

## THYROID EYE DISEASE

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Thyroid-associated orbitopathy (TAO) (also known as Graves ophthalmopathy, dysthyroid ophthalmopathy, thyroid eye disease, and other terms) is an autoimmune inflammatory disorder that can have severe effects on one's eyes and vision. The clinical signs of TAO are characteristic and usually easily recognized by ophthalmologists and primary care physicians. These signs include: (Figures 1 and 2)

- Eyelid retraction (eyelids more wide-open)
- Proptosis (bulging eyes)
- Restriction of eye muscles often causing double vision
- Pain in or behind the eyes
- Redness and swelling of the eyes and eyelids
- Vision loss due to compression of the optic nerve

TAO is usually associated with abnormalities of the thyroid such as Graves hyperthyroidism (90% of cases) but may also be seen without thyroid dysfunction in about 6% of cases. Additionally, the course and severity of the eye disease does not necessarily

coincide with the activity of the thyroid gland or the treatment of the thyroid abnormalities. In approximately 60% of patients, the eye disease occurs within 1 year of the onset of the thyroid disease but some patients have known thyroid problems for years before any signs of TAO are seen.

Thyroid orbitopathy is due to an autoimmune inflammatory process targeting the orbital fibroblasts and orbital fat cells. Proptosis occurs due to enlargement or hypertrophy of fat in the orbit (Type 1 TAO) or enlargement of the extraocular eye muscles (Type 2 TAO) leading to characteristic findings on orbital CT scans (Figures 3 and 4).

TAO affects women approximately 6 times more frequently than men (86% versus 14% of cases). The overall incidence rate for women is about 16 cases per 100,000 whereas the rate for men is estimated 3 cases per 100,000 per year.

One extremely important environmental factor associated with TAO is exposure to cigarette smoke. Dr. William Nunery found that smokers (or even patients who live closely with smokers) are up to 7 times more likely to develop TAO. Those patients who smoke are also more likely

to have more severe orbital inflammatory signs and are more at risk for vision loss.

Treatment for TAO depends on the severity of the disease. Treatment of the underlying thyroid abnormality by an endocrinologist is an important part of the care. Patients suspected of having TAO should also be referred to an orbital specialist for evaluation and treatment of the eye disease. Patients with mild eye findings may only require topical ocular lubricants to treat the symptoms. Patients with severe inflammation and compressive optic neuropathy may require systemic steroids or surgery to decrease the orbital inflammation and preserve vision.

*To schedule an appointment call 502-588-0550.*



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Figure 1 – Bilateral upper and lower eyelid retraction and proptosis of in a young female patient with TAO.



Figure 2 – Middle-aged male patient with esotropia ("crossing eyes") as well as eyelid retraction, proptosis, red or injected eyes, and eyelid swelling.

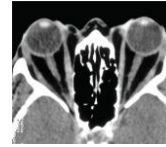


Figure 3 – Type 1 TAO with hypertrophy of orbital fat and bilateral proptosis. The extraocular muscles appear normal in size.



Figure 4 – Type 2 TAO with bilateral extraocular muscle enlargement. Due to the abnormally large extraocular muscles, the optic nerve is at risk for compression leading to vision loss.

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