

Patient information

## **Thyroid Eye Disease**

St Paul's Eye Department

### **What is Thyroid Eye Disease?**

Thyroid eye disease (TED) is a condition that results in inflammation of the soft tissues and muscles around the eyes.

The condition is sometimes referred to as, Graves disease, Dysthyroid Eye Disease or Thyroid Associated Orbitopathy.

### **Who Develops Thyroid Eye Disease?**

Most people with TED have or will develop an overactive thyroid gland. The thyroid gland sits in the neck and produces hormones that regulate metabolism.

- 40% of TED occurs whilst the thyroid is overactive.
- 40% occur years after successful treatment of an overactive thyroid.
- 20% develop TED who have never had an overactive thyroid gland.

Thyroid eye disease affects women more than men, and in particular is much more severe in smokers.

## **What Causes Thyroid Eye Disease?**

Over activity of the Thyroid Gland and TED are both autoimmune diseases.

This means that the body produces antibodies, which react with the cells of the thyroid gland and the cells of tissues around the eye. In the thyroid gland, this results in an overproduction of thyroxine, a hormone that regulates metabolism. In the tissues and muscles surrounding the eye, however, the antibodies lead to inflammation and scarring (fibrosis).

Most people with TED have mild symptoms. These may continue for a few months or occasionally for one to two years and then settle down or resolve. Vision is seldom affected.

In about one in ten people the symptoms do get worse usually within a few months of the problem starting.

The commonest symptoms are soreness and grittiness of the eyes. There may be increased sensitivity to light. The eyelids may become puffy and the eyes appear “starey” or appear to bulge forward.

It is common for one eye to be affected more than the other. Inflammation of the muscles can cause an aching type of pain, worse on eye movement, particularly when looking upwards.

Double vision may occur either from involvement of the muscles of the eyes due to inflammation or scarring, or from displacement or misalignment of the eyes due to swelling of the tissues behind the eye.

Only 3-5% of people with TED develop severe eye involvement. In its most severe form vision can be affected either because of exposure of the front of the eyes because the eyelids cannot close properly, or because of compression of the nerve (optic nerve) at the back of the eye.

## **Can Thyroid Eye Disease be Prevented?**

Complete cessation of smoking cigarettes and careful checks of thyroid blood levels to avoid under activity, may reduce progression and severity of eye problems.

## **What Treatments are Available to Ease the Symptoms?**

### **❖ Irritation and Redness of the Eyes**

Temporary closure of the tear ducts and the use of artificial tears will help reduce the associated irritation brought about from the increased prominence and exposure of the eye.

### **❖ Puffiness**

Using extra pillows at night may help. The swelling tends to reduce with time but it may persist.

### **❖ Starey Eyes**

The prominence of the eyes tends also to settle with time. Depending on the degree of exophthalmos (prominence), immunosuppressive drugs such as steroids may be indicated. If the problem is particularly marked, then surgery may be indicated. This involves removing some of the bone surrounding the eyes.

### **❖ Double Vision**

If this only occurs occasionally, then no additional treatment may be needed. More persistent double vision can be treated with special lenses called prisms, which are fitted to a spectacle lens. Immunosuppressive drugs such as steroids, or radiotherapy may be indicated. Surgery can be considered when the inflammation of the muscles has settled down.

### ❖ **Deteriorating Vision.**

If there is a threat to sight then specialist treatment with immunosuppressive drugs such as steroids or radiotherapy may be indicated. In addition, surgery to decompress (relieve pressure on) the optic nerve may be required.

## **Treatment of Thyroid Eye Disease**

### ❖ **Selenium**

Selenium is a trace mineral, which is thought to work because of its antioxidant properties. Some people with mild TED have reported a degree of improvement in their symptoms. The dose is 200 micrograms / day.

### ❖ **Immunosuppressive Drugs**

These are usually only given for the more severe forms of TED. Steroids are the most commonly used immunosuppressant and can be administered in tablet form or by intravenous infusion. Side effects include weight gain, a rise in blood pressure and in prolonged use at high dose, diabetes or thinning of the bones. There are a number of other immunosuppressants, which are given alone or in combination with steroids.

### ❖ **Radiotherapy**

This involves irradiation to the tissues around the eyes. It is beneficial in reducing the inflammation of the tissues behind the eye. It is usually given in ten dosages over two weeks and is sometimes given with steroids. About two thirds of patients find significant benefit while one third do not.

## ❖ **Orbital Decompression Surgery**

This is an operation where some of the bone around the socket of the eye is removed to create more room. When TED is in the active inflammatory phase this operation is usually only performed for sight threatening disease.

When the inflammatory phase has passed the operation is sometimes performed to reduce the protrusion of the eyes.

## **Eye Muscle and Surgery and Eye Lid Surgery**

Eye muscle surgery is performed to reduce the double vision. The effect of the surgery, however, is limited and may not completely take away the double vision. Prisms in spectacles are often still required following surgery.

Lid surgery is undertaken to improve coverage of the eyes and may improve the appearance of the eyes.

Both eye muscle and eyelid surgery are only performed when the inflammation has subsided and once symptoms are stable.

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## Further information

**Any problems or queries contact the Orthoptic Department**

**Monday to Friday 8.30am to 4.30am**

**Tel: 0151 706 3914**

**Text phone number: 18001 0151 706 3914**

**After 6pm – 9pm or during the day at the weekend (Liverpool):**

**St. Paul's Primary Care Clinic**

**Tel: 0151 706 3949**

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