

Thyroid eye disease

This leaflet is for patients with thyroid eye disease and explains the treatment, including risks and benefits.

What is thyroid eye disease?

It is the most common disease of the eye socket and is still not completely understood but it is an autoimmune eye condition (where the immune system attacks the body's own tissues). There are many different names you might hear for the condition, which is often seen with thyroid disease. These include:

- Thyroid eye disease (TED)
- Graves' ophthalmopathy
- Thyroid-associated orbitopathy (TAO)
- Graves' orbitopathy

While thyroid eye disease is a separate condition from thyroid disease, it is often seen in conjunction with Graves' disease, an immune-related disease of the thyroid gland. However, the condition is seen in people with no other evidence of thyroid dysfunction, and occasionally in patients who have other thyroid problems, such as Hashimoto's disease. Most thyroid patients will develop minimal or only mild thyroid eye disease.

Who is at risk of thyroid eye disease?

Thyroid eye disease is a condition that occurs in about 50% (half) of patients who currently have, or have had, Graves' hyperthyroidism. However, around 10% (one in ten) of patients who have this eye disorder never develop hyperthyroidism. The reasons for the association of hyperthyroidism with the eye disease are not completely understood.

Graves' eye disease, like Graves' hyperthyroidism and Hashimoto's thyroiditis, is an autoimmune disorder. It is caused by the reaction of antibodies and certain white blood cells called lymphocytes, with proteins in eye muscle and the connective tissue and fat around the eyeball. This condition must be distinguished from the mild eye signs of protruding ('poppy') eyes and spasm of the eyelids, which occur in most hyperthyroid patients due to an effect of excessive thyroid hormones.

Smokers are known to suffer with a more severe form of the disease so it is important that you stop smoking to protect your eye health.

What are the signs and symptoms?

Signs and symptoms include:

- Pain in the eyes, pain when looking up, down or sideways.
- Dryness, itching, difficulty wearing contact lenses.
- Inflammation and swelling of the eye, and its surrounding tissues.
- Swelling in the orbital tissues which causes the eye to be pushed forward – referred to as exophthalmos – which can make thyroid eye disease sufferers appear to have a wide-eyed or bulging stare.
- Bloodshot appearance to eyes.
- Double vision (doctors call it diplopia).
- Impaired vision.

Thyroid eye disease is known to go through varying degrees of severity, and can go into periods of remission (a lessening of symptoms) as well. When it has been inactive for a period of around a half a year, it is less likely to recur.

How is thyroid eye disease treated?

Treatment is aimed at improving the symptoms of the disease. Smoking may worsen symptoms and you should stop.

- **Irritation, foreign body sensation and redness:** artificial tears will usually help. These drops are harmless and can be applied as often as required. You may also be prescribed a lubricating ointment to use at night. If your eyelids are not closing completely, they may be taped closed at night.
- **Puffiness around the eyes:** this is usually worse in the mornings after lying flat in bed so using extra pillows may help. You may also consider using a diuretic (water tablet) at night. Usually the swelling does improve after several months. In severe cases, surgery is sometimes used to improve the appearance.
- **Exophthalmos ('poppy' eyes):** if mild, this problem usually gets better with time as the eyes settle. When it is severe or present for a long time, surgery may be considered to help partially close the lids by lowering the upper lids and/or raising the lower lids.
- **Double vision:** there is no medicine that improves the ability of muscles to move (and thus relieve double vision). It may be possible to optically realign

eyes with the use of prisms either applied to glasses or ground into the lens although this may not be effective until things stabilize. When double vision cannot be corrected with prisms, eye muscle surgery may be necessary. In most cases, eye surgeons choose to wait until the double vision is stable. If an operation is required on a patient who is undergoing progressive change, they may be corrected now but have things change within the next few months. It is sometimes not possible to completely remove double vision, but the goal is to remove double vision looking straight ahead and in reading position, as these are the most important directions of sight.

- **Deteriorating vision:** fortunately, optic nerve problems resulting in decreased vision are uncommon. If it does happen, treatment is aimed at shrinking the muscles, usually by the use of high dose steroids. For those patients who will not tolerate steroids, radiation therapy may be of benefit. If the muscles cannot be made small enough to relieve the compression of the optic nerve (resulting in decreased visual sharpness) then the eye socket can be made larger. This is usually done surgically by removing one or more of the bony walls of the eye socket. This may be done directly (through the soft tissues or skin around the eye) or via the nose.

To further reduce the eye bulge, the floor, lateral wall, or even the roof of the eye socket may be removed. One of the problems with this surgery is that it can affect eye movements, thus changing the pattern of double vision (if it already exists) or potentially producing double vision in those patients who didn't have it before surgery. This kind of surgery may also be performed to improve the cosmetic appearance of the eyes.

Useful contacts

Thyroid Eye Disease Charitable Trust

Tel: 07469 921782

Website: <http://tedct.org.uk/> Email: info@tedct.org.uk

British Thyroid Association

Website: www.british-thyroid-association.org

Smokefreelife Berkshire

Helpline: 0800 622 6360 / 0118 449 2026

Website: www.smokefreelifeberkshire.com/

Contacting us

If you have a minor eye problem, please seek advice from your GP, optician or pharmacist. If urgent, please attend Eye Casualty or call 111.

Eye Casualty (Reading):	Mon-Fri 9am to 5pm; Sat & Sun & bank holidays 9am-12.30pm; Closed Christmas Day and New Year's Day.
Eye Casualty: Prince Charles Eye Unit (Windsor):	Mon-Fri 9am to 5pm; Sat 9am-12.30pm; Closed Sun & bank holidays.
Dorrell Ward (Reading):	0118 322 7172 (24 hours a day)
Eye Day Unit (Reading):	0118 322 7123 (Mon-Fri 7am to 6pm)

To find out more about our Trust visit www.royalberkshire.nhs.uk

Please ask if you need this information in another language or format.

RBFT Ophthalmology, June 2023

Next review due: June 2025