

Understanding thyroid eye disease

Thyroid eye disease (TED) is an autoimmune disease. The immune system mistakenly activates growth in the muscle, connective tissue and fat around the eye and may also cause inflammation around the eye.^{1,2}

Symptoms may vary from one person to another, but may include:¹



Red, irritated eyes

Swollen, bulging eyes (proptosis)



Chronic watery eyes

Blurred vision or double vision (diplopia)



Difficulty or pain when moving eyes



These symptoms can have a significant impact on an individual's emotional well-being and quality of life¹

- ⚠️ Decreased desire to socialize
- ⚠️ Impact on the ability to drive, work on a computer or step off a sidewalk
- ⚠️ Potential vision damage/loss

SPOTLIGHT: the thyroid



Thyroid

- + Produces hormones that help regulate the body's metabolism and keep the brain, heart, muscles, and other organs working³
- + Too many, or too few, of these hormones may lead to a range of symptoms⁴



TSHR

- + Thyroid-stimulating hormone receptor is a protein involved in thyroid function⁵
- + It can be found on thyroid cells, as well as other cells throughout the body⁶

TED most commonly occurs in people with an overactive thyroid (hyperthyroidism) due to Graves' disease¹

- Graves' disease is an autoimmune disease where harmful IgG autoantibodies bind to TSHR in the thyroid, causing symptoms^{1,4}
- TED may also occur in people who have an underactive thyroid (hypothyroidism) or overactive thyroid before thyroid-related symptoms have occurred¹

In people with TED, harmful IgG autoantibodies target TSHR in tissue around the eye, causing symptoms¹

- Anti-TSHR antibodies can also cause the thyroid to release excess thyroid hormones⁷
- There is emerging scientific understanding that TSHR may influence activity of another protein, insulin-like growth factor 1 receptor (IGF-1R), which may also play a role in symptoms^{7,8}

At Immunovant, we believe FcRn-targeted therapies may help transform care for people with autoimmune disease

By blocking FcRn, the body removes harmful IgG autoantibodies, potentially alleviating symptoms in various autoimmune diseases, including thyroid eye disease.



Learn more about how we're reframing expectations in autoimmune disease at [Immunovant.com](https://immunovant.com)

IgG = immunoglobulin G

References: 1. National Organization for Rare Diseases. Thyroid Eye Disease. Available at: <https://rarediseases.org/rare-diseases/thyroid-eye-disease/> Accessed June 27, 2022. 2. National Library of Medicine. Autoimmune diseases. Available at: <https://medlineplus.gov/autoimmunediseases.html>. Accessed June 3, 2022. 3. American Thyroid Association. Graves' Eye Disease. Available at: <https://www.thyroid.org/graves-eye-disease/> Accessed June 27, 2022. 4. The Mayo Clinic. Graves Disease. Available at: <https://www.mayoclinic.org/diseases-conditions/graves-disease/symptoms-causes/syc-20356240>. Accessed August 4, 2022. 5. National Institute of Health. TSHR gene. Available at: <https://medlineplus.gov/genetics/gene/tshr/> Accessed June 27, 2022. 6. Davies, T.F., Andersen, S., Latif, R. et al. Graves' disease. *Nat Rev Dis Primers*. 2020 Jul 2;6(1):52. 7. Kahaly GJ. Management of Graves Thyroidal and Extrathyroidal Disease: An Update. *J of Clin Endocrin & Metab*. 2020 Dec 1; 105(12):3704-3720. 8. Krieger CC et al. Bidirectional TSH and IGF-1 Receptor Cross Talk Mediates Stimulation of Hyaluronan Secretion by Graves' Disease Immunoglobulins. *J of Clin Endocrin & Metab*. 2015 Mar 1; 100(3):1071-1077.