



## Role of the Thyroid Gland in Diabetes Management

**Boris Riedmeier**

Department of Biochemistry, Modern Sciences and Arts University, Cairo, Egypt

**Corresponding author:** Boris Riedmeier, Department of Biochemistry, Modern Sciences and Arts University, Cairo, Egypt; E-mail: riedmeierb@msa.eun.eg

**Received date:** 02 February, 2023, Manuscript No. ECDR-23-95326;

**Editor assigned date:** 06 February, 2023, Pre QC No. ECDR-23-95326(PQ);

**Reviewed date:** 20 February, 2023, QC No. ECDR-23-95326;

**Revised date:** 27 February, 2023, Manuscript No: ECDR-23-95326(R);

**Published date:** 06 March, 2023, DOI: 10.35248/2470-7570.100328.

### Description

The thyroid gland is an important endocrine gland located in the neck. It produces thyroid hormones that regulate metabolism in the body, which is important for maintaining healthy blood glucose levels. Diabetes is a chronic metabolic disorder that affects millions of people worldwide. The role of the thyroid gland in diabetes is complex, and this article will discuss the various ways in which the thyroid gland affects diabetes. The gland produces two hormones, triiodothyronine (T3) and thyroxine (T4), which are essential for regulating the body's metabolism. These hormones play an important role in body's glucose metabolism. Thyroid hormones increase glucose absorption by cells and stimulate glucose oxidation in tissues, which is necessary for energy production. In individuals with hypothyroidism, the thyroid gland does not produce enough hormones, which can cause the body's metabolism to slow down, leading to decreased glucose uptake by cells and decreased insulin sensitivity. As a result, hypothyroidism is often associated with an increased risk of developing type 2 diabetes.

Furthermore, the thyroid gland also plays a role in the development of diabetic complications. Individuals with diabetes are at an increased risk of developing thyroid disorders such as hypothyroidism and hyperthyroidism. Thyroid disorders can exacerbate the symptoms of diabetes and increase the risk of diabetic complications.

Hypothyroidism in individuals with diabetes can worsen insulin resistance, which can lead to high blood glucose levels and an increased risk of cardiovascular disease. Hyperthyroidism, on the other hand, can increase the risk of hypoglycemia in individuals with diabetes, which can be life-threatening. Moreover, the thyroid gland also affects the metabolism of insulin, which is the hormone responsible for regulating blood glucose levels. Insulin is produced by the pancreas and is responsible for the uptake of glucose by cells. In individuals with hypothyroidism, the body's metabolism slows down, which can cause insulin resistance, leading to high blood glucose levels. Conversely, hyperthyroidism can increase the metabolism of insulin, leading to hypoglycemia in individuals with diabetes.

The thyroid gland also affects the levels of other hormones that play a role in diabetes. For example, thyroid hormones increase the levels of growth hormone, which is important for regulating blood glucose levels. Growth hormone stimulates the liver to produce glucose, which is essential for maintaining blood glucose levels during periods of fasting. In individuals with hypothyroidism, the levels of growth hormone are decreased, which can lead to decreased glucose production by the liver, leading to low blood glucose levels. Additionally, it also affects the levels of cortisol, a hormone that plays a role in regulating blood glucose levels. Cortisol is produced by the adrenal glands and is responsible for increasing blood glucose levels during periods of stress. In individuals with hypothyroidism, the levels of cortisol are decreased, leading to decreased glucose production by the liver, which can cause low blood glucose levels. In contrast, individuals with hyperthyroidism have increased cortisol levels, which can lead to increased glucose production by the liver, leading to high blood glucose levels.

Finally, the levels of adiponectin, a hormone that plays a role in regulating glucose metabolism. Adiponectin is produced by fat cells and is responsible for increasing insulin sensitivity and decreasing glucose production by the liver. In individuals with hypothyroidism, the levels of adiponectin are decreased, leading to decreased insulin sensitivity and increased glucose production by the liver. This can cause high blood glucose levels and an increased risk of developing diabetes. In contrast, individuals with hyperthyroidism have increased adiponectin levels, which can lead to increased insulin sensitivity and decreased glucose production by the liver, leading to low blood glucose levels.

**Citation:** Riedmeier B (2023) Role of the Thyroid Gland in Diabetes Management Endocrinol Diabetes Res 9:1.