Thyroid peroxidase (TPO) antibodies occur in people with autoimmune thyroid disease and other autoimmune conditions, and they’re seen in the healthy population.

Thyroid antibodies are a type of autoantibody. Autoantibodies are antibodies that target specific proteins normally found in the body. There are several types of thyroid antibodies including antibodies directed against thyroglobulin, thyroid peroxidase, thyroxine (T4), triiodothyronine (T3), thyrotropin (thyroid stimulating hormone or TSH), and the TSH receptor. Thyroid peroxidase antibodies target the thyroid peroxidase enzyme that assists in the production and metabolism of thyroid hormone.

In Thyroid Disease

Thyroid peroxidase antibodies are seen in nearly all patients with Hashimoto’s thyroiditis and 70 percent of patients with Graves’ disease. Recent studies show that unlike thyroglobulin antibodies, TPO antibodies are indicators of thyroid inflammation. Therefore these antibodies are often seen in people with chronic inflammatory conditions, including urticaria and rheumatoid arthritis. In up to 26 percent of healthy women, low levels of TPO antibodies are seen, and the incidence of these antibodies increases with age. In the normal healthy population, when TPO antibodies are accompanied by a TSH level higher than 2.0, they suggest an increased risk for developing Hashimoto’s thyroiditis.

Prevalence in Other Conditions

In Addison’s disease, TPO antibodies are seen in 10-50 percent of patients. Approximately 30 percent of patients with Addison’s disease have a co-existing autoimmune thyroid disorder.

In patients with alopecia areata, TPO antibodies are seen in 5-15 percent of patients. Approximately 5-15 percent of patients with alopecia areata disease have a co-existing autoimmune thyroid disorder.

In celiac disease, TPO antibodies are seen in 5-50 percent of patients. Approximately 5 percent of patients with celiac disease have a co-existing autoimmune thyroid disorder. Among patients with autoimmune thyroid disease, intolerance to gluten or gluten sensitivity, which is a variant of celiac disease, is seen in up to 10 percent of patients.

In pernicious anemia, TPO antibodies are seen in 50 percent of patients. Approximately 10-25 percent of patients with pernicious anemia have a co-existing autoimmune thyroid disorder.

In primary biliary cirrhosis (PBC), TPO antibodies are seen in 30-40 percent of patients. Approximately 20-30 percent of patients with PBC have a co-existing autoimmune thyroid disorder.
In rheumatoid arthritis, TPO antibodies are seen in 10-30 percent of patients. Approximately 5-10 percent of patients with rheumatoid arthritis have a co-existing autoimmune thyroid disorder.

In Sjogren’s syndrome, TPO antibodies are seen in 50 percent of patients. Approximately 20-30 percent of patients with Sjogren’s syndrome have a co-existing autoimmune thyroid disorder.

In systemic lupus erythematosus (SLE), TPO antibodies are seen in 15-50 percent of patients. Approximately 5-10 percent of patients with SLE have a co-existing autoimmune thyroid disorder.

In type 1 diabetes, TPO antibodies are seen in 20 percent of patients. Approximately 5-10 percent of patients with type 1 diabetes mellitus have a co-existing autoimmune thyroid disorder.

In vitiligo, TPO antibodies are seen in 30 percent of patients. Approximately 10-20 percent of patients with vitiligo have a co-existing autoimmune thyroid disorder. Approximately 7 percent of patients with Graves’ disease have vitiligo and it is even more common in patients with Hashimoto’s thyroiditis.