

### What is TED?

Thyroid eye disease (TED) is an autoimmune condition. It occurs when the body's immune system attacks the tissue surrounding the eye causing inflammation of eye muscles, eyelids and fatty tissues behind the eyes. This can cause the eyes and eyelids to become red, swollen and uncomfortable. The eyes are pushed forward giving a 'bulging' or a 'staring' appearance.

### Who does TED affect?

Around 25% patient with Hyperthyroidism (Graves' disease) develop TED either before, during, or after their thyroid disorder is diagnosed. Although, more common in hyperthyroid (raised T3, T4 and low TSH), TED can also affect patients who are hypothyroid (low T3, T4 and raised TSH) or even Euthyroid (normal T3, T4 and TSH). People who smoke or have a family history of TED are at higher risk of developing TED.

### What are the symptoms of TED?

These are the most common symptoms:

- Change in the appearance of the eyes (usually staring or bulging eyes)
- A feeling of grittiness in the eyes or excessive dryness in the eyes
- Watery eyes
- Intolerance of bright lights
- Swelling or feeling of fullness in upper or lower eyelids
- New bags under the eyes
- Redness of the lids and eyes
- Blurred or double vision
- Pain in or behind the eye, especially when looking up, down or sideways
- Difficulty moving the eyes

Symptoms of  
THYROID EYE DISEASE



Bulging



Inflammation



Dryness



Bloodshot



Pain



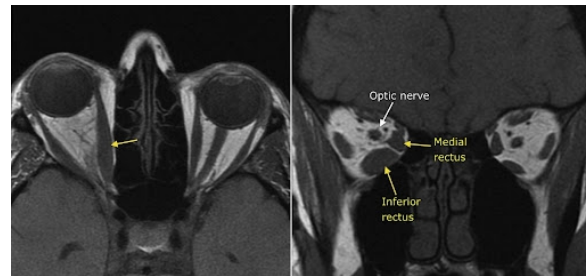
Impaired vision

### What tests are done to diagnose TED?

If clinical examination is suspicious of TED, the doctors may ask for some tests:

**Blood tests:** Thyroid function tests (T3, T4, TSH), Thyroid antibodies- TPO antibody, TSH receptor antibody or Thyroglobulin antibody. **Computed tomography (CT scan) or Magnetic resonance imaging (MRI) of orbits** to look for swelling of tissues behind the eyeball and to exclude risk of optic nerve compression.

If clinical sign suggests double vision, Hess charting can be done. If intraocular pressure is raised, glaucoma investigations such as OCT RNFL, visual fields and central corneal thickness need to be done. If there is corneal compromise, relevant investigations can be done.



### Is there a relationship between smoking and TED?

Chance of developing TED is doubled in patients who smoke as compared to non-smokers.

Smokers tend to get worse TED and are less likely to respond to prescribed treatment. Recurrences are more common in them.

### How can TED be managed?

Treatment protocol differs for every patient depending upon their presentation and symptoms.

### Lifestyle changes and home remedies -

- Wear sunglasses to help with light sensitivity.
- Apply cool compresses on the eyes to reduce irritation and swelling.
- Sleep with slight head up posture (2-3 pillows) to reduce swelling of eyelids.
- Quit smoking.
- Reduce stress with regular exercise
- Do not drive if there is double vision in straight gaze.

### Treatment of mild cases:

Lubricants: These are required if eyes feel gritty, water a lot and feel uncomfortable in bright lights.

### Treatment of inflammatory (active) TED:

- Steroid: They can be given orally or via intravenous route in patients who present with double vision, pain and/or visual compromise
- Selenium supplements: Mildly active TED respond very well to Selenium supplementation. Brazil nuts are one of the good source of this micro-nutrient.
- Anti-Glaucoma medication: To optimize intra-ocular pressure if it is raised.
- Prisms: to help with double vision. Eye patch may be given to temporarily alleviate double vision.

### Treatment of inactive stable phase:

Unfortunately, some people with TED are left with permanent double vision or a change in the appearance of their eyes. Rehabilitative surgery are planned once inflammation has completely settled and thyroid function tests (T3, T4, TSH) are stable for at least 3 months.

- Orbital Decompression surgery to reduce eye bulging.
- Eye muscle surgery to treat double vision.
- Eyelid surgery to treat upper lid retraction, lower lid retraction or fat prolapse.

### Is there a chance of recurrence of active TED?

Once resolved, active TED can only recur in following 2 conditions:

1. If Thyroid function test is unstable/ fluctuating.
2. If the patient continues to smoke.

### What are the 'Warning sign' or 'Red Flag' signs I should look for if I have Thyroid disorder?

You should see your Ophthalmologist urgently, if you notice one or more of following symptoms:

- Pain in eyes with or without eye movements
- New onset double vision
- Blurring of vision
- Recent change in bulging of eyes
- Colors not appearing as bright as before in one or both eyes



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