



Cumbria Advisory Thyroid Service



INFORMATION SHEET

THYROID – WHAT IS IT?

The thyroid is an endocrinal gland – the endocrinal system produces various hormones and chemicals vital for normal functioning of the whole body.

The thyroid gland is a small bow-shaped piece of tissue lying at the base and in the front of the neck. Its main function is to produce the hormone known as thyroxine. This gland is vital in controlling a number of metabolic functions which can affect any part of the body and the symptoms of low or high can be quite dramatic. It is involved in the development and function of the nervous system, muscular development, skeletal growth, smooth functioning of the digestive system, reproductive ability and hydration and secretion of the skin.

Too much release of this hormone leads to a condition broadly known as **hyperthyroidism** and too little release leads to the condition known as **hypothyroidism**.

The two regulating hormones involved – thyroid-stimulating hormone (**TSH**), produced by the pituitary gland of the brain, and thyroid-releasing hormone (**TRH**), produced by another brain structure, the hypothalamus.

Falling levels of thyroid hormones trigger the release of TRH, which in turn, stimulates the release of TSH, causing the thyroid gland to produce more hormones.

Conversely, when levels of thyroid hormones are too high, less TRH is produced, reducing the level of TSH and reducing the levels of thyroid hormones.

In other words if we suffer from hypothyroidism our levels of TSH will be higher than 'normal' which indicates that we are not producing enough hormone. Similarly if we suffer from hyperthyroidism then the level of TSH will be lower than 'normal' indicating an over production of hormone.

HYPERTHYROIDISM

An overactive thyroid is a common clinical condition known as thyrotoxicosis. It can be permanent or a temporary condition. It affects around 2% of the UK population, and is approximately three times more common in females.

There are 3 major causes of increased thyroid activity:

- Graves' disease
- Toxic solitary nodule
- Toxic multinodular goitre

Graves' disease is the most common form of thyrotoxicosis. It results from a complex auto-immune process by which the body produces specific antibodies that stimulate the thyroid hormone. A toxic solitary nodule is a rare cause of thyrotoxicosis. The nodule is a benign cluster of cells, which produces an excess concentration of thyroxine and may be detected by a scan using radioactive isotope. Multinodular goitres occur mostly in the post-menopausal women.

In all forms of overactive thyroid, the excess thyroxine production may cause heat intolerance, excessive sweating, increased pulse, palpitations, anxiety and mood swings. In Graves' disease there may also be a protusion of the eyes (exophthalmos) and swollen eyelids.

HYPOTHYROIDISM

Underactive thyroid function is also known as hypothyroidism (hypo – denoting a lack or deficiency) or is also called Myxoedema (fluid in the tissues).

This is the result of deficiencies of the hormones thyroxine and triiodothyronine produced by the thyroid gland. In the UK it affects 1.5% of females and 0.1% of males.

The most common cause in the past was a lack of iodine in the diet. However, it has now been established that this condition is most often the result of previous treatment for thyrotoxicosis (hyperthyroid) and autoimmune disease.

It can also manifest itself in women at the time of pregnancy and the menopause – an interaction of hormonal changes at those times.

Lifelong medication replacing thyroxine is established in order to restore the metabolism to its normal level. After the first year (where blood tests are taken at least every three months) the patient needs a yearly blood test to monitor the condition and adjust the dosage.

Because of other medical factors it is always wise to administer dosages gradually.

HYPERTHYROID – TREATMENTS

There are 3 main treatments of thyrotoxicosis:

- Anti-thyroid tablets (e.g. Carbimazole)
- Radioiodine
- Surgery

Eventually these treatments may lead the patient towards hypothyroidism and administration of thyroxine for life may ensue.

THYROID SCREENING

All new-born babies

Depression

As above after treatment for hyperthyroid

Continued lethargy

Patients with a history of neck irradiation

Pregnant women with diabetes

Before and during treatment with lithium or amiodarone

Down's Syndrome

Following pituitary surgery or exposure to radiation

Turner's Syndrome

Patients with Addison's disease (failure of the adrenal cortex)

Those with a family history – not only of thyroid but any autoimmune disease

Unexplained infertility

C.A.T.S RECOMMENDS YOU ALWAYS SEEK YOUR DOCTORS ADVICE

Disclaimer

The purpose of this information leaflet is to help those suffering with thyroid disease. Whilst every effort is made to provide accurate information, it is impossible to ensure that the information given is relevant to every individual. No responsibility is accepted by CATS and it is recommended and essential, that if in any doubt about your condition, that you should always contact your doctor, specialist physician or surgeon to seek medical advice.