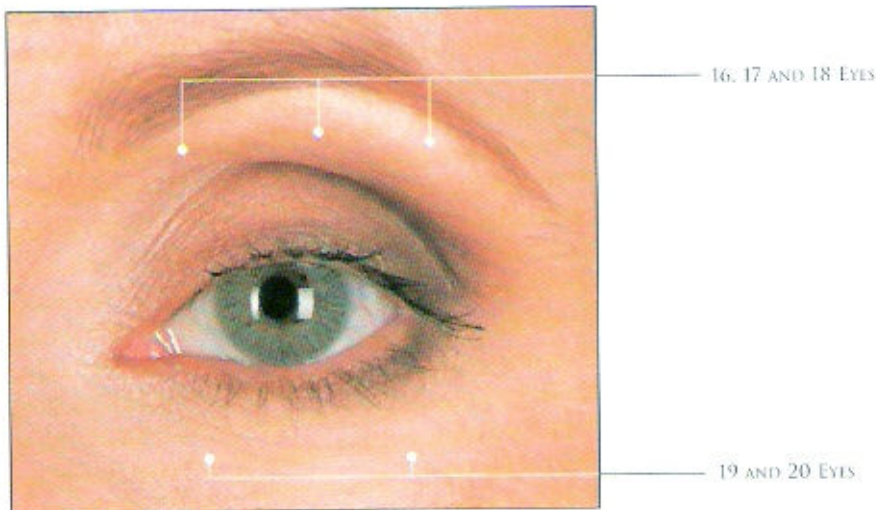
1	Put your palms to cover your both eyes
2	Press your palms against your eye balls and hold for 10 seconds
3	You may feel some pressure, but keep your hands tight
4	Remove your palms and open your eyes wide, like you are staring at something
5	Repeat at least 10 times per day to relief the pressure in your eyes.

Eye Exercise # 2

This is not actually an exercise, but it is sort of massage, which helps the eye muscles and relieves the pressure in your eyes.

Starting at the point on the top of the corner of the eye and working in an outwards direction, gently press on the eye reflex points. Gently press on each reflex for 2 or 3 seconds, and then move on to the next point. As you move around the five main points, lightly touch the skin in between each reflex.

Do not press too hard or use a circular motion, as the skin around the eye is extremely delicate. Work from the top inside corner of the eye to the outside top corner, and then from the bottom inside corner to the outside bottom corner.



Wake up you Right Brain Hemisphere

The right hemisphere is responsible not only for our creativity and imagination, but also for our eyes and our vision. That's why it is very important to develop this part as well, no matter how unrelated it may sounds to you.

These are some short exercises you can use to help boosting your creativity:

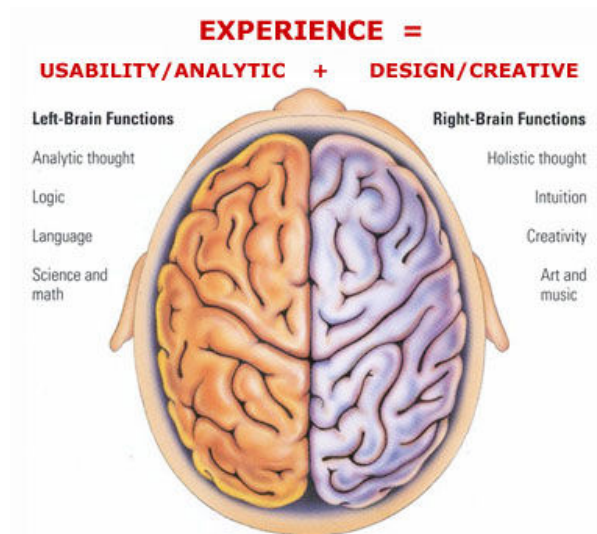
1. Exercise #1: With what do you associate a perfect vision, perfect condition of your eyes? (Examples: eagle eyes, panther vision, clear spring water, beautiful spring day, bright flower etc.)
2. Exercises #2: Describe that image in details- (Example: My image is a clear and transparent lake. I can imagine my eyes as two big, deep, clear and transparent lakes. I love my eyes. My precious eyes can see very clearly, as the sun beams come through them. They are relaxed and calm). You can choose the image of a flower, or a plant, a tree- just find a way to connect them with your vision or eyes. If you can not start writing and nothing comes to your mind, try with your left hand (if you are right handed) and vice-versa. You'll be surprised how creative you can be and what hidden abilities you can unlock. And this is our purpose- to unlock creativity and re- develop the right hemisphere.
3. Everyday try to describe of your emotions throughout the day in colors.
4. De-code your initials with bright, positive adjectives and epithets. (Example, my initials are S.G.B.- I am:

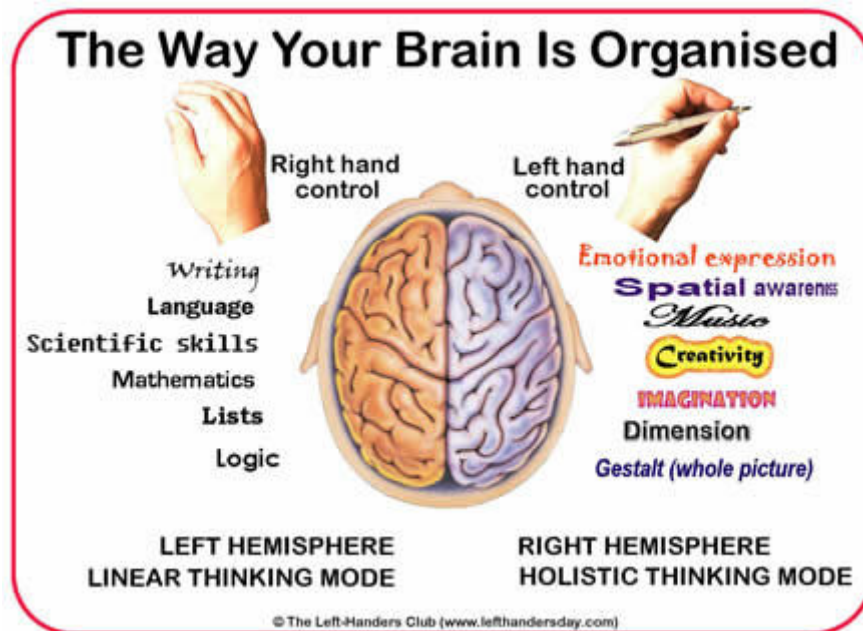
S: Special, smart, spontaneous, sunny, supernatural, seductive, sexy, sweet, skinny, stylish, sensual, sincere, sophisticated, sporty, strong, spectacular, sensitive, social, successful, smiley, shiny, strange, serious, sincere....

G: Goodhearted, graceful, good-humored, good-natured, generous, gentle, gallant, gifted, glowing, good, glorious, grateful, gracious, genuine, gorgeous, girlish, green...

B: Brilliant, brave, best, believable, blue-eyed, blessed, blissful, beautiful, brainy, blazed, benign, bright, balmy, beaming, bashful, benevolent, beneficent, bold...

It's funny, isn't it? But this boosts our creativity and also boosts our self-esteem. Try and see what you can come up with.





Training your eyes

Eye Exercise # 3

Close your eyes and hold your eyelids tight (3-5 seconds), then relax your eyes and the muscle around them for 3-5 seconds. Repeat 7-8 times.

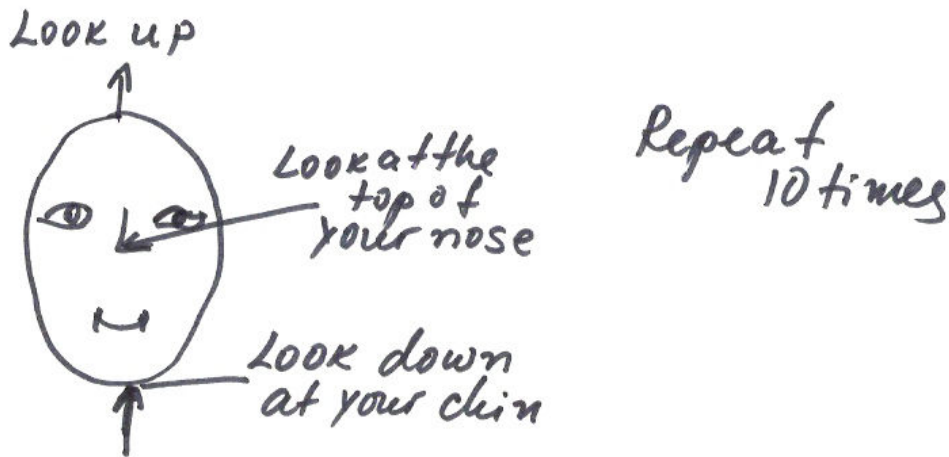
Eye Exercise # 4 Butterfly Wings

Blink. Just blink, without any pressure or forcing your eyes for 1-2 minutes. Imagine that your eyelids are like butterfly wings.

Eye Exercise # 5

- 1 Find a focal point on the wall or a subject that is in front of you
- 2 Concentrate and hold for 5 seconds
 1. Move your eyes and try to look up as there is something on the ceiling- do not move your head- just your eyes. Concentrate and hold for 5 seconds.
- 3 Try to look at the top of your nose- hold for a few seconds
- 4 Move your eyes down and look at your chin –hold for 2-3 seconds
- 5 Repeat this exercises 10 times
- 6 Close and rest your eyes for a minute before the next exercise

I am not a big painter, but with the help of my daughter I tried to draw a picture of the eye movement.



Exercise # 6

1. Roll your eyes slowly, all the way around, clockwise, in a circle trying to make them work together and exercising your eye muscles. Do 10 circles.

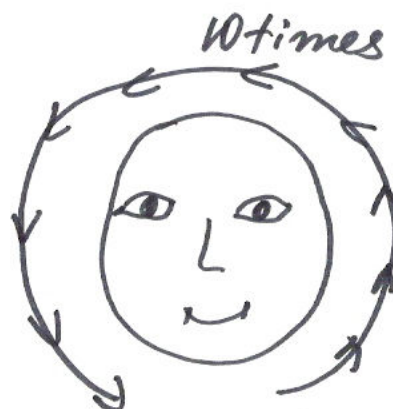
2. Roll them in the other direction, counter clockwise. 10 circles.

Please do both exercises very slowly, without forcing your eyes. The key is repetition of these exercises, not how far they can go.

Close your eyes for a few seconds before the next exercise.



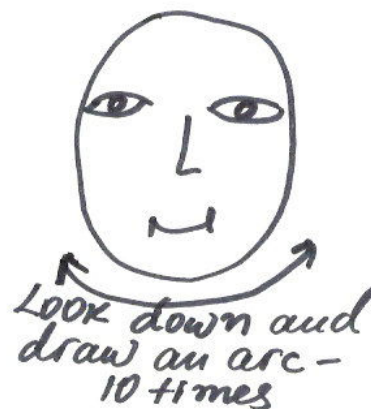
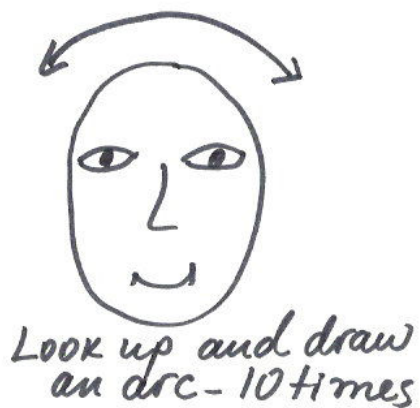
10 circles clockwise



10 circles
counter clockwise

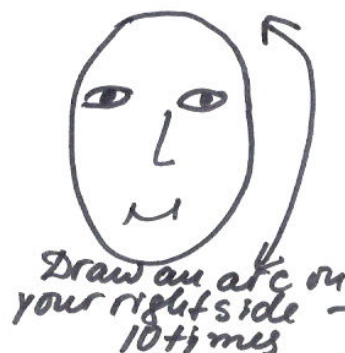
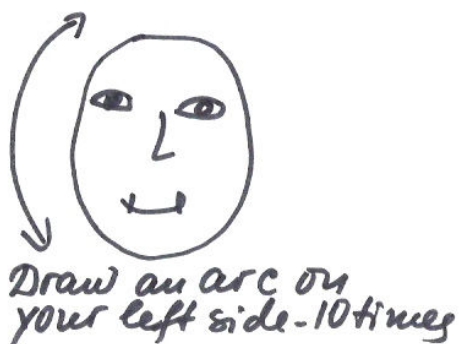
Exercise #7

Imagine that you are drawing an arc, which is located on your forehead. Then imagine that you are drawing an arc under your chin. Repeat 10 times for each direction.



Exercise # 8

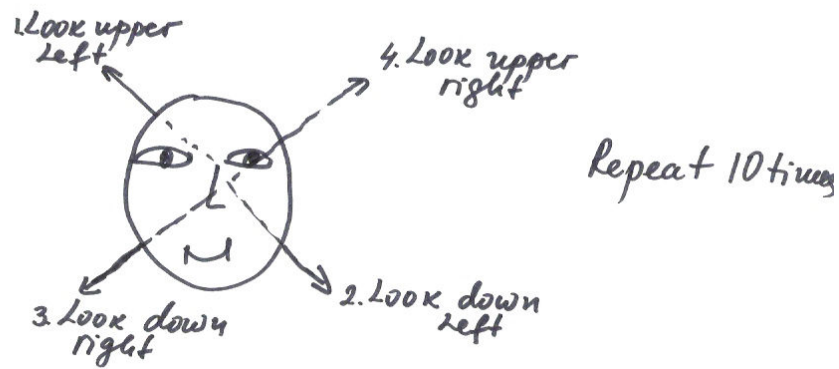
Imagine that you are drawing an arc again, this time located on your left side. Then imagine that you are drawing an arc on your right side.



Exercise #9

Your eyes wide open. Look all the way to upper left. Look all the way lower right.

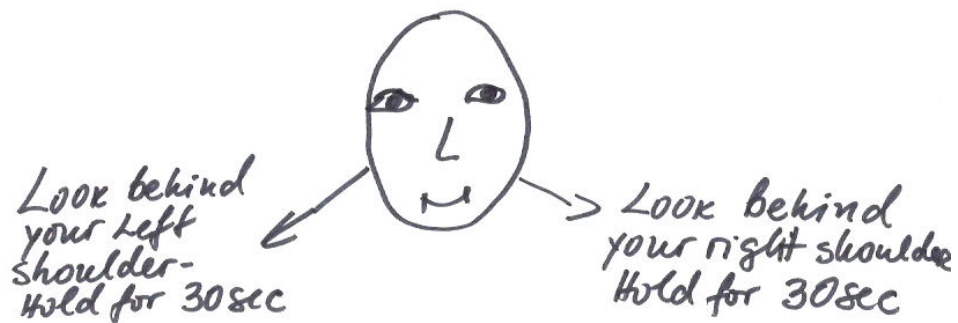
Repeat 10 times then close eyes and rest. Now look all the way to upper right. Look all the way lower left. Repeat 10 times then close eyes and rest.



Exercise #10

Try to look behind your left shoulder without moving your head. Hold 30 seconds.

Now try to look behind your right shoulder and hold for about 30 seconds.



Exercise # 11

With your eyes try to draw an imaginary number 8.



Draw Number
'8'
with your eyes

10 times

Exercise # 12

1	Close your left eye (or put your hand on it)
2	With your right eye start drawing imaginary numbers from 1 to 10
3.	Close your right eye
4	Repeat the exercise by drawing imaginary numbers with your left eye
5	Do that with both eyes altogether

Exercise # 13 Focus practice

Hold up one finger in front of your nose and focus on your finger print. Then look out the window and focus on the horizon. Repeat 4 times and then close eyes and rest.

Exercise # 14

Writing with your nose

This exercise is very useful for people who work on a computer or desk all day long. The problem here is that sitting in one and the same position for a very long time also “blocks” the neck and the head- and that creates pressure for the eyes as well. So now- close your eyes and start writing with your nose- your name, a sentence or whatever comes to your mind. That immediately will relieve the pressure of the neck and also your eyes will rest at the same time. Not to talk about your brain, concentrated on the sentence, which you are trying to write with your nose. Do as many times as feel needed, at least 3 times daily, 1-2 minutes each time.

Chamomile Cold Compress for Puffiness/ Dark Circles

This one is my favorite- and you can use it for many purposes, including cosmetics for your eyes. Chamomile is used often to reduce swelling, puffiness, and “burning eyes”. I had tried that and it has a very calming effect on irritated eyes:

Chamomile Cold Compress

For this compress make a regular chamomile tea, refrigerate, and then soak a piece of clothe (could be a small towel), put on your eyes and leave it on your eyes for 15 minutes. For best results you can apply morning and evening.

REFLEXOLOGY for Thyroid Eye Disease

Self- help

Reflexology is a technique of diagnosis and treatment in which certain areas of the body, particularly the feet, are massaged to alleviate pain or other symptoms in the organs of the body. It is thought to have originated about five thousand years ago in China and was also used by the ancient Egyptians. It is introduced to Western Society by Dr. William Fitzgerald, who was an ear, nose and throat consultant in America.

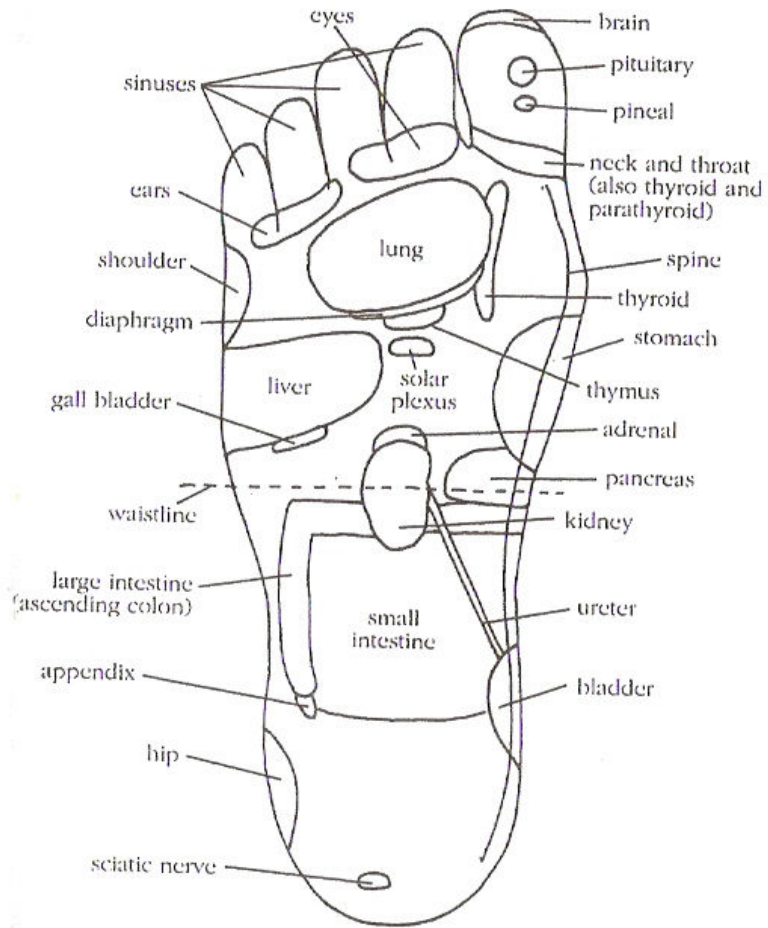
Reflexology does not use any sort of medication- merely a specific type of massage at the correct locations on the body. The body's energy flow is thought to follow certain routes, connecting every organ and gland with an ending or pressure point on the feet, hands or another part of the body. When the available routes are blocked, and a tenderness on the body points to such a closure, then it indicates some ailment or condition in the body that may be somewhere other than the tender area. The massage of the particular reflex points enables these channels to be cleared, restoring the energy flow and at the same time healing any damage.

Since your eyes are affected, if you have Thyroid Eye Disease, I would suggest seeing the specific points on your hands and your feet and try to massage them by applying a little pressure on them. The good thing is that you can do that almost anywhere, especially on your hands- if you are in traffic, or if you are watching TV. I found massaging these points to have a soothing effect and to bring a muscular and nervous relief. Some practitioners believe that stimulating of the reflex points leads to the release of endorphins. Endorphins are compounds that occur in the brain and

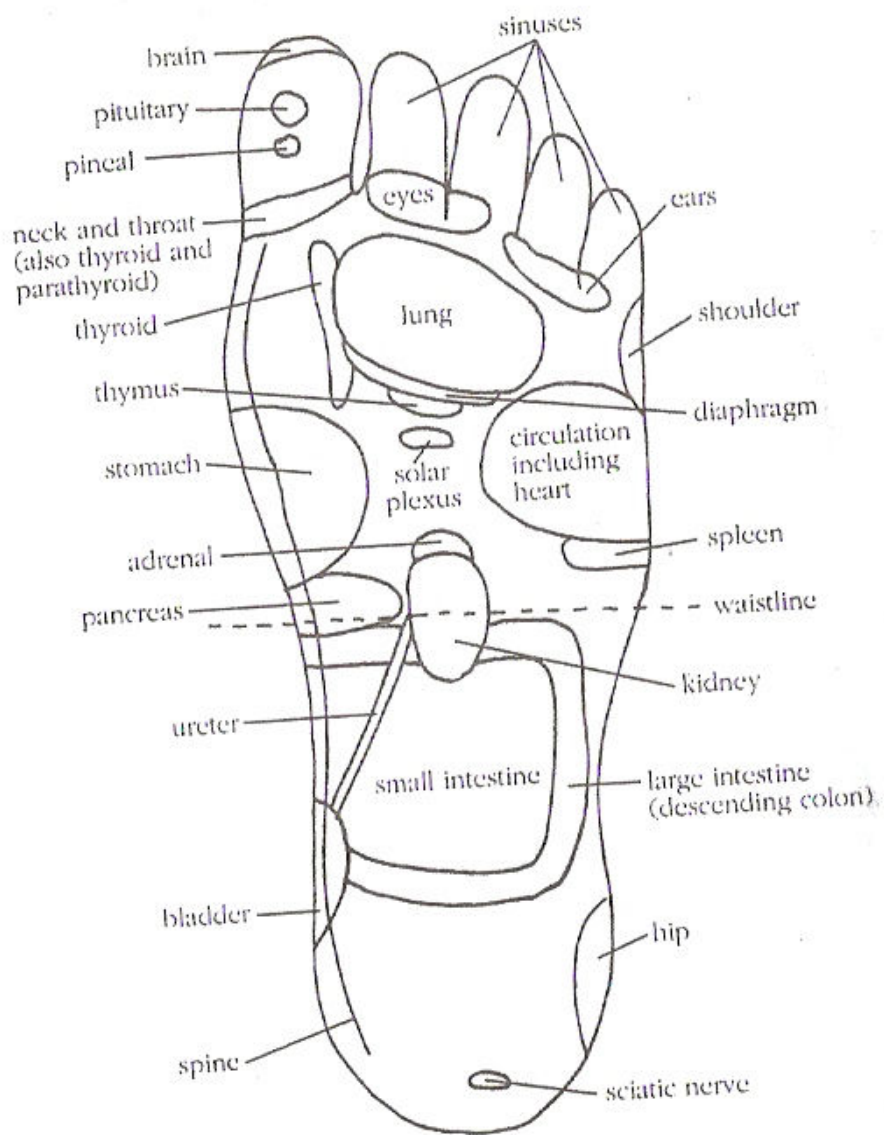
have pain- relieving qualities similar to those of morphine. They are derived from a substance in the pituitary gland and are involved in endocrine control.

The hands are considered to have an electrical property, so that the right hand palm is positive and the left- and palm is negative. In addition, the right hand has a reinforcing, stimulating effect while the left has a calming, sedative effect. The back of each hand is opposite to the palm, thus the right is negative and the left is positive. This is important when using reflexology because if the object is to revitalize the body and restore the energy flow that has been limited by a blockage then the right hand is likely to be more effective. The left hand, with its calming effect, is best used to stop pain. You can find the eye points at the pictures below. Massage the reflex points for your eyes in a clockwise direction.

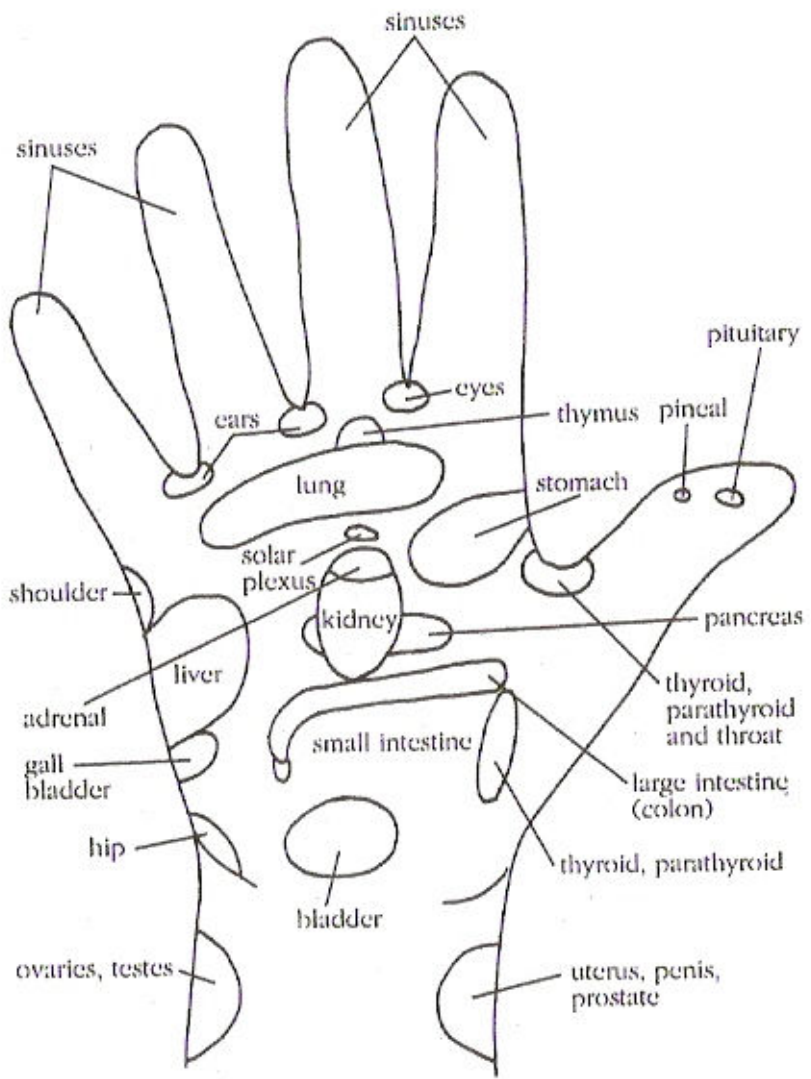
Reflexology



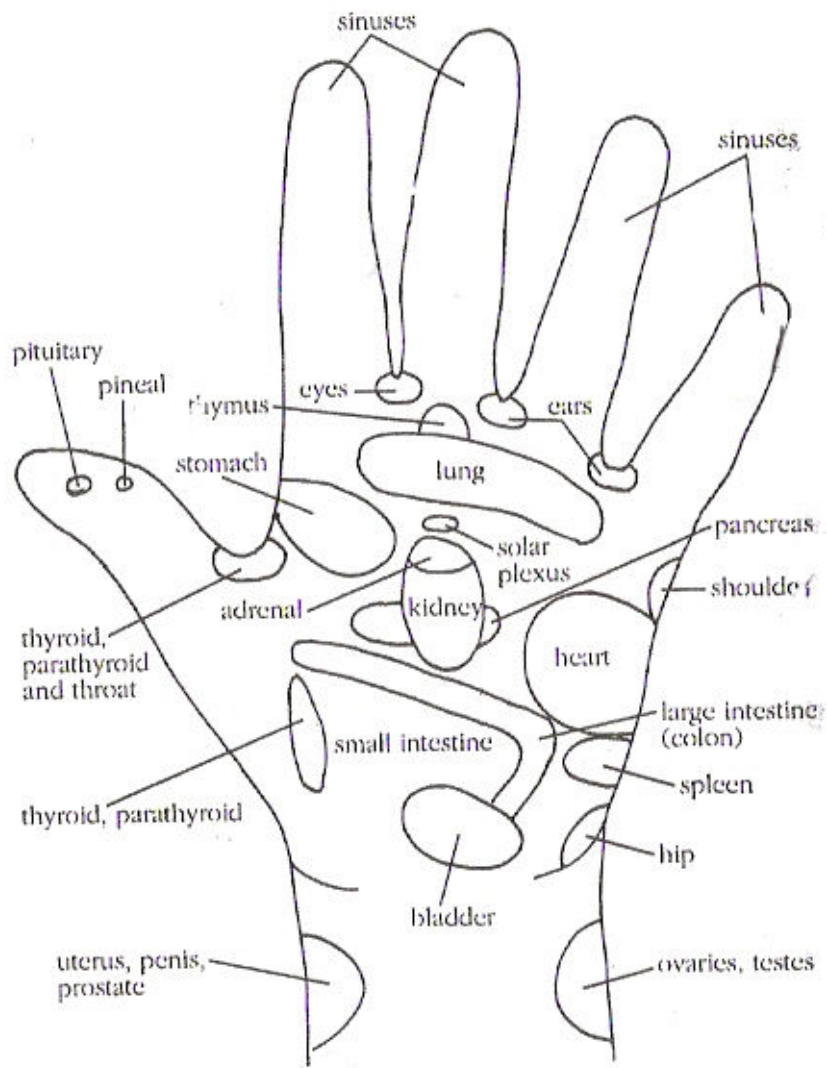
Major reflex points on the sole of the right foot



Major reflex points on the sole of the left foot



Major reflex points on the palm of the right hand



Major reflex points on the palm of the left hand

Of course, the best option for you will be to use the services of a specialist-reflexologist, but many people find that expensive and time consuming. Generally speaking it's a safe method for self treatment, but if in any doubt, please, consult a specialist first.

Vitamins and supplements for TED

Flax Seed Oil for Thyroid Eye Disease

Flaxseed oil is the most abundant plant source of omega-3 fatty acid, alpha-linolenic acid omega-3. The seeds and oil of the flax plant contain substances which are known to promote good health. Flaxseed and flaxseed oil are rich in alpha-linolenic acid (ALA), an essential fatty acid that appears to be beneficial for a lot of diseases. ALA belongs to a group of substances called omega-3 fatty acids. Flax seed oil is good for: Circulatory System, Immune System, Reproductive System, and Nervous System.

There are a lot of reports that it can help your Thyroid Eye Disease and practically you can see results in 1 or 2 weeks. It literally helped thousands of people in last 7 years, as reported in their emails. The recommended dose is 2 capsules (1000 mg each) 3 times daily (as directed on the label). You can find Flax seed oil in any GNC or Natural Store. You can also add flax seeds to your salad and just sprinkle them. Do not over dose this trying to achieve faster results, because you can intoxicate yourself. The other option is Fish Oil, some clients say that it's helpful as well, but I never used that as a remedy. Below you'll find also another option, which I tried recently and it works great.

The following is a recipe for a Smoothie, if you don't like the taste of Flax Seed Oil. Pineapple juice is something that I learned from one of my clients from Australia- she says

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that nothing “pulls her eyes back” as a glass of pineapple juice- if possible fresh juice. That is the other reason pineapple juice is included in my recipe here.

Recipe for Flax Seed- Pineapple-Strawberry Smoothie

- 1 1/2 cups chilled pineapple juice
- 2 tablespoons Flax oil thyroid eye disease, graves' ophthalmopathy
- 4 tablespoons yogurt
- 10 frozen strawberries
- 3-4 ice cubes
- In a blender, combine ingredients in the order listed and puree to a smooth consistency, adding ice cubes as needed. Pour into a tall glass and enjoy!

A Green Cure For Disease? Healing properties of Aloe Vera.

My Aloe Experiment

As you already know I am experimenting a lot with all kinds of natural products, and I am a “one man” laboratory. One of the products that I found very useful for my general health, not just symptoms of Graves’ Disease and Hyperthyroidism is Aloe Vera (the drinking gel, Aloe Vera supplement and vitamins, and last but not least Aloe Vera cosmetics)- and out of all the products I’ve tried in the “Aloe Vera family” I trust one company, Forever living products. I’ve been using their products for the past few years, just as a matter of experimenting and I find them outstanding.

As you may know there are many plants which help cure illness and fight disease found all over the world. Many of these medicinal plants are thought to be

rather exotic, however many can be grown right in your backyard or even inside your home!

The Secret Leading Cause of Dis-Ease Solved

Did you know that nearly every known dis-ease is caused from inflammation? Including our Hyperthyroidism and Graves' Disease, not to mention Thyroid Eye Disease...

It just so happens that the ancient Aloe Vera plant has turned out to be one of the most extraordinary anti-inflammatory plants in all of creation.

Apparently no matter what started your inflammation and pain, the natural ingredients within Aloe Vera is bursting with anti-inflammatory ability *plus all this is based on real science to back it up*. Aloe Vera is about 99% pure energized water "*intelligently designed*" by Mama Nature to contain more than 75 key ingredients including vitamins, minerals, enzymes, amino acids and miracle super sugars. If you are looking for a simple way to improve your overall health and well being, including your immune system, Aloe Vera provides you with a potent smorgasbord of helpful cellular nutrition.

Let aloe surprise you as it:

- Cleanses and supports your digestive system
- * Infuses you with energy
- * Hydrates your skin
- * Soothes and promotes skin renewal
- * Supports your immune system
- * And so much more

- Aloe Vera Vitamins: Vitamin A, Vitamin B1, B2, and traces of B12, Choline, Vitamin C, Vitamin F and Folic acid (B9).

- Aloe Vera's Minerals: Calcium, chromium, copper, iron, potassium, sodium, magnesium lactate³, manganese and zinc.

- Aloe Vera's Enzymes: Amylase, lipase and an anti-inflammatory carboxypeptidase.

- Aloe Vera's Amino Acids: Aloe Vera gel provides 20 of the 22 necessary amino acids needed by your body to create protein and seven of the eight "essential" amino acids which the human body cannot make.

-Aloe Vera's Immune-Modulating Miracle Super Sugars: Glucose, mannose and gluco-mannans.

Scientists are amazed by how important Aloe Vera's potent nutrients are to human cell health. In fact your skin, sinus, mouth, throat and digestive cells benefit greatly from bathing in the healing properties of Aloe Vera. Leading biologists agree when your cells are happy, then your tissues, organs and body systems are also happy. By simply feeding your cells with Aloe Vera the overall strength of your immune system is noticeably increased.

There is a treasure chest of award winning research on the healing benefits of Aloe Vera worldwide being published in peer-review and medical journals every year.

Here Are 7 Indisputable Health Perks of Consuming Aloe Vera Regularly:

1. Aloe Vera Contains Powerful Anti-Inflammatory Plant Sterols- like steroids but safer, plant sterols actually promote rapid tissue repair, unlike steroids which slow tissue repair.

2. Aloe Vera Neutralizes Inflammation Chemicals- One of Aloe Vera's enzymes is an anti-inflammatory carboxypeptidase, also called "*brady kinase*." This stops a notorious chemical pain trigger called bradykinin dead in its tracks.

3. Aloe Vera Has Natural COX-2 Inhibitors- Millions of people take drugs that are called COX-2 inhibitors that have harmful side effects. Aloe Vera inhibits the COX-2 inflammation enzyme without the side effects drugs can have.

4. Aloe Vera Improves Protein Absorption- One of the triggers of inflammation is poor protein digestion and absorption. Aloe Vera empowers your digestion and absorption of protein, protecting you from leaky gut and inflammatory protein particles.

6. Aloe Vera's Miracle Super Sugars Remove Inflammatory Toxins-By nurturing cell health and strengthening your immune system toxins are rapidly and effectively removed, preventing unneeded inflammation.

7. Aloe Vera Eliminates Free Radical Damage- Free radicals trigger inflammation and Aloe Vera's antioxidant factors prevent swelling and pain by sweeping inflammation causing radicals away.

Perhaps just the anti-inflammatory benefits of potent Aloe Vera are all you really need.

Bottom line is it's only intelligent to use smart plants to nurture your overall health and wellbeing. If you would like to experience these plus the other amazing secrets of this ancient medicinal succulent plant follow this link to learn more.

This is the science behind the Aloe Vera, and now this is my experience regarding different symptoms of Grave's Disease and Hyperthyroidism:

Aloe Vera Gel: I drink Aloe Vera Gel 30- 100 ml/ daily before meal. If you don't like the taste of Aloe Vera gel, then you can substitute with a similar Aloe Vera Berry (that supports your kidney as well, does the same job and is much tasteful).

<https://www.foreverliving.com/marketing/Product.do?code=015>

Thyroid Eye Disease

Forever Arctic Sea® (can be used as a substitute for Flax seed oil) – Reduces the eye inflammation, caused by Thyroid Eye Disease. Contains:

- Omega-3 fatty acids have been shown to help support circulatory function
- Omega-3 and Omega-9 fatty acids can help support healthy cholesterol and triglyceride levels
- Helps support proper joint function
- Mercury-free

<https://www.foreverliving.com/marketing/Product.do?code=039>

Forever Vision® – improves the general eye condition. Good if you have Thyroid Eye Disease, double or blurry vision or any other eye problems; Supports normal eyesight; Contains Vitamin A, Vitamin E, Zinc. Forever Vision® is a dietary supplement with bilberry, lutein and zeaxanthin, plus super antioxidants and other nutrients. Bilberry, a popular traditional herb, can support normal eyesight and improve circulation to the eyes. Lutein, a common carotenoid found in many vegetables and fruits, can help protect the retina. Zeaxanthin and Astaxanthin are other carotenoids that are important to the eye's macular health.

<https://www.foreverliving.com/marketing/Product.do?code=235>

Forever Alluring Eyes®. (eye cream). Keep in a refrigerator for a better performance.

- Reduces the appearance of fine lines and wrinkles, and puffiness
- Conditions eye area with Vitamin E and moisturizers
- Helps to reduce puffiness, caused by eye inflammation and the tissue around it:

<https://www.foreverliving.com/marketing/Product.do?code=233>

The above product recommendations are based on my personal research and experiment. The company which supplies them, Forever Living Products, has no responsibly whatsoever regarding my observations. The supplements and vitamins are not evaluated by the Federal Drug Administration Commission. All products are natural, even the stabilizers used, to my best research. There are of course many other products you can order, or chose from listed on their website. The company has 100% guarantee on all her products, which means if you are not happy to whatever reason, you can simply return them.

You can use my personal ID # 001002401252 as a referring agent (optional). To get them with 15% off, you can sign up as a distributor.

www.ForeverLiving.com

Thyroid Eye Disease Symptom Relief – Tips and Alternative Options

1. Elevate your head with pillows but not so that it strains your neck. This will help relieve the build up of fluids and the puffiness in the eye lids.
2. Avoid smoke filled rooms.
3. Avoid drafts from ceiling fans, air conditioners and open windows.
4. Wear tinted glasses (prescription or non prescription) indoors to help with the glare from the lights and your computer screen.
5. Working on a computer all day can cause eye problems even in a healthy individual so reduce the time spend in front of computer to a minimum. If you are not able to- take frequent breaks.
6. If possible, go to a completely dark room and keep your eyes open in the dark for 10 minutes. Some specialists say that this equals to 3 hours in a nature environment.
7. Spend more time in the nature- green color has a calming and favorable effect on your eyes.
8. Wear quality sunglasses- do not buy these cheap \$10 sunglasses, because they are not effective and won't do the job. I personally prefer Ray Ban and even though they are considered expensive they really paid off. I can't explain what a relief they are in sunny days, and not only. Especially if you have blue or green eyes- they are very sensitive to the light anyway. Sunglasses may lessen irritation not only from sun, but also from wind, smoke, dust, and foreign objects.
9. Use a humidifier in your room to keep the air moist.
10. Avoid or limit wearing contact lenses- you don't need additional irritation of your eyes.

11. Use artificial tears (whether you feel the need or not)-(but don't use the Get-the-red-out-type). Some of the best brand names are Celluvisc, tears Naturale, Moisture Drops, Genteal or Hypo tears., Bion Tears.
12. Use moisturizing ointments at night- for example: Lacri Lube, Refresh PM, Tears Renewed and DuoLube.
13. You can take Luprinol- which is concentrated omega-3 fatty acid supplement from the green- lipped mussel, especially if the source for your eye pain is due to inflammatory condition. Check with your doctor first.
14. Tape the eyes closed at night with a wide first aid tape- especially if you have applied an eye lubricant and in order to keep the moist in your eyes.
15. You can also use a blindfold (you can use the ones from the airlines), and sleeping masks can be bought pretty much everywhere.
16. Tie a scarf on the bias around your head, which covers your eyes at night.
17. Wear prism glasses to cover one eye with a patch to relieve double vision.
18. Avoid fluorescent lighting completely- I found that it really irritates my eyes.
19. Tint your car windows, if possible.
20. Use a soft-gel ice pack on your eyes to help reduce swelling and pain.
21. Avoid using hot/warm compresses on your eyes, because they may increase swelling.
22. Chamomile cold compress for your eyes. Morning and evening 15 min.
23. Cucumber slices placed on the eye lids not only relieve your eye condition, but actually have enzymes to soothe the eyes. They have been used in cosmetics for many years. The best effect is if you keep the cucumber in the refrigerator before that.
24. Any frozen vegetables in a plastic bag can be used for similar purposes- even frozen peas as an ice pack.

25. Green tea gels or creams for under the eyes- I have been using them for many years not only for puffiness and swelling, but for wrinkles as well. Best work if you keep the bottle in the refrigerator.
26. Avoid too much salt and salty foods (chips for example) - this can help with water retention and swelling.
27. Stop smoking, if you are smoker- there are a lot of researches showing that smokers are more affected than non smokers.
28. The eyes according to Chinese medicine are connected to the liver, and show the toxicity of the body in the first place. So the most important things you can do for your eyes are:
 - 1.) A detoxifying diet, adapted to you. Mostly vegetarian but protein balanced. Consult with an expert in nutrition or with a naturopathic doctor whenever possible.
 - 2.) Salt added warm baths, twice per week, 250 gr. of common non-iodized salt per bath, duration half an hour. They are excellent detoxifiers.
29. Do not use any wrinkle creams for around the eyes. The reason- these eye creams usually are hydrating and will increase the puffiness and swelling.
30. Instead, buy eye gels (Aloe Vera, cucumber, green tea etc) and keep them refrigerated. They have cooling effect and will reduce the swelling and the puffiness around your eyes tremendously.

RAI and Thyroid Eye Disease- Dangers and Options

Some researches show that after Radioactive Iodine Treatment (RAI), in 90% of the cases your eyes can get worse, especially if the patients weren't given any steroid tablets (prednisolone for example) before and after their radioiodine treatment. Have in mind that eye problems can occur before, during, and after problems with the thyroid gland have been diagnosed and treated.

There are quite a number of papers on TED and Graves' therapies. Very few of these don't conclude that RAI is the causative factor for the development of eye disease or its worsening when already present.

The authors of one of the papers, even after admitting that RAI contributes to triggering eye disease, ended up saying "Nevertheless, we consider 'bad eyes' to be a relative contraindication to RAI".

Consequently, many doctors continued and continue to push patients towards RAI. In order to prevent the development or worsening of eye disease different measures were taken:

Administration of corticosteroids along with I-131 was suggested to be followed for one month and tapering over in three months in patients who had significant TED at the time of treatment. In the case of worsening of eye disease, doses of prednisone should be doubled and therapy lasting over several months.

Other physicians gave anti-thyroid drugs prior RAI in order to deplete the gland of stored hormone and to restore the FTI to normal before radioiodine therapy.

Antithyroid drugs have immunosuppressive effect. They inhibit thyroid peroxidase. Moreover, conversion of T₄ to T₃ in peripheral tissues is prevented by PTU.

Treatment with methimazole before and for three months after undertaking RAI, appears to prevent the RAI-induced rise in TSH-R antibodies.

For patients with serious eye involvement, or high TRAb levels, antithyroid drugs followed by total thyroidectomy were prescribed. Using this protocol the University of Chicago Clinics report that euthyroid state has been achieved by surgery in 82%; 6% became hypothyroid, and the recurrence rate was 12%. After surgery, TSAb tend to disappear from the blood in the following 3 to 12 months. Recurrence rates are higher in patients with progressive eye disease or positive TRAb.

RAI and Thyroid Eye Disease: Some studies

In a study (dated 1997) by Vitti et al., it is stated that patients with thyroids under 40 gm weight, with low TRAb levels, and age over 40, were most likely to enter remission with anti-thyroid drugs (in up to 80%).

However, in the United States, RAI (I-131, radioiodine) is still the therapy of choice selected by members of the ATA (American Thyroid Association) and a lot of endocrinologists for the management of Graves' disease in adult women. (Solomon et al. 1990). Recently, even in children.

I-131 therapy causes an increase in titers of TSH-RAbs, and anti-TG or TPO antibodies, which reflects an activation of autoimmunity, probably due to release of thyroid antigens by cell damage, or destruction of T cells inside the thyroid.

Many endocrinologists believe that I-131 therapy can lead to worsening of infiltrative eye disease because of this immune response.

Many works have been published on this subject:

In 1979, Fenzi, DeGroot and others state: "In contrast to the experience with antithyroid drugs or surgery, antithyroid antibodies, including TSH-RSAb levels, increase after RAI".

In 1980 Teng and colleagues arrive at the same conclusion.

In 1989, Sridama and DeGroot in another study titled "Treatment of Graves' disease and the course of ophthalmopathy" give a similar opinion and add that "Coincident with this condition, exophthalmos may be worsened" They continue, "Although we believe that this change is an immunologic reaction to discharged thyroid antigens, this is conjecture, and the relationship of radiation therapy and exacerbation of exophthalmos remains uncertain".

However, DeGroot concedes that "Recent data indicate that there is a significant correlation" alluding to Tallstedt et al. and Escobar et al., whose works were published in 1992 and 1993.

This work, dated 1992 by Tallstedt and associates, The Thyroid Study Group from Sweden, provides us with the results of a randomized control trial on the occurrence

of TED after treatment, indicating that "¹³¹I therapy may cause development or worsening of infiltrative eye disease in nearly 33% of patients, while surgery only does it in about 16% -half as many- and antithyroid drugs in 10%".

The 1993 study by Fernandez Sanchez and colleagues concludes that "the ophthalmopathy of Graves' disease improves to a greater extent after subtotal thyroidectomy than after radioiodine therapy". It refers to different tests showing improvement in eye disease after surgery, compared to improvement after RAI which was only noted in the Feldon score.

Some years later, in 1996, Thyroid Swedish Group published a prospective randomized study which showed, "increased risk of ophthalmopathy in patients with high serum T₃ levels, especially when treated with iodine", and also indicated a risk of relapse of 21%, while it was 3%-8% for surgery and 34%-42% for drugs.

In April 1997, again Tallstedt et al., published another paper regarding a prospective study they performed, in which patients were randomized to either antithyroid drugs, subtotal thyroidectomy, or I- 131. They said:

"We found that 33% of the patients treated with I-131 deteriorated, compared with 10% and 16% of patients treated with antithyroid drugs and surgery, respectively (p = 0.02). The risk was greater when patients had very high pretreatment thyroid hormone levels".

Bottom line- think again if you have Thyroid Eye Disease and you are considering RAI treatment. Your eyes may even get worse. In case that you already had RAI treatment and you still have Thyroid eye disease you still can use the remedies and

methods described in this book, however, we'll be working directly on the symptom, i.e TED, not the cause.

And, again, what is the point of RAI? However, it still remains an option for a lot of patients.

Other Options for Thyroid Eye Disease Treatment (if nothing else helps)

Corticosteroids

Of course, there are more severe cases, where other methods should be used. I personally don't recommend them, and I haven't tried any of them, so my advice is—this should be your last option. The only thing that was prescribed long ago from my eye doctor were some eye drops containing corticosteroids and they were helpful to some extent. I used them for a very short period of time.

As we know, for more serious symptoms, the first-line treatment for TED is corticosteroids, which can be given by different delivery routes—oral, intravenous, intranasal and retrobulbar.

In my review of the literature available and several larger studies, intravenous corticosteroids appear to be more effective than oral steroids for moderate to severe disease. **Intranasal Nasonex** can be helpful in some patients as it penetrates directly through the lamina papyracea into the orbit. Topical corticosteroids are not helpful. Corticosteroids are the drug most commonly used although they are typically only used in cases where vision is threatened by orbital nerve compression. Improvement that occurs when corticosteroids are used is usually limited as

symptoms are likely to return and sometimes appear worse when corticosteroids are stopped.

It is said that corticosteroids have been used successfully in the treatment of acute congestive orbitopathy. They are believed to work by altering cell-mediated immune response and diminishing the production of mucopolysaccharides by the orbital fibroblasts. Corticosteroids result in improvement of soft tissue involvement and compressive optic neuropathy (but do not have as much of an effect on diplopia). Traditionally, a "short burst" of high-dose corticosteroids has been given, usually in the range of 60 to 120 mg/day of oral prednisone. Improvement in subjective symptoms such as pain and tearing usually occurs first, often as early as 24 to 48 hours, followed by improvement in soft tissue congestion and muscle function over a period of days to weeks.

Prednisone and Prednisolone

This is a standard treatment but there are frequent side effects. There is no response in 35% of patients or the response is only partial. High dose steroids given early in the disease when muscle swelling occurs does not necessarily limit the long term course of the disease. If there is no response to high dose steroids in the first three weeks they should be rapidly reduced. Prednisolone + orbital radiotherapy has slightly more effect than either alone. If urgent optic nerve decompression is required, the use of high dose pulsed methylprednisolone is recommended. This is more effective than oral treatment but it is expensive and not justified in most cases of TED.

Prednisolone- what do you need to know?

Prednisolone is a corticosteroid drug with predominantly glucocorticoid and low mineralocorticoid activity, making it useful for the treatment of a wide range of inflammatory and auto-immune conditions. Prednisolone acetate ophthalmic suspension is an adrenocortical steroid product prepared as a sterile ophthalmic suspension, used to reduce swelling, redness, itching, and allergic reactions affecting the eye. Corticosteroids inhibit the inflammatory response to a variety of inciting agents and probably delay or slow healing.

Possible side effects include fluid retention of the face (moon face, Cushing's syndrome), acne, constipation and mood swings. A lengthy course of prednisolone can cause bloody or black tarry stools, filling or rounding out of the face, muscle cramps or pain, muscle weakness, nausea, pain in back, hips, ribs, arms, shoulders or legs, reddish-purple lines on arms, face, legs, trunk or groin, thin and shiny skin, unusual bruising, urinating at night, rapid weight gain, and wounds that will not heal. Swelling of the pancreas has also been reported. Other effects include decreased or blurred vision, increased thirst, confusion and nervousness.

Prednisolone comes as eyedrops and eye ointment. Follow the directions on your prescription label carefully, and ask your doctor or pharmacist to explain any part you do not understand. Use prednisolone exactly as directed. Do not use more or less of it or use it more often than prescribed by your doctor.

If you are using the suspension form of prednisolone eyedrops (Pred Forte, Pred Mild, Econopred, Econopred Plus), shake the bottle well before each dose. It is not necessary to shake prednisolone eyedrop solution (AK-Pred, Inflammase Mild, Inflammase Forte).

Deltasone (Prednisone)

Generic name: Prednisone; Other brand names: Orasone

Is a steroid drug, which is used to reduce inflammation and alleviate symptoms in a variety of disorders.

When is Prednisone prescribed?

Deltasone, a steroid drug, is used to reduce inflammation and alleviate symptoms in a variety of disorders, including rheumatoid arthritis and severe cases of asthma. It may be given to treat primary or secondary adrenal cortex insufficiency (lack of sufficient adrenal hormone in the body). It is used in treating all of the following:

Abnormal adrenal gland development

Allergic conditions (severe)

Blood Disorders

Certain cancers (along with other drugs)

Diseases of the connective tissue including systemic lupus erythematosus

Eye diseases of various kinds

Fluid retention due to "nephrotic syndrome" (a condition in which damage to the kidneys causes protein to be lost in the urine)

Lung diseases, including tuberculosis

Meningitis (inflamed membranes around the brain)

Prevention of organ rejection

Rheumatoid arthritis and related disorders

Severe flare-ups of ulcerative colitis or enteritis (inflammation of the intestines)

Skin diseases

Thyroid gland inflammation

Prednisone side effects

Deltasone may cause euphoria, insomnia, mood changes, personality changes, psychotic behavior, or severe depression. It may worsen any existing emotional instability.

At a high dose, Deltasone may cause fluid retention and high blood pressure. If this happens, you may need a low-salt diet and a potassium supplement.

With prolonged Deltasone treatment, eye problems may develop (e.g. a viral or fungal eye infection, cataracts, or glaucoma).

If you take Deltasone over the long term, the buildup of adrenal hormones in your body may cause a condition called Cushing's syndrome, marked by weight gain, a "moon-faced" appearance, thin, fragile skin, muscle weakness, brittle bones, and purplish stripe marks on the skin. Women are more vulnerable to this problem than men. Alternate-day therapy may help prevent its development.

Steroids main side effect is to increase many parameters of aging. This includes arthritis, degenerative changes of joints, etc. These are all well documented. As to the specifics of your problem, it would be hard to say without examining the problem by your doctor.

This drug should be avoided if there is any other treatment option available. However, for many medical conditions there are no alternatives. Side effects depend on dosage and length of time taken and generally are equivalent to early aging: cataracts, osteoporosis, diabetes mellitus, muscle weakness, etc.

Steroids can produce a wide variety of psychological changes. Clinically you see this in about 5% of patients. It seems to be dose related and high IV doses cause more problem than small oral doses. Many patients will experience euphoria and some difficulty sleeping. Anger, delusions, and paranoia are less common. An occasional patient will become psychotic on these drugs.

Reading all this studies I really don't understand if there is anything SAFE about all these drugs. Aren't we causing more harm, than benefit?

The following is for informational purposes only. Please, check with your doctor this option for treating your eyes!

Flavay®- A New Safe Option for Treating Eye Inflammation?

Is this the New, Completely Safe, Non-Drug Natural Approach to Inflammation & Edema (Swelling)?

Flavay's® strong antioxidant power is patented—as a *scavenger* of the free radicals that play a major role in the initiation, duration and breakdown of inflammation and the degradation of collagen.

Flavay® has been licensed and sold in France for reducing inflammation and edema (swelling) since 1950 and is now available in the United States as a dietary supplement. Research shows several ways that Flavay® can stimulate the immune response to help normalize the balance of chemicals in the body that control pain and inflammation.

Inflammation is caused by the overproduction of free radicals in a specific area of the body. We now know that antioxidants work together to defeat free radicals and

inhibit the biological pathway that triggers inflammation, and Flavay® is particularly effective as an anti-inflammatory.

Research demonstrates that Flavay® can selectively bind to the connective tissue of joints, preventing inflammation and lessening pain. In fact, one of the very first benefits observed and studied Dr. Jack Masquelier, in as early as 1947, was the anti-inflammatory effect of Flavay®.

Research also demonstrates that Flavay® inhibits the release and synthesis of histamine (which produces accelerated blood flow, dilates capillaries and increases their permeability, thereby leaking plasma into surrounding tissue), a key factor in the promotion of inflammation.

Studies demonstrate that the anti-histamine action of Flavay® is obtained through inhibiting the activity of the enzyme histidine decarboxylase. Dr. Masquelier's research has been confirmed by German studies which show that Flavay® may lower the production of histamine with as much as 86% inhibition of histidine decarboxylase.

Flavay® also neutralizes free radicals that promote swelling and cause inflammation. A free radical called superoxide is involved in the inflammation of arthritis. Flavay® readily quenches the superoxide free radicals.

Edema (Swelling)

Edema is an uncomfortable condition and can be both painful and dangerous. Swollen and painful legs and ankles, puffiness of the eyes and an overall bloated look and feel are examples of edema. It involves the leakage of blood serum into

surrounding tissues and Flavay® has shown that it can reduce this leakage by strengthening capillary walls.

Italian scientists from the University of Florence studied the effect of Flavay® on venous congestion (edema) in the legs. The study involved 40 subjects consisting of 13 men and 27 women between the ages of 34 and 74. The subjects were randomly divided into two groups. One group received a placebo and the other group received 300 mg of Flavay® daily for 60 days.

All of those taking the Flavay® had relief from at least some of the symptoms. After 30 days, the pain was totally relieved in 38 percent of those taking Flavay®, the swelling disappeared in 26 percent (the circumference of the legs was measured above the ankle), and 11 percent experienced a decrease in the feeling of heaviness in their lower limbs. After 60 days, the pain was totally relieved in 67 percent of those taking Flavay®, the swelling disappeared in 63 percent, and the decrease in heaviness jumped to 33 percent.

Flavay's® strong antioxidant power is patented (U.S. Patent No. 4,698,360)—as a *scavenger* of the free radicals that play a major role in the degradation of collagen and the initiation, duration and breakdown of inflammation. That means that your immune system works better, your joints hurt less, and your blood flows better, all because of Flavay®.

I never used this product, but you may check with your doctor and see if this can help your condition as well.

Radiation

During the past few years, radiation therapy has re-emerged as a useful form of treatment of severe orbitopathy. The rationale for the use of radiation therapy is reduction or elimination of the pathogenic orbital lymphocytes, which are markedly radiosensitive. It is also thought that the glycosaminoglycan production by fibroblasts is reduced, thereby reducing orbital edema, orbital tension, and conjunctival injection. Although congestive findings improve most consistently, significant improvement in proptosis and extraocular muscle function has been reported. Like corticosteroids, radiation therapy is most effective within the first year, when significant fibrotic changes have not yet occurred. Some doctors however, suggest that periods of active orbital inflammation within the long natural history of thyroid orbitopathy would benefit from corticosteroids or radiation therapy.

“The other main medical intervention is external beam radiation for the treatment of moderate to severe orbital inflammation or optic neuropathy,” said Dr. Cockerham, a well known ophthalmologist. But radiation has been the subject of much debate ever since James A. Garrity, MD, and colleagues published a radiation study some years ago in *Ophthalmology*. Dr. Garrity is professor of ophthalmology at the Mayo Clinic in Rochester, Minn., and his study stimulated more lively discussion at the North American Neuro-Ophthalmology Society (NANOS). “Jim Garrity and his colleagues challenged the dogma that radiation is effective, but some questioned the patient selection of that study,” Dr. Cockerham said.

In the study, one eye in each of 42 nondiabetic, nonoptic neuropathy patients with mild to moderate orbitopathy randomly received 20 Gy of external beam therapy while the fellow eye received sham therapy. No steroids were given, and six months later, the treatment/placebo arms were reversed. “Using the parameters of

extraocular muscle volume, fat volume, proptosis, area of diplopia fields, single-muscle range of motion, and lid fissure width, we were not able to detect any statistically significant change in any parameter,” Dr. Garrity said. “We concluded that the effect of treatment could not be distinguished from the natural history.”

So, is Radiation really effective? It’s still an option for some people suffering Thyroid Eye Disease.

Radiotherapy Studies

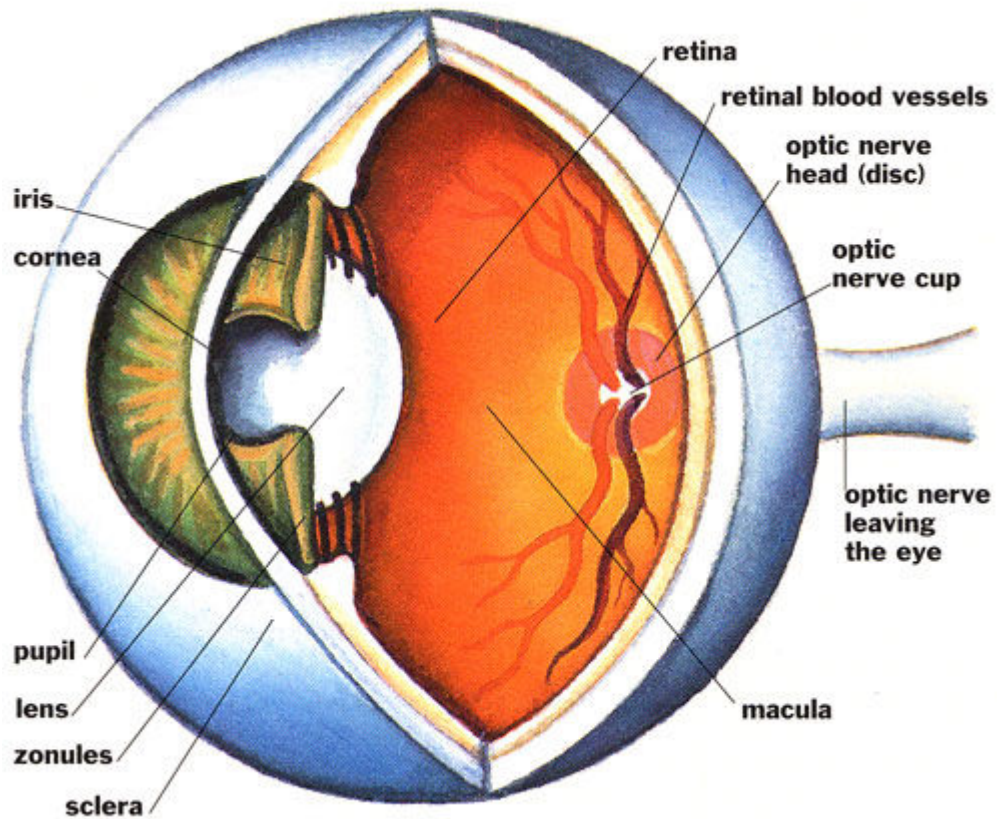
- ✱ RETROBULBAR RADIOTHERAPY: - Trial of prednisone versus radiotherapy showed no difference in clinical improvement (about 50%).The patients all tolerated retrobulbar radiotherapy better than steroids. A steroid maintenance > 25mg/ day should be considered in these cases. Best effect in acute disease. Patients with diabetes mellitus should not be irradiated as they are more susceptible to radiation retinopathy. The therapy consists of 2000rads for 10days, but effect starts at 4 weeks, maximal 4 months.
- ✱ Radiation therapy, however, must be administered in fractionated doses, which delays its beneficial effect. For this reason, if visual dysfunction progresses while the patient is on corticosteroids, surgical decompression is usually recommended if the patient is a surgical candidate.
- ✱ Another study shows that a retrospective series of 84 patients with compressive optic neuropathy treated with either corticosteroids or radiation therapy supports mounting evidence that radiation therapy may be safer and more effective than corticosteroids.

As you can see- there are controversial studies about Radiotherapy- who can say if it is effective, or if it is safer than corticosteroids? But it’s an option too.

Compressive Optic Neuropathy

Treatment for Optic Neuropathy

Optic neuropathy is a disorder in which the optic nerve, which connects the eye to the brain, is compressed. Optic neuropathy is generally seen in patients with extremely enlarged extraocular muscles that squeeze the optic nerve deep within the eye socket. Symptoms include blurred vision, decreased color vision, or shadows or holes in the field of vision. Loss of color vision is one of the first symptoms of optic nerve involvement. The inability to distinguish the color red, in patients not previously diagnosed as color blind, is one of the first signs of color vision loss. If your vision is threatened due to Optic Neuropathy -then most doctors will prescribe intensive pulse therapy of corticosteroids, orbital radiation, and decompression surgery. This is the only time when decompression surgery will be done before your eyes has stabilized, and it's done in order to save eyesight and prevent further permanent damage to your vision.



Orbital Decompression

- * Orbital decompression is indicated for compressive optic neuropathy when there has been failure of or contraindication for corticosteroids or radiation therapy or if corticosteroid dependence has developed with intolerable side effects. Other indications include excessive proptosis with exposure keratitis and corneal ulceration, pain relief, and cosmesis for disfiguring exophthalmos. Orbital decompression may also be indicated as a preliminary procedure to extraocular muscle surgery on a patient with sufficient proptosis to suggest that decompression might ultimately be required.

- ✱ The transorbital (via fornix or eyelid) approach to inferior and medial wall decompression is the most common approach used by ophthalmologists. The addition of a lateral wall advancement has the advantage of both further increasing the orbital volume and simultaneously improving upper eyelid retraction; this is the technique most doctors prefer.

When an Eye Surgery can be performed?

According many eye doctors surgical treatments are not done until your eye disease has stabilized. Usually this stabilization refers to period of several months- the measurements must remain the same- before you are a good candidate for a surgery. Surgery is not done until the hot/ active phase has stabilized, unless there is a vision threat.

1. Orbital decompression is done first because it can affect the movement of the eye.
2. Strabismus/ muscle surgery is done next, before any eyelid repair, because the position of the eye must be stable.
3. Finally, eye lid surgery and repair is done.

Intravenous Immunoglobulin versus Prednisolone in Graves' Ophthalmopathy

Another experimental approach is the use of intravenous immunoglobulins (IVIGs). This treatment works by blocking the production of new antibodies, helping to dissolve immune complexes that fuel autoimmune reaction.

Usually it's given 1 g immunoglobulin /kg body weight for 2 consecutive days every 3 weeks. The immunoglobuline course was repeated 6 times.

The treatment showed improvements in proptosis, visual acuity, lid aperture and a decrease in eye muscles area.

Regarding side effects, there were only 2 patients with side effects, out of 21 (with a headache and fever), where compared to the people treated with prednisolone 16 out of 19 had mild to severe side effects. Moderate and minor side effects were more frequently noted in steroid-treated patients than in the IVIG group. These data suggest that IVIG is safe and effective in reducing the eye changes in patients with Graves' ophthalmopathy.

If you have serious Graves' ophthalmopathy that isn't responding to other treatments, you may ask your doctor about IVIG. Here is the full report on this new treatment:

Randomized trial of intravenous immunoglobulins versus prednisolone in Graves' ophthalmopathy

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SUMMARY

Glucocorticoids are usually given for management of Graves' ophthalmopathy (GO), but they may cause side effects. By comparison, intravenous administration of immunoglobulins resulted in clinical improvement and decreased antibody titres in a large number of autoimmune diseases. Therefore, a randomized trial was done, in which 19 patients with active GO were treated with a 20-week course of oral prednisolone (P, starting dose 100 mg/day), and 21 received 1 g immunoglobulin/kg body weight for 2 consecutive days every 3 weeks. The immunoglobulin course was repeated six times. Before and at the end (20 weeks) of immunomodulating therapy, ophthalmological investigation and quantitative magnetic resonance (MR) imaging were performed. A successful outcome was observed in 12 (63%) P- and in 13 (62%) immunoglobulin-treated patients. Overall, there were no marked differences in degree of improvement between the two groups. Responders to treatment in both groups showed improvements in proptosis (median from 24.5 to 21.5 mm; $P < 0.005$), visual acuity (from 0.6 to 0.85; $P < 0.001$), intraocular pressure (from 25 to 20 mmHg; $P < 0.0001$), lid aperture (from 14 to 12 mm; $P < 0.01$) and a decrease in eye muscle area (inferior, from 44 to 33 mm²; medial, from 43 to 34 mm²; both $P < 0.0005$). Among the immunoglobulin-treated patients, there was a marked decrease of thyroid antibody titres. Side effects were more frequent and severe during P than during immunoglobulin therapy. Thus, with respect to the above mentioned objective parameters, P and immunoglobulin appeared to be equally effective in treatment of active GO.

Keywords immunoglobulin therapy Graves' ophthalmopathy

INTRODUCTION

Immunoglobulin preparations from human blood were first used in clinical medicine to treat patients having a deficiency of circulating antibodies [1]. Interest in the manipulative effects of immunoglobulin on the immune system first developed with the discovery that immunologic reactions can be modified, often dramatically, by the intravenous (i.v.) administration of large amounts of immunoglobulin (400–2000 mg/kg body weight over a period of 2–5 days [2]). Over the years, i.v. infusion of pooled normal polyspecific immunoglobulin for therapeutic use has resulted in clinical improvement and/or decrease in antibody titre in a number of human autoimmune diseases [3]. I.v. immunoglobulin contains anti-idiotypes against a variety of autoantibodies from patients with autoimmune diseases and against natural autoantibodies from normal individuals [4]. Much of the evidence regarding the manipulative effects of immunoglobulin on the immune

system suggests that the idiotypic and Fc portions of the molecule are important.

Graves' ophthalmopathy (GO) is an organ-specific autoimmune disease, and orbital infiltration with mononuclear cells and local release of cytokines suggest that activated T cells are involved in its pathogenesis [5]. During the active inflammatory stage, the retrobulbar tissue shows marked lymphocytic infiltration and interstitial oedema [6]. Thus, immunosuppression is often used initially, and by suppressing inflammatory changes it can result in subjective and objective improvement of the disease [7,8]. Although glucocorticoids are the first-choice immunomodulating treatment, they often cause side-effects. By comparison, positive results with i.v. immunoglobulin as second-line treatment have been reported in patients with severe GO and related dermatopathy [9–11], but controlled clinical trials have not been done, and the benefits of i.v. immunoglobulin therapy have been questioned. Therefore, in the following randomized prospective trial, we compared efficacy and tolerability of oral prednisolone (P) and i.v. immunoglobulin in patients with active GO.

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PATIENTS AND METHODS

Forty consecutive patients with active GO (aged 39–61 years) who had been euthyroid for at least 2 months were enrolled (Table 1). The diagnosis of GO was based on ophthalmological investigation [12], which encompassed ultrasonography of the orbit. Written informed consent was obtained from all patients and the study received local Ethical Committee approval. A randomization list was used to assign each patient to receive either oral P or i.v. immunoglobulin. Nineteen patients were treated with a 20-week course of P (starting dose 100 mg/day for 1 week, then tapering the dose by 5 mg/week), and 21 patients received 1 g immunoglobulin/kg body wt intravenously for 2 consecutive days every 3 weeks. The immunoglobulin course was repeated six times. The type of therapy was known neither to the ophthalmologist nor to the neuroradiologist who assessed treatment results. All patients were examined by the same ophthalmologist according to the new classification of eye changes of Graves' disease [12] on the day before and at 20 weeks (endpoint) after the start of treatment. Response to therapy was defined as a marked amelioration of at least three objective signs (decrease of eye muscle area $> 5 \text{ mm}^2$, proptosis $> 2 \text{ mm}$, intraocular pressure in upgaze $> 3 \text{ mmHg}$, and/or absence of diplopia in primary position). Thyroid medication was not changed during the study period (methimazole 5–20 mg/day). Thyroid hormones (Boehringer, Mannheim,

Germany), thyroglobulin and microsomal (ELISA; Elias, Freiburg, Germany), as well as TSH receptor (radioreceptor assay; TRAK, Brahms, Germany) autoantibodies were measured using commercially available kits. Exclusively immunoglobulins prepared from anti-hepatitis C virus (HCV)-negative plasma donors according to manufacturer's information (Serapharm, Münster, Germany) were administered. Laboratory tests (liver and renal function) were assessed regularly. All patients were examined for hepatitis B surface antigen (HBsAg), anti-HCV, and anti-HIV (ELISA; Abbott Diagnostika, Wiesbaden, Germany).

Quantitative magnetic resonance (MR) imaging of the orbits with a 0.28-T magnet (BMT 1100; Brucker, Erlangen, Germany) was performed and the T2 relaxation time (T2) was measured in a coronal section with 5 mm thickness. Squares containing nine pixels were chosen for T2 determination within the rectus eye muscles. Calculations of T2 were performed with a Carr-Purcell-Meiboom-Gill sequence with eight consecutive echoes (800/34-272; repetition time second/echo time second). Normal range of T2 within the extraocular muscles was 92 ms (80–97 ms).

All values are expressed as the median (range) of values recorded for affected eyes. Comparison between groups was by two-sided, two-sample *t*-test or by Mann-Whitney *U*-test. To compare percentages, we used the χ^2 test. Correlations among various parameters were calculated using Spearman's test.

RESULTS

As predefined, therapeutic outcome after 20 weeks was similar in each treatment group, with 13 (62%) patients responding successfully to immunoglobulin and 12 (63%) responding to P. Of the eight (38%) in the immunoglobulin group and seven (37%) in the P group in whom treatment was unsuccessful, six (29%) and five (26%), respectively, showed no change, and two (9% and 11%) in each group were classified as treatment failures. A significant improvement of proptosis under both treatments was observed (Fig. 1a), whereas responders to both regimens showed a similar marked decrease of exophthalmos (Fig. 1b). Visual acuity slightly increased during immunoglobulin and P therapy, respectively (Fig. 2a), but only four patients had a vision below 0.5. Intraocular pressure in upgaze was strongly lowered by immunoglobulin treatment (Fig. 2b), in contrast to P therapy where no significant changes were demonstrated. Response to either treatment was also due to changes in soft-tissue involvement (Fig. 3a), as well as in eye muscle motility (Fig. 3b). Corneal involvement was noted in four P versus five immunoglobulin patients before and in none after therapy. Eye muscle area decreased significantly under both therapy regimens (Fig. 4a), whereas in responders to immunoglobulin and P treatment, a sharp decrease of muscle area (Fig. 4b) was noted. Overall, there were no marked differences in degree of improvement between the two groups, but inflammatory signs resolved more rapidly in P patients. Side-effects were more common during P than during immunoglobulin therapy (Table 2).

Responders to treatment in both groups showed improvements in proptosis (median from 24.5 to 21.5 mm; $P < 0.005$), visual acuity (from 0.6 to 0.85; $P < 0.001$), intraocular pressure (from 25 to 20 mmHg; $P < 0.0001$), lid aperture (from 14 to 12 mm; $P < 0.01$) and a decrease in muscle area (inferior, from 44 to 33 mm²; medial, from 43 to 34 mm², both $P < 0.0005$). Before therapy, T2 of the eye muscles was significantly higher in the responder group and decreased markedly after 20 weeks, in contrast to the non-responder group (45 versus 7 ms;

Table 1. Baseline clinical and laboratory variables in patients with Graves' ophthalmopathy according to randomization to treatment with intravenous immunoglobulins or oral prednisolone (P)

	Immunoglobulin	P
Number of patients	21	19
Female/male	16/5	15/4
Age (years), median	48	47
range	39–61	40–59
Pretreated (steroids/irradiation)	11	9
Duration of eye disease (months)	9	7
	5–19	3–18
Duration of thyroid disease (months)	16	13
	10–24	4–21
Thyroid volume (ml)	33	36
	24–42	23–44
Plasma TSH (mU/l)	1.1	1.0
	0.6–1.4	0.5–1.2
TSH-receptor antibodies (U/l)	104	87
	28–136	19–108
Proptosis (mm)	23.5	24
	21–26	21–27
Visual acuity	0.7	0.6
	0.5–0.9	0.5–0.8
Lid aperture (mm)	13	13
	12–15	11–16
Intraocular pressure	24.4	25
in upgaze (mmHg)	21–27	21–29
Rectus muscle surface area (mm ²)		
inferior	39	38
	36–46	35–44
medial	40	41
	36–45	36–47
T2 relaxation time of	119	123
rectus muscles (ms)	108–141	114–157

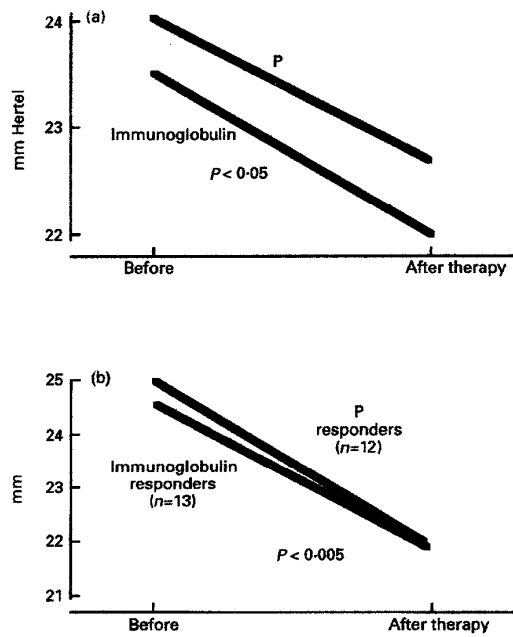


Fig. 1. (a) In patients with Graves' ophthalmopathy (GO), the course of proptosis (Hertel exophthalmometer, median value in mm) is shown before and after i.v. immunoglobulin (before, range 21–26 mm; after, 19–26 mm) and oral prednisolone (P; before, 21–27 mm; after, 20–28 mm) treatment, respectively. (b) In patients with GO who responded to immunomodulating therapy (n = 13 out of 21 for immunoglobulin and 12 out of 19 for P), the course of proptosis (Hertel exophthalmometer, median value in mm) is shown before and after i.v. immunoglobulin (before, 22–26 mm; after, 19–22 mm) and oral prednisolone (P; before, 21–27 mm; after, 19–23 mm) treatment, respectively.

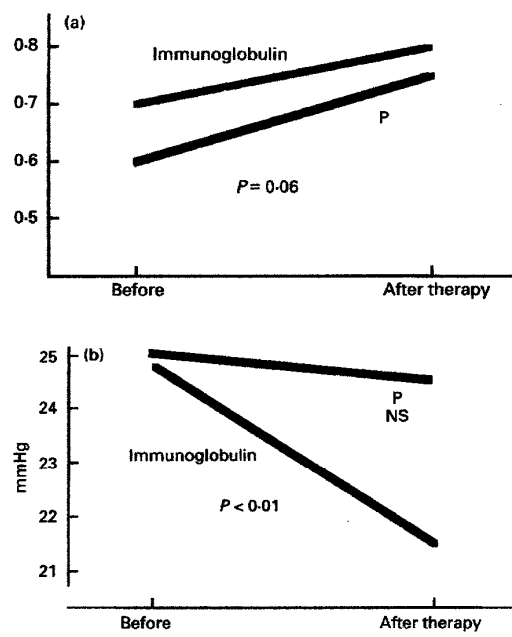


Fig. 2. (a) In patients with Graves' ophthalmopathy (GO), the course of visual acuity (median value) is shown before and after i.v. immunoglobulin (before, range 0.5–0.9; after, 0.7–1.0) and oral prednisolone (P; before, 0.5–0.8; after, 0.6–1.0) treatment, respectively. (b) In patients with GO, the course of intraocular pressure in upgaze (median value in mmHg) is shown before and after i.v. immunoglobulin (before, 21–27 mmHg; after, 17–26 mmHg) and oral prednisolone (P; before, 21–29 mmHg; after, 18–28 mmHg) treatment, respectively.

$P < 0.0001$). When responders were compared with non-responders for both treatment groups, there were no differences in baseline characteristics (e.g. age, sex distribution, duration of eye/thyroid disease, pretreatment of ophthalmopathy, thyroid volume, plasma TSH, and levels of TSH-receptor antibodies).

In 18 immunoglobulin patients positive for thyroid microsomal antibodies, the median value dropped from 2850 to 490 U/ml (normal < 350 U/ml; $P < 0.0001$). Similar results were observed in 15 cases, where the thyroglobulin antibody level dropped from 1980 to 500 U/ml; $P < 0.001$. In 18 TSH-receptor antibody-positive patients, the titre was 104 before and 10 U// (normal < 9 U//; $P < 0.0001$) after immunoglobulin therapy. In comparison, the level in 15 TSH-receptor antibody-positive P patients dropped from 87 to 50 U// ($P < 0.01$).

After completion of the study, 10 (five P-treated) out of 15 non-responders had active eye disease, and received a combination of immunoglobulin (1 g/kg body wt per day) and i.v. methylprednisolone (250 mg/day) for 2 consecutive days every 3 weeks. After repeating this course four times, seven patients responded to this combined regimen (Table 3). The remaining five (three immunoglobulin non-responders to monotherapy) were submitted to decompressive surgery. No liver chemistry abnormalities were

detected after immunoglobulin administration, and all immunoglobulin-treated patients were negative for HBsAg, anti-HCV and HIV antibodies 40 weeks after start of treatment.

DISCUSSION

This randomized study showed that i.v. immunoglobulin therapy was equally effective and better tolerated than the standard regimen oral P in patients with active GO. Response to therapy was independent of duration of eye and/or thyroid disease, pretreatment of GO and level of thyroid antibodies. Combination of both immunomodulating drugs was successful in 70% of the non-responders to monotherapy and may present an alternative second-line treatment for patients with severe and active GO, not responding to steroids and retrobulbar irradiation.

Graves' hyperthyroidism and GO are characterized by a lymphocyte infiltration of the target organ, and evidence of immune system activation, particularly during the active phase of the disease when autoantibodies to the TSH receptor and activated T cells are present in the circulation [7]. In a preliminary study, eight women with GO were treated with 3 monthly i.v. infusions of 2 g/kg of pooled IgG [9]. All patients experienced subjective and objective clinical improvement following therapy. A significant fall in the level of thyroid-stimulating antibodies was also

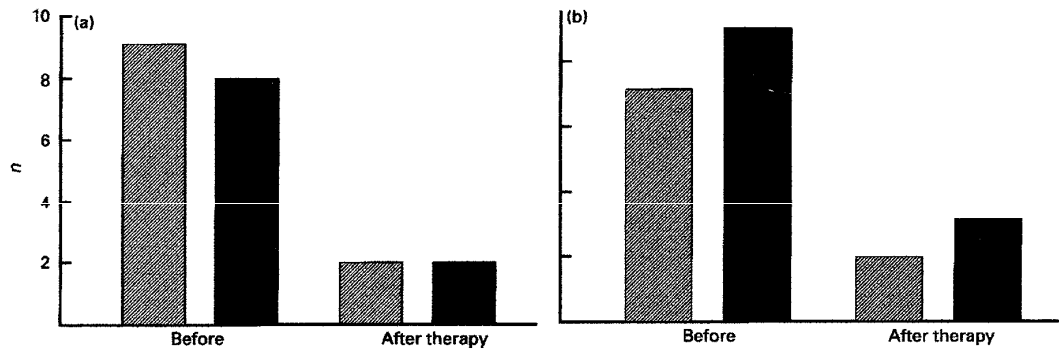


Fig. 3. (a) Changes in soft-tissue involvement are shown before and after i.v. immunoglobulin (■) and oral prednisolone (■) treatment, respectively. Chemosis was present in nine (P) versus eight (immunoglobulin) patients before and in two (P) versus two (immunoglobulin) after immunomodulating therapy. (b) Changes in eye muscle motility are shown before and after i.v. immunoglobulin and oral prednisolone (P) treatment, respectively. Diplopia in primary position was present in nine (P) and 11 (immunoglobulin) patients before but in only four (P) and five (immunoglobulin) cases, respectively, after immunomodulating therapy.

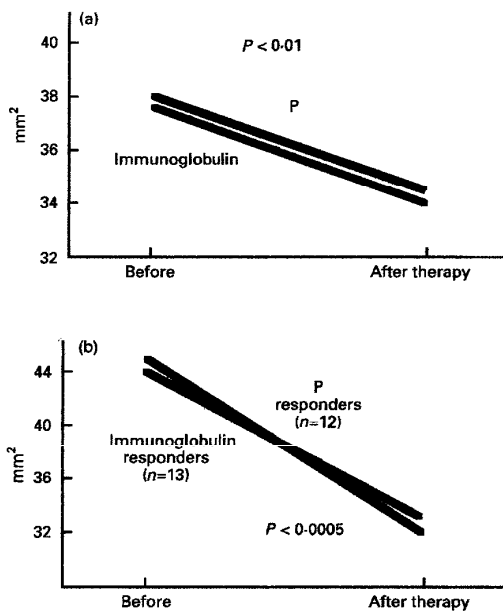


Fig. 4. (a) In patients with Graves' ophthalmopathy (GO), the course of the surface area of the inferior rectus muscle (quantitative magnetic resonance (MR) imaging, median value in mm^2) is shown before and after i.v. immunoglobulin (before, range 36–46 mm^2 ; after, 32–44 mm^2) and oral prednisolone (P; before, 35–44 mm^2 ; after, 32–45 mm^2) treatment, respectively. (b) In patients with GO who responded to immunomodulating therapy ($n = 13$ out of 21 for immunoglobulin and 12 out of 19 for P), the course of the surface area of the inferior rectus muscle (quantitative MR imaging, median value in mm^2) is shown before and after i.v. immunoglobulin (before, 37–46 mm^2 ; after, 32–35 mm^2) and oral prednisolone (P; before, 35–44 mm^2 ; after, 32–36 mm^2) treatment, respectively.

Table 2. Side-effects during treatment with intravenous immunoglobulins or prednisolone (P) in patients with Graves' ophthalmopathy

Side effects	Immunoglobulin	P	P value
Number of events	2	19	0.001
<i>Moderate</i>			
Weight gain	0	3	
Hirsutism	0	2	
Cushingoid face	0	2	
Myalgias	0	2	
Nausea/pyrosis	0	2	
Sleeplessness	0	2	
Tiredness	0	1	
Dysmenorrhoea	0	1	
Headache	1	1	
Fever	1	0	
<i>Major</i>			
Diabetes mellitus	0	1	
Hypertension	0	1	
Behavioural changes	0	1	
<i>Number (%) of patients</i>			
With side-effects	2/21 (10)	16/19 (84)	0.0002
With major side-effects	0	2/19 (11)	

observed. The efficacy and safety of immunoglobulin treatment in GO and related myxedema has also been demonstrated [10,11]. Clinical improvement of GO and dermopathy with disappearance of lymphocytic skin infiltration and immunoglobulin deposition was noted. A parallel reduction of the titre of circulating thyroglobulin, microsomal and TSH receptor antibodies was registered. In Graves patients treated with a combination of thyrostatics and immunoglobulin, relapse rate of hyperthyroidism 1 year after stopping methimazole was 29% versus 44% in cases receiving methimazole alone ($P < 0.01$). As in our study, the marked decrease of antibody levels may be explained in terms of a direct and local immunomodulating effect of immunoglobulin on the

Table 3. Ophthalmological parameters of 10 patients with active Graves' ophthalmopathy before and after receiving four times a combination of i.v. immunoglobulin (1 g/kg body wt per day) and i.v. methylprednisolone (250 mg/day) for 2 consecutive days every 3 weeks

	Before	After immunoglobulin + P therapy	P value
Proptosis (mm), median	24	21	0.001
range	22–28	19–26	
Intraocular pressure in upgaze (mmHg), median	24	20	0.001
range	21–28	18–23	
Visual acuity, median	0.7	0.8	0.01
range	0.6–0.8	0.7–0.9	
Lid aperture (mm), median	14	12	0.005
range	12–16	11–14	
Chemosis	n = 4	n = 1	
Conjunctivitis	n = 7	n = 3	
Diplopia in primary position	n = 7	n = 3	

intrathyroid lymphocytes. With respect to the fall of microsomal antibody titre, similar results were observed in GO patients receiving cyclosporin [13].

The recent discovery in immunoglobulin preparations of anti-idiotypic antibodies against disease-associated cross-reacting idiotypes of human thyroglobulin recognizing an immunodominant α -idiotypic shared by antibodies from patients with autoimmune thyroid disease and not found in antibodies from healthy subjects supports the hypothesis that i.v. immunoglobulin could be effective through anti-idiotypic suppression in patients with autoimmune diseases [14,15]. However, there is reasonable evidence that active molecules within i.v. immunoglobulin such as CD4 and other shed surface molecules from lymphocytes could be important in causing the immunomodulation. This would explain why i.v. immunoglobulin is too effective in what is after all not an antibody-mediated disease.

Immunomodulatory effects of i.v. immunoglobulin may further depend on the interaction of infused immunoglobulin with inflammatory cells and lymphocytes through Fc portions and/or interactions of i.v. immunoglobulin with circulating immunoglobulin or antigen receptors on lymphocytes through variable V regions [16–18]. Functional modulation of T lymphocytes by immunoglobulin has been demonstrated as another possible mechanism of action of i.v. immunoglobulin in an experimental model [19]. *In vitro* studies suggest that immunoglobulin has direct effects on cytokine production in T cells and monocytes/macrophages [20,21]. A prolonged elevation in levels of soluble tumour necrosis factor receptor and a marked increase in plasma levels of IL-1 receptor antagonist were observed after one bolus injection (400 mg/kg) of i.v. immunoglobulin [22]. There are also many similarities between i.v. immunoglobulin and tumour growth factor β , which has inhibitory effects on various T and B cell interactions and activities [23].

In patients with active GO, increased water content of

thickened eye muscles is probably the cause of elevated T2 [24]. Reversibility of thickness and T2 in muscles with primarily elevated T2 can be explained as a therapy-induced decrease of water content. Therefore, measurement of elevated T2 might be a factor in the prediction of the reversibility of muscle thickening, and favours the choice of anti-inflammatory therapy regimens in these patients [24,25]. In this study, decrease of T2 of the eye muscles after therapy correlated significantly with the decrease of the muscle area.

In our GO patients immunoglobulin therapy was safe. The risk of transmitting viral infections with immunoglobulin, especially the newer preparations that have been treated with a solvent-detergent, is very low [26], and there has never been a documented transmission of HIV from any preparation of immunoglobulin [27]. Nevertheless, high costs and the potential risks of immunoglobulin therapy must be considered before treatment is commenced, particularly in diseases for which the benefits of therapy are not clearly established. Subcutaneous immunoglobulin which has been recently reported to be a safe, cost-effective, and convenient method of immunoglobulin administration [28], may be promising in patients with primary hypogammaglobulinaemia and autoimmune diseases.

REFERENCES

- Schwartz SA. Intravenous immunoglobulin for autoimmune disorders. *J Clin Immunol* 1990; **10**:81–89.
- Dwyer JM. Manipulating the immune system with immune globulin. *N Engl J Med* 1992; **326**:107–16.
- Ratko TA, Burnett DA, Foulke GE *et al.*, and the University Hospital Consortium Expert Panel for Off-Label Use of Polyvalent Intravenously administered Immunoglobulin Preparations. Recommendations for off-label use of intravenously administered immunoglobulin preparations. *JAMA* 1995; **273**:1865–70.
- Rossi F, Kazatchkine MD. Anti-idiotypes against autoantibodies in pooled normal human polyspecific immunoglobulins. *J Immunol* 1989; **143**:4104–9.
- Weetman AP. Thyroid-associated eye disease: pathophysiology. *Lancet* 1991; **328**:25–28.
- v.d. Gaag R, Schmidt ED, Koorneef L. Retrobulbar histology and immunohistochemistry in endocrine ophthalmopathy. In: Kahaly G, ed. *Endocrine ophthalmopathy. Molecular, immunological and clinical aspects*. Basel: Karger, 1993:1–10.
- Weetman AP, McGregor AM. Autoimmune thyroid disease: further developments in our understanding. *Endocr Rev* 1994; **15**:788–830.
- Fells P. Thyroid-associated eye disease: clinical management. *Lancet* 1991; **338**:29–32.
- Dwyer JM, Benson EM, Currie JN *et al.* Intravenously administered IgG for the treatment of thyroid eye disease. In: Imbach P, ed. *Immunotherapy with intravenous immunoglobulins*. London: Academic Press, 1991:387–94.
- Antonelli A, Saracino A, Alberti B *et al.* High-dose intravenous immunoglobulin treatment in Graves' ophthalmopathy. *Acta Endocrinol* 1992; **126**:13–23.
- Antonelli A, Navarrane A, Palla R *et al.* Pretibial myxedema and high-dose intravenous immunoglobulin treatment. *Thyroid* 1994; **4**:399–408.
- Anon. Classification of eye changes of Graves' disease. *Thyroid* 1992; **2**:235–6.
- Kahaly G, Schrezenmeir J, Krause U *et al.* Cyclosporin and prednisone vs prednisone in treatment of Graves' ophthalmopathy: a controlled, randomized and prospective study. *Eur J Clin Invest* 1986; **16**:415–22.
- Dietrich G, Kazatchkine MD. Normal immunoglobulin G (IgG) for therapeutic use (intravenous Ig) contain anti-idiotypic specificities against an immunodominant, disease-associated, cross-reactive

- idiotype of human anti-thyroglobulin autoantibodies. *J Clin Invest* 1990; **85**:620–5.
- 15 Kaveri SV, Mouthon L, Kazatschkine MD. Immunomodulating effects of intravenous immunoglobulin in autoimmune and inflammatory diseases. *J Neurol, Neurosurg Psychiatry* 1994; **57**(Suppl.):6–8.
- 16 Vassilev T, Gelin C, Kaveri SV *et al.* Antibodies to the CD5 molecule in normal human immunoglobulins for therapeutic use (intravenous immunoglobulins, IVIG). *Clin Exp Immunol* 1993; **92**:369–72.
- 17 Blasczyk R, Westhoff U, Grosse-Wilde H. Soluble CD4, CD8, and HLA molecules in commercial immunoglobulin preparations. *Lancet* 1993; **341**:789–90.
- 18 Takei S, Arora YK, Walker SM. Intravenous immunoglobulin contains specific antibodies inhibitory to activation of T cells by staphylococcal toxin superantigens. *J Clin Invest* 1993; **91**:602–7.
- 19 Achiron A, Margalit R, Hershkovivz R *et al.* Intravenous immunoglobulin treatment of experimental T cell-mediated autoimmune disease. *J Clin Invest* 1994; **93**:600–5.
- 20 Andersson V, Bjork L, Skansen-Saphir U *et al.* Pooled human IgG modulates cytokine production in lymphocytes and monocytes. *Immunol Rev* 1994; **139**:21–42.
- 21 Schaik IN, Vermeulen M, Brand A. *In vitro* effects of polyvalent immunoglobulin for intravenous use. *J Neurol, Neurosurg Psychiatry* 1994; **57**(Suppl.):15–17.
- 22 Aukrust P, Froland SS, Liabakk NB *et al.* Release of cytokines, soluble cytokine receptors, and interleukin-1 receptor antagonist after intravenous immunoglobulin administration *in vivo*. *Blood* 1994; **84**:2136–43.
- 23 Shimozato T, Iwata M, Kawada H *et al.* Human immunoglobulin preparation for intravenous use induces elevation of cellular cyclic adenosine 3':5'-monophosphate levels, resulting in suppression of tumor necrosis factor alpha and interleukin-1 production. *Immunology* 1991; **72**:497–501.
- 24 Just M, Kahaly G, Higer HP *et al.* Graves' ophthalmopathy: role of MR imaging in radiation therapy. *Radiology* 1991; **179**:187–90.
- 25 Hiromatsu Y, Kojima K, Ishisaka N *et al.* Role of magnetic resonance imaging in thyroid-associated ophthalmopathy: its predictive value for therapeutic outcome of immunosuppressive therapy. *Thyroid* 1992; **2**:299–305.
- 26 Horowitz B, Prince AM, Horowitz MS *et al.* Viral safety of solvent-detergent treated blood products. *Dev Biol Stand* 1993; **81**:147–61.
- 27 Schiff RI. Transmission of viral infections through intravenous immune globulin. Editorial. *N Engl J Med* 1994; **331**:1649–50.
- 28 Gardulf A, Andersen V, Björkander J *et al.* Subcutaneous immunoglobulin replacement in patients with primary antibody deficiencies: safety and costs. *Lancet* 1995; **345**:365–9.

Asmapheresis (or plasmaphoresis) is an experimental treatment in which blood is removed so that cells can be taken from the plasma and transfused back into you without the immunoglobulins and immune complexes in the plasma responsible for Graves' ophthalmopathy. This can be helpful in patients who have a rapidly progressing condition and are reserved for people who are not responding to other condition.

Finally- a plastic eye surgery is available to help excessive drooping of the upper or lower eye lids.

RITUXIMAB for Thyroid Eye Disease

“Rituximab appears to have a significant effect on thyroid eye disease that requires further randomized controlled studies”- this is what says a recent study about a new drug called Rituximab. Is Rituximab the new HOPE?

Silkiss RZ, Reier A, Coleman M, Lauer SA. Rituximab for Thyroid Eye Disease. Ophthalmol Plast Reconstr Surg 2010. DOI: 10.1097/IOP.0b013e3181c4dfde

Rituximab is an intravenously administered chimeric mouse-human monoclonal antibody that targets the CD20 antigen on pre-B and mature B lymphocytes. Hematopoietic stem cells, pro-B cells and normal plasma cells do not express the CD20 antigen, thus rituximab does not induce significant immunosuppression. The Food and Drug Administration approved rituximab in 1997 for the treatment of B-cell non-Hodgkin lymphoma, and in 2006 it was approved for the treatment of rheumatoid arthritis and is now being studied as a possible treatment for a number of other autoimmune diseases. Limited information has suggested that rituximab results in B cell depletion in the thyroid gland of patients

with Graves' disease, and a study of the decline in production of specific thyroid stimulating autoantibodies has been reported.

This is a prospective, open-label, interventional clinical trial study that reports the results of a phase I/II safety and efficacy trial of 12 patients treated with rituximab for TED and their 1-year posttreatment clinical course.

PATIENTS AND METHODS

This is a 2-center study registered as Clinicaltrials.Gov number NCT00424151, which recruited patients 18 years of age or older with relevant orbitopathy and Clinical Activity Scores (CAS) of 4 or greater. The demographic data that were collected comprised patient sex, age laterality of the orbitopathy (1 or 2 eyes), ethnicity, and smoking status at the time of presentation, with serum autoantibody levels including thyroid stimulating immunoglobulin (TSI) >125, thyrotropin (TSH) receptor antibody, or antithyroid peroxidase antibodies. Patients were required to have active ophthalmopathy not reversible with short-term glucocorticoid therapy and were offered rituximab as an alternative to long-term glucocorticoid therapy, radiation therapy, or surgery, and were required to have negative serology for hepatitis B, and C, and HIV. The exclusion criteria were hematologic abnormalities, a history of malignancy, psychiatric disorders, cardiac or pulmonary disease, pregnancy, or active lactation.

RESULTS

The mean age of the 12 patients that entered into the study was 52.1 years (range 34 to 80), 5 (41.7%) were men and 7 (58.3%) were women, 7 (58.3%) were white, 5 (41.7%) were Hispanic, 4 (33%) were smokers, 1 (8%) had unilateral and 11 (91.7%) had bilateral orbitopathy. Hyperthyroidism was present for 1 year or less in 7 patients, 2 to 3 years in 2 patients, and 4 years in 1 patient, and 1 was euthyroid.

Seven were treated with oral thyroid suppression (propylthiouracil, methimazole, or Cytomel, and 2 patients did not require treatment for hyperthyroidism, and none had pretibial myxedema.

Twelve patients with active TED were treated with 2 courses of Rituximab over a 2-week period, and there were no adverse effects of the Rituximab infusions and no reported side effects during the 1-year post infusion observation period.

CONCLUSION

Twelve patients with active TED were treated with 2 courses of Rituximab over a 2-week period. There were no adverse effects of the Rituximab infusions and no reported side effects during 1year after the infusion of the drug. There was a significant improvement in CAS scores that was observed 1 month after infusion of Rituximab that was sustained throughout the 12-month observation period.

In conclusion, Rituximab appears to be a drug with promise, but requires larger prospective randomized studies to settle the differences reported in the literature.

Will your bug eyes go away?

I believe that once your symptoms and thyroid levels (T3, T4 and TSH) are under control and all your thyroid test are within the normal range your eyes will start to improve gradually. Actually- the last symptom to disappear will be the Thyroid Eye Disease. The most important factor will be your thyroid antibodies, and they are the last to be fixed, so be patient. And there are no direct means to fix the thyroid antibodies- they will fix themselves after your TSH, FT3 and FT4 are within the normal range for at least few months. Then you'll be considered euthyroid.

This is a picture of me when I was diagnosed with Graves' disease- I don't have many pictures from this period, and this is not something I would like to remember. You can see the difference between both eyes, I definitely looked scary. The second picture is a picture of me for my last birthday (in November)- as you can see there is no sign that I ever had problems with my eyes.





Bottom line for this book is- NEVER lose hope! There are many ways to get help for your eyes and we never know which one will work best for you. Be patient and you'll see results, because Thyroid Eye Disease is probably the last symptom to disappear after your thyroid levels become normal again, including your thyroid antibodies.

I wish you good luck in the battle called Thyroid Eye Disease!

Svetla



Svetla Bankova is a former Graves' Disease patient and she also suffered from Thyroid Eye Disease. She cured herself even though the disease is considered "incurable", applying methods and techniques, that are not only natural-but include a deep understanding of the Human Nature and Psychology, as well as a profound psychological approach to our everyday life challenges.

She doesn't have Thyroid Eye Disease any more and her eyes look perfectly the same as they were before. She had experimented with many things- some of them worked, and some didn't. It took her 5 years, more or less, to figure out what helps and what doesn't.

The majority of patients with Thyroid Eye Disease appear to suffer, as she did, silently, trying to come to terms with the facial disfigurement that is caused by the disease. It is particularly unkind, distorting the most expressive, vivid and ageless feature of the face, the eyes.

And if you're still wondering if you'll EVER be able to get rid off YOUR buggy, protruded eyes, double vision and eye problems as well, then this book is for you and this is what's included in there:

- ◇30 Symptoms, the right diagnosis and classification, according NOSPECS
- ◇Holistic approach for TED. Why me? Why the Eyes? Understanding the reason behind the symptoms.
- ◇12 Thyroid Eye Disease Exercises.(guaranteed to help, collected and tried in the last 5 years) including pictures
- ◇30 Alternative Ideas, Tricks and Tips for relieving TED symptoms
- ◇Reflexology points to help your eyes (with graphics and pictures)
- ◇Alternative therapy in recipes and supplements.
- ◇The pure Medical approach- corticosteroids, radiation, surgery. Studies, dangers and options.
- ◇Intravenous Immunoglobulin Therapy Versus Prednisolone in TED.

Her book, 'Thyroid Eye Disease and Its Healing' is an easy-to-follow guide with powerful techniques that will dramatically influence how you feel.

It was written with a holistic approach, addressing not only the physical consequences of Thyroid Eye Disease, but also the emotional, spiritual and social ones as well and how to overcome them.