



THYROID FLYER

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Newsletter of Thyroid Australia Ltd

Volume 3 No 2 April 2002

Feature - Thyroid Related Conditions

Editorial

By Christopher McDermott

Welcome to the second edition of the *Thyroid Flyer* for 2002. We have chosen as a theme for this issue the connection between thyroid and other diseases. I found the articles really interesting when I first read them - or in the case of Dr Richard Arnott's - when I heard it given at our AGM last year.

Somehow I am just not surprised that problems with the thyroid can be connected to other problems that the body might suffer. The symptoms of thyroid conditions seem to affect almost every bodily organ or function. My own experiences of Graves' disease for over four years - and the experiences of others I hear from, being a telephone volunteer and going to our public meetings - give me plenty of evidence of the enormous range of symptoms that people must deal with and try to interpret.

The article by Dr Arnott is about other auto-immune conditions such as Type 1 diabetes and Addison's disease. The chance of someone with a thyroid condition developing one of these other auto-immune conditions may be slightly higher than normal. Other articles are about thyroid conditions and heart disease, the common combination of Graves' and thyroid eye disease with the ever present stress in our lives, and a member's story about Hashimoto's and coeliac disease.

Unfortunately we also have more bad news for the smokers among you. As well as all the other risks associated with smoking, it would appear smoking is also bad for the thyroid.

On other matters completely different, we have a couple of public meetings com-

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Graves' & Hashimoto's Diseases as Autoimmune Conditions

By Dr Richard Arnott

Graves' Disease is the most common cause of hyperthyroidism (overactive thyroid) in younger people and Hashimoto's Disease is the most common cause of hypothyroidism (under active thyroid). This article focuses on the nature of autoimmune thyroid conditions and their association with other non thyroidal illnesses.

Thyroid hormone has a profound effect on human development and metabolism. An excess or deficiency of thyroid hormone (hyper- or hypothyroidism) can cause considerable ill health. The cause of these conditions is often an autoimmune dysfunction. Autoimmune conditions are brought about by the body producing antibodies or other immune defence mechanisms which are directed against tissues of the body. These antibodies can cause inflammation in the thyroid and:

- May be stimulatory to thyroid function - leading to hyperthyroidism;
- May be destructive to the thyroid - leading to atrophy of the thyroid and hypothyroidism, or;
- Sometimes growth of the thyroid - goitre.

There are two components of the normal immunological response upon exposure to a foreign agent (which is usually called an *antigen*). Foreign agents such as bacteria, viruses, chemicals or toxins upon exposure to the body, are initially processed by cells called macrophages. These cells internalise (swallow) the foreign agents then expose them to other immune cells in such a manner as to stimulate two processes:

- One process leads to the production of circulating antibodies. These are molecules which attach to other molecules or agents in the body which have a similar structure to the original antigen. This process initiates an inflammatory process aimed at eradicating the foreign antigen.
- The second process occurs via the priming of certain immune cells to also seek out the foreign antigen and contribute to the subsequent inflammatory process which aims to destroy the antigen.

The macrophages and other elements of the immune system are also continuously exposed to the cells and molecules of the body itself so one might expect the body to produce an immune response to its own antigens. This does not normally happen because all cells in the body have a special marker on them called the Histocompatibility Locus Antigen (HLA) which is like a bar code which the immune system recognise as 'Self'. The process of autoimmune response involves a breakdown of this mechanism. Why this process breaks down is not entirely clear but two factors play a role.

Firstly there is an inherited susceptibility to this process. This susceptibility also includes other non thyroidal conditions. Secondly there is a chance factor involved and this may relate to the exposure to certain specific antigens in the environment. Thus, of two people with the same susceptibility to thyroid autoimmune disease, one

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Next Public Meeting 11 May. See Back Page.

THYROID AUSTRALIA

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Membership is not expensive and your money goes towards the costs of maintaining and hosting this site, staffing our office, producing our newsletter and researching thyroid problems and treatments.

Please visit the About Us section of our web site for details of how you can join Thyroid Australia and help us help others just like you.