THYROID FLYER

Newsletter of Thyroid Australia Ltd — Volume 5 No 1 March 2004

Inside

Back to Basics

Editorial

By **Gail Pascoe**

We have great news for you all. We have been granted approval to share a community facility office in Mount Waverley (a suburb of Melbourne) with the Thalassaemia Society of Victoria. We are so grateful to their Board of Directors and Ms Sandra van Lith for making this decision and their wonderful support. We are also most thankful to the City of Monash who granted us approval to share the facility.

We are in the throes of making arrangements to move in to the office, hopefully by the end of March. Our phone number and email address will stay the same, but our fax number and postal address are likely to change. We will give you the new details when we have them. What will be wonderful is the opportunity for members to pop in and say hello. We will have room for meetings and coffee mornings. The office is easily accessible from the Monash Freeway and there is loads of parking. It is also on a major bus route a few kilometres from the Mount Waverley station.

For the future this is a wonderful step forward for our organization. We will be able to utilise the services of many of our members who have volunteered their help, but until now it has been very difficult for them to assist, because we didn't have a suitable office. We are beginning the process of setting up our computer and communications systems and furniture, then we will be arranging rosters and training of volunteers. Like to help? Do you have general admin experience? Do you have a day (6 hours) a week or fortnight? Let us know, we would love to hear from you.

We don't yet have all the furniture we need. Do you have an old desk, office chair, shelves or a Macintosh com-

Continued Page 12

Thyroid Disease - The "Problem"

By **Prof Jack Wall**

Thyroid disorders are common, affecting over 30% of women, and 3% of men. Hashimoto's thyroiditis is the most common autoimmune disorder that affects humans, and about 15% of women will develop this disorder at some time in their lifetime. The end result of this chronic destructive process is hypothyroidism. About half of these women have subclinical hypothyroidism which is defined as normal blood thyroxine (measured as free T_4), positive thyroid antibodies – the marker for autoimmunity of the thyroid – and increased TSH as the pituitary gland tries to "fire up" the failing thyroid, but no symptoms. Many of these people do in fact have symptoms but since they are all "non specific", treatment (with thyroxine) is often delayed for long periods. Recent studies about the significance of subclinical and early hypothyroidism re-enforces the notion that treatment should be as early as possible.

Graves' disease, the most common cause of hyperthyroidism, affects about 1% of women and 0.1 % of men. A unique antibody, called TSH receptor antibody (TRAb), which stimulate the thyroid cell to grow, divide and secrete large amounts of thyroid hormones, causes this autoimmune disorder. About 10% of patients with Graves' disease have associated cardiac problems such as rapid or irregular heartbeat or large heart (cardiomyopathy). Very rarely, patients may die as a result of a cardiac arrhythmia or heart muscle damage. An eye disorder, called ophthalmopathy, develops in about half of the patients and may be serious in about a third of these. Ophthalmopathy, which may lead to disfiguring swelling of the eyes, severe eye pain, double vision and, occasionally loss of vision and even blindness, can be diagnosed early by demonstrating serum antibodies against eye muscle proteins and, in the longer term, prevented using specific immunosuppressive drugs such as blocking mono clonal antibodies.

About 8% of apparently normal women develop post partum thyroiditis, a transient but serious inflammatory disorder of the thyroid, which occurs as the immune system, rebounds after the relative immunosuppression of pregnancy. Patients are usually hyperthyroid, then develop a prolonged period of hypothyroidism while the damaged thyroid cells recover. Sometimes they are hypothyroid at the onset. Post partum thyroiditis can often recur with subsequent pregnancies and become chronic, leading to Hashimoto's thyroiditis. Post partum thyroiditis, and thyroid antibodies without thyroid disease, may be triggers for depression in the post partum period.

Smaller proportions of adults develop another form of transient thyroiditis, called subacute thyroiditis, following throat or other infections. Again, patients typically are hyperthyroid at the onset then become hypothyroid and finally euthyroid (normal) when the damaged thyroid has recovered. Silent thyroiditis is similar but, as the name implies, occurs in the absence of symptoms. About 10% of patients taking the anti-arrhythmic drug amiodarone – which contains large amounts of iodine – become hyperthyroid and another 10% hypothyroid as a result of a toxic effect of the iodine on the gland. Amiodarone-induced hyperthyroidism can be very difficult to treat and

Continued Page 2

NEXT PUBLIC MEETINGS — **MELBOURNE November 2004** — **DETAILS Page 11**

Thyroid Disease *from Page 1*

may require emergency thyroidectomy to cure the thyroid inflammation and release of thyroid hormone.

Perhaps 5% of adult women have a single thyroid nodule, or adenoma, of which about 10% are malignant. While thyroid cancers are relatively uncommon and usually have a good prognosis, they occurs in the context of thyroid nodules or multi nodular goitre, which are very common, and diagnosis is often delayed for months or years. Fine needle aspiration biopsy of the thyroid is carried out to identify those thyroid nodules, which may be malignant. Overall, about 90% of thyroid surgeries are unnecessary and could have been avoided if a thyroid specialist performed FNA.

About 10% of older women, and a smaller proportion of younger ones, have a multi nodular goitre, which may reflect the emergence of mild iodine deficiency in Victoria and other parts of Australia. The significance of this form of goitre is that it may grow and cause obstructive symptoms including difficulty swallowing or breathing. More often it becomes hyperthyroid or "toxic", as part(s) of the gland becomes autonomous. Hyperthyroidism is a risk factor for osteoporosis and heart disease, especially in the elderly who may already have thin bones or heart problems.

The prevalences of Hashimoto's thyroiditis and multi nodular goitre appear to be increasing probably because of the increasing impact of daily hassles and more serious stress, and iodine deficiency. Although metabolic syndrome, or syndrome X, which affects about 25% of adults, is not recognized as an autoimmune disorder, there are important links with thyroid deficiency.

Current rate of thyroid testing in Australia

Examination of statistics regarding the numbers of thyroid function tests performed, published by the Australian Health Insurance Commission on their website, suggests that the rate of testing is higher for older women than for younger women, and higher for women than for men. However, if one compares the testing rates to the prevalence rates, one finds that the testing rates are disproportionately high for men and younger women, and the rates for older women are disproportionately low. This suggests that many of those at risk of developing thyroid conditions are not being tested for thyroid dysfunction. The diagnosis and treatment of hypothyroid patients needs to be optimised, taking into consideration the symptoms with which the patients present, as well as the full pathological thyroid function profile, including the testing for the relevant antithyroid antibodies. If all the risk factors are taken into account, society could gain by increased productivity from currently undiagnosed or under treated hypothyroid patients, as well as by saving health dollars currently being spent on unnecessary procedures and treatments. In order to do so, current diagnostic and treatment practices regarding the diagnosis and treatment of hypothyroidism need to change. And given that Australia's population is ageing and the prevalence of thyroid dysfunction is therefore set to rise within the community, this matter should be addressed with some urgency.

Links between thyroid and other autoimmunity

Autoimmunity of the endocrine glands is common and some patients have multiple disorders of the thyroid, adrenals, testis, ovaries, parathyroid glands, hypophysis and islet cells of the pancreas sometimes associated with immunodeficiency, infections and malignancies. Awareness of such combinations are important because unrecognised Addison's disease in a hyperthyroid patient can present at acute adrenal failure. Thyroid autoimmunity is linked to other autoimmune disorders and overlapping or mixed disorders, such as Graves' hyperthyroidism (GH) in a patient with underlying Hashimoto's thyroiditis ("Hashi toxicosis") and ocular myasthenia gravis and ophthalmopathy in the same patient, are sometimes seen. About 10% of patients with Type 1 diabetes have Graves' disease or Hashimoto's thyroiditis and 10% of patients with thyroid autoimmunity have associated disorders such as Addison's disease (deficiency of the adrenal gland), pernicious anemia, premature ovarian failure (manifest as early menopause), male infertility, myasthenia gravis, psoriasis, multiple sclerosis or multi system disorders such as rheumatoid arthritis, lupus, scleroderma and Sjögren's' disease. Other disorders of possible autoimmune etiology which are also increased in patients with thyroid autoimmunity include the inflammatory bowel disorders ulcerative colitis and Crohn's disease. The association of markers of autoimmunity such as premature greying of the hair, loss of hair (alopecia), which can be patchy, and vitiligo, are even more common, being found in about 15% of patiens with thyroid autoimmunity. These disease markers are also commonly found in other family members and the "genetic factor" appears to be a general loss of an immune tolerance to self-antigens.

Prof Jack Wall *of Melbourne University and Geelong Hospital is a specialist endocrinologist with a major interest in the thyroid. He was a co-founder and founding Medical Director of Thyroid Foundation of Canada.*❀

Thyroid Australia Ulysses Butterfly Pins

Show your support for Thyroid Australia by wearing a Ulysses butterfly pin.

Beautifully made in pewter and enamel by craftsmen in Ballarat.

Suitable for men and women.

Shown full size. Centre section is bright blue.

Cost: $7.00 (includes $2 postage and packaging).

Send us your name, address, and a cheque or money order for $7.00 (please, no cash or credit card payments) and we will get a pin out to you as soon as possible.

A butterfly pin will make it easier for members participating in the Members' Contact Lists to recognise each other when meeting up for a coffee …

Medications for hyperthyroidism

The most commonly used antithyroid drugs are propylthiouracil (PTU) and methimazole (Tapazole).* These drugs act to prevent the thyroid gland from manufacturing thyroid hormone, and thus the symptoms of hyperthyroidism will gradually subside.

You will gradually begin to feel better within two weeks, you will feel a difference by six weeks, and feel well in 10-14 weeks. You will probably take the medication for 6-12 months. Your doctor will check at six months, nine months and twelve months approximately, to see if the antithyroid drug is still needed. If your thyroid gland now functions normally, your family doctor will still check you periodically to be sure that your thyroid hormone level (T_4) remains within the normal range or just above (normal T4 range – 50-165 nmol/L).**

If taking antithyroid drugs, propylthiouracil or methimazole,* and you develop a rash, itching, hives, joint pains, a fever or sore throat, stop taking the drug and call your doctor immediately as you could be having an allergic reaction.

If you have any fever or infection while you are taking an antithyroid drug, your doctor will check your white blood cell count. If normal, treatment with antithyroid drugs can start again. If the white blood cell count is decreased, your doctor will use another type of treatment to control your hyperthyroidism – radioactive iodine (RAI) or surgery.

Radioactive iodine is used to control hyperthyroidism because it goes only into the thyroid gland and destroys thyroid tissue, leaving the body within a few days. Any remaining RAI decays into a non-radioactive state. Most patients need only one dose to control their hyperthyroidism: others may need additional doses.

Radioactive iodine is tasteless, and usually given in a glass of water. It is painless and no fasting is necessary – **do not be afraid of this excellent treatment.**

You should feel well within three to six months after radioactive iodine treatment. Once your thyroid level is normal, yearly blood tests should be done to watch for possible development of **hypothyroidism**. Most patients will become hypothyroid.

Hyperthyroid patients

- Should avoid cough/cold medicines with decongestants as they can cause restlessness and extra stimulation of the heart.
- Should avoid stimulants such as coffee, alcohol, tobacco or chocolate while in a very hyperthyroid state.
- Should avoid excess iodine found in kelp (dulse) and some asthma medications, vitamins, cough medicines, suntan lotions, salt substitutes. **Please read the labels.**
- The preferred antithyroid drug during pregnancy, in doses lower than with non pregnant women, is propylthiouracil (PTU) and it can be used when breast feeding, as only negligible amounts actually get into the milk.
- You cannot donate blood if you are taking antithyroid medication.
- If you forget a dose of antithyroid drug or other medications contact your doctor for guidance as to the best way to resume medication.

Haloperidol (Haldol)

Hyperthyroid patients taking haloperidol may develop rigidity and the inability to walk.

** In Australia carbimazole (Neo-Mercazole) is used instead of methimazole (Tapazole).*

*** The normal range for T_4 differs from laboratory to laboratory, and the range mentioned here is unlike those found in Australia. Check with your doctor to find out what the normal ranges for your test results are. - Thyroid Australia.*

Fact sheet 001, Thyroid Foundation of Canada

Originally published in *thyrobulletin*, Volume 24, Number 2 Summer 2003

Reproduced with permission ❀

Thyrogen® Approved

We reported the availability of Thyrogen in *Thyroid Flyer* Volume 2 Number 2 of April 2001 and its use during follow up screening for residual or recurrent thyroid cancer. We can now report its inclusion on the Medicare Benefits Schedule from 1 May 2004.

The usual approach to preparing thyroid cancer patients for a whole body radioiodine scan or thyroglobulin assay is to stop their thyroxine replacement therapy for a number of weeks prior to the scan. This causes the patient to become significantly hypothyroid with a markedly elevated serum Thyroid Stimulating Hormone (TSH) level. The elevated serum TSH is the purpose of the approach because it stimulates any thyroid cells to produce thyroglobulin and take up the radioiodine.

Unfortunately the induced hypothyroid state can have adverse consequences for some patients including severe psychiatric disturbances. Thyrogen is designed to alleviate these problems.

Thyrogen is a synthetic TSH manufactured by Genzyme Corporation. It has been approved for use with patients undergoing follow up investigations for thyroid cancer for whom the standard approach of withdrawing thyroxine therapy is not recommended.

Unfortunately, not everybody will qualify for the drug. It will only be made available to privately treated patients who:

- Have had a total thyroidectomy and at least one ablative dose of radioiodine, but are still considered at risk of recurrence;
- Are receiving thyroxine replacement therapy;
- Have had at least one previous whole body scan or thyroglobulin assay following thyroxine withdrawal which was clear; and
- Withdrawal of thyroxine resulted in severe psychiatric disturbances; or
- Withdrawal is contraindicated because the patient has:
  - Unstable coronary artery disease; or
  - Hypopituitarism; or
  - A high risk of relapse or exacerbation of a previous serious psychiatric illness.

There will be some out of pocket expenses. This could vary from doctor to doctor but generally will be no less than $60.00 including a consultation fee.

Please talk to your doctor to see whether Thyrogen is appropriate for your circumstances. You can also contact Genzyme or visit their web site at www.genzyme.com.au ❀

Adverse Drug Reactions

Adverse Drug Reactions: Who Keeps Track?

Australia has a comprehensive system for regulating and monitoring medicines to ensure their safety. One component of the system is a process for collating and analysing information about adverse reactions to medicines.

Adverse reactions

All medicines can have undesirable and unintended effects. These effects are known as side effects or adverse reactions. Most adverse reactions to 'old' medicines are well known because the medicines have been used for many years. However, our knowledge about adverse reactions to 'new' medicines is often incomplete.

In Australia, all prescription medicines must undergo a comprehensive evaluation of their safety and effectiveness before being marketed. The more common adverse reactions are usually detected during the clinical trials that form part of the evaluation process. However, uncommon reactions may not show up during clinical trials, because the trials are not usually large enough or long enough for every reaction to appear. In addition, clinical trials may not involve people who are taking medicines for other conditions, so some interactions may not show up during trials.

The main reason for reporting adverse reactions is to increase the safety of medicines by increasing the body of knowledge about them.

Adverse reactions can have marked effects on people's health. Therefore, it is important that we have a system for collating and disseminating information about adverse reactions that appear when a medicine is in general use. In Australia, the responsibility for this task lies with a committee of medical experts known as ADRAC (Australian Adverse Drug Reactions Advisory Committee).

Reporting process

The reporting process usually starts with the GP, pharmacist or hospital managing the consumer thought to have experienced an adverse reaction. If they feel that the suspected reaction warrants reporting, they submit the details of the medicine and the reaction to ADRAC. About 10,000 suspected reactions are reported each year. Two-thirds of the reports come from GPs and hospitals.

Every suspected adverse reaction report is reviewed by professional staff, who enter the details into the national database of adverse reactions. The database, which dates from 1972, contains the details of over 182,000 reports. The details are then analysed to see if the report may contain a medicine-related safety issue. If an issue is identified, the record is comprehensively analysed to determine if the reported reaction is a real adverse reaction or not. ADRAC meets eight times a year to discuss the reports received.

What happens to a report after the review process is complete depends on its importance and its safety implications. If the reaction is well known and not serious, nothing further may be done. If the report raises further questions or possible concerns, more information may be sought, or ADRAC may decide to wait and see if other similar reports are submitted.

If the adverse reaction is new and significant, steps may be taken to amend the official information about the medicine (known as the Product Information), change the medicine's labelling, or inform doctors, pharmacists and consumers about the reaction and its implications. In the case of more serious reactions, restrictions may be imposed on the availability and use of the medicine. In some cases, it may even be taken off the Australian market. Fortunately, this needs to happen only rarely.

Priority areas

The main reason for collecting and analysing reports of adverse drug reactions is to improve the safety of medicines by increasing the body of knowledge about adverse reactions and identifying potentially dangerous situations. Therefore, most of ADRAC's efforts are directed towards reports likely to achieve those goals, rather than trying to document thoroughly every adverse reaction experienced.

Reports of reactions to medicines, serious reactions and interactions between medicines are strongly encouraged. Every issue of ADRAC's regular bulletin includes the 'Drugs of Current Interest', which is a list of medicines of particular interest to ADRAC. Doctors and pharmacists are asked to report all suspected adverse reactions to medicines on the list. The information gathered about reactions and interactions strengthens and augments the body of knowledge about medicines.

Reporting your reactions

You can contribute to the process of adding to the body of knowledge about medicines by telling your doctor about any adverse reactions you think you may have experienced. The information may help your doctor better understand you and your situation, give them a better understanding of the medicine and its effects, and give them the opportunity to report the reaction to ADRAC.

Reporting an adverse reaction also gives you and your doctor the opportunity to discuss the reaction and its implications. This may enable your doctor to alleviate the problem by changing the medicine, modifying the dose, or suggesting another solution. It may also give your doctor greater insight into your health problem, which may enable them to modify and improve your management.

An example of the system in action: Celebrex

Celecoxib (Celebrex) became available for the treatment of arthritis in Australia in October 1999. It was put on the ADRAC 'Drugs of Current Interest' list for two years. Health professionals responded by submitting nearly 3,000 suspected adverse reaction reports in that time. The reports enabled ADRAC to develop a comprehensive adverse reactions profile for the medicine. The resulting profile confirmed ADRAC's initial impression that the adverse reactions of celecoxib were similar to those of other anti-inflammatory arthritis medicines,* except that serious gastro-intestinal effects** were less common. ADRAC kept health professionals informed of this knowledge through a series of ar-

ticles in its bulletin and the *Medical Journal of Australia*.

Recently, ADRAC changed its advise about celecoxib. In the August 2003 issue of its bulletin, it discussed the several hundred reports it had received of gastro-intestinal ulcers and bleeding during celecoxib treatment. Based on these reports and the clinical trial results, it concluded by saying that celecoxib should be used with the same caution as other anti-inflammatory arthritis medicines.

This example shows how Australia's system for reporting and analysing suspected adverse reactions to medicines can strengthen and change the body of knowledge about a medicine. Some clinical trials of celecoxib indicated that it had fewer serious gastro-intestinal effects than other anti-inflammatory arthritis medicines. The first two years of reporting appeared to confirm that picture. It was not until the medicine had been used by many thousands of consumers for long periods that a better understanding of the serious gastro-intestinal effects of the medicine emerged. As a result, the hope that celecoxib would be much less likely to cause gastro-intestinal ulcers and bleeding than other anti-inflammatory arthritis medicines seems not have been fulfilled.

* The other anti-inflammatory arthritis medicines include naproxen (Anaprox, Inza, Naprosyn, Naprosyn SR, Naprogesic, Proxen SR) and diclofenac (Diclohexal, Voltaren, Voltaren Rapid).
** Serious gastro-intestinal effects include stomach and duodenal ulcers, and stomach and duodenal bleeding.

Originally published in *MedicinesTalk: Information for Consumers and Consumer Organisations*, No. 7, August 2003. by the Consumer Sub-Committee (CSC) of the Pharmaceutical Health And Rational Use of Medicines Committee (PHARM), funded by the Commonwealth Department of Health and Ageing.

❀

Common thyroid cancer gene mutation found

Researchers at the Johns Hopkins Kimmel Cancer Center have found that a single genetic mistake causes about two-thirds of papillary thyroid cancers. Their research, published in the April 16, 2003, issue of the *Journal of the National Cancer Institute*, may lead to new therapies that could counteract the mistake.

Hopkins researchers found a mutation of the BRAF (pronounced b-raf) gene in 68 percent (24 to 35 samples) of papillary thyroid cancers. These tumors account for about 75 percent of all thyroid cancer and occur mostly in women. "Until now, there have been no other major genetic events identified for common thyroid cancers," says David Sidransky, M.D., professor of otolaryngology and oncology at Johns Hopkins. "Our goal is to find better diagnostics and drug therapies designed to target the effects of this mutation."

The mistake involves a subtle change in the chemical bases (adenine, thymine, cytosine, and guanine) that make up DNA. The order in which these bases – or nucleotides – occur determines the information genes communicate to cells much like specific letters of the alphabet combine to form words and sentences. In the case of BRAF, the nucleotides are altered, and T (thymine) is switched to an A (adenine). The researchers found that this single coding error among more than 2000 nucleotides in the gene causes it to be stuck in the "on" position making thyroid cells continuously grow and divide, ultimately into cancer.

"Though most thyroid cancers can be cured by surgery and radioactive iodine treatments, it remains difficult to distinguish benign thyroid disease from cancer," says Sidransky. "Improvements in diagnostic tests and treatments using what we know about the BRAF mutation could speed up diagnosis and help patients survive advanced disease." Clinical trials for patients with papillary thyroid cancer who have not responded to surgery and radioactive iodine therapy are being planned.

Hopkins researchers also screened for the BRAF mutation in other cancers and thyroid tumors. They found a small percentage in lung and head and neck cancers. Six out of nine (66 percent) thyroid cancer cell lines tested positive for the BRAF mutation. No mutations were found in biopsies from 20 benign thyroid conditions and other types of thyroid cancers such as follicular, medullary and Hurthle cell. A research team at the Wellcome Trust Sanger Institute recently found the same mutation in the BRAF gene in approximately 80 percent of melanomas and some colon cancers.

Thyroid cancer affects 22,000 Americans each year and makes up about half of all head and neck cancers. The thyroid gland essentially impacts all cells of the body by regulating metabolism, chemical balance, and hormone production.

This research was partially funded by the National Cancer Institute. Participants of this research include Yoram Cohen, Mingzhau Xing, Elizabeth Mambo, Zhongmin Guo, Guogun Wu, Barry Trink and Paul Ladenson from Johns Hopkins; and Uziel Beller from the University of the Negev, Jerusalem, Israel.

Related web sites: Johns Hopkins Thyroid Tumor Center at www.thyroid-cancer.net and Johns Hopkins Kimmel Cancer Center at www.hopkinskimmelcancercenter.org/index.cfm

Reprinted with kind permission by The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, Maryland, USA.

Originally published in *thyrobulletin*, Volume 24, Number 2 Summer 2003

Reproduced with permission.

❀

Over To You

We publish letters and thyroid stories from our members. So if you would like to write to us or send us the story of how, when, where and why your thyroid condition was diagnosed, and how the condition and treatment has affected you, please do so. If you are able to include any lab test results (such as TSH, T4 and T3) at the time of diagnosis and during your treatment, all the better. The stories will be published anonymously unless you ask to be named.

The views expressed in this section are not necessarily those of Thyroid Australia. Check all treatment options with your doctor.

Multi Nodular Goitre

Thank you for your letters and articles regarding thyroid conditions. Your support is very much appreciated and the information proved to be invaluable to me during my thyroid dilemma. I also wish to convey my sincere thanks to Thyroid Australia telephone support volunteers who helped me cope with this very difficult time in my life.

Also, I was fascinated with the articles and information in *Thyroid Flyer*. Congrats to everyone involved on the high standard of this excellent newsletter.

Of particular interest to me was "Thyroid Disease in Late Life" [*Thyroid Flyer* Volume 4 No 3 August 2003]. I believe my poor mother suffered dreadfully from lack of proper after care following a thyroidectomy and treatment with radioiodine some years ago. There's no doubt she was hypothyroid. She died last year from heart failure.

Needless to say I went into panic mode when my consulting surgeon said I needed a total thyroidectomy and would be on thyroxine medication for the rest of my life! The surgeon was also careful to advise that there were several risks involved with this delicate and challenging surgery and that they would do their best, but couldn't guarantee anything. What I thought was a simple operation turned into three and a half hours of major surgery with possible risks to the parathyroids, blood vessels and the laryngeal nerve. And as my T_4 levels had elevated, there could be also the risk of thyroid storm. My GP then prescribed carbimazole. I guess this demonstrates how fickle thyroid disease can be.

Anyway, after much discussion with hospital doctors, I underwent radioiodine therapy for my large multinodular goitre last week. I've also had radioactive iodine uptake, thyroid scan and FNA. Will see my endocrinologist next month with a TSH test to be taken three days earlier. Here's hoping.

I'm delighted to now be an official member of Thyroid Australia. Thanks once again for your support and I will look forward to hearing from you again.

The author of the letter above asked us to publish the following notes as well. She compiled them in consultation with her hospital doctors, surgeons, radiologists, as well as basing them on her own personal experience:

Notes on thyroid surgery

Thyroid storm is a serious condition that can occur when too much thyroid hormone enters the blood stream during surgery. Thyroid storm causes a rapid heart rate (palpitations), raised temperature and shaking or tremor and the patient will feel unwell following surgery. Therefore, it's important that an overactive thyroid be carefully monitored before undergoing surgery. Fortunately, thyroid storm can be treated with medication.

The laryngeal nerves control the vocal chords or voice box. Damage can result in hoarseness or a croaky voice.

The four parathyroids are small endocrine glands located close to the thyroid. They produce parathyroid hormone (PTH), which regulates the level of calcium, essential for life, in the blood.

Many years ago, when thyroidectomy operations were first being performed, the parathyroid glands were often damaged or removed accidentally with disastrous consequences.

There is more chance of risks during thyroid surgery when the goitre is very large or if cancer is present.

On a positive note, modern surgery is considered to be fairly safe and recovery from a thyroidectomy is usually very good. Nevertheless, there are still certain risks involved and the decision to have surgery should never be entered into lightly.

15 August 2003

❀

Next issue of the *Thyroid Flyer*

The next issue of the *Thyroid Flyer* will be published in July 2004. Articles or letters for publication should be sent to The Editor by 15 May 2004.

Thyroid Flyer by email

We would like to remind our readers that the *Thyroid Flyer* is also available in full colour as a PDF [portable document format] file as an e-mail attachment. Please let us know if you would prefer to receive the newsletter in this format instead of having it mailed out to you, or if you would prefer to receive it in this format as well as having it mailed to you.

Hypothyroid Tips

By **Alun Stevens MSc FIAA**

We have worked over the last few years on developing a broad base of Australian focused information on the various thyroid conditions. A number of readers have suggested that we should go back to the basics and restate some of the simple things. Here they are:

- The standard treatment for hypothyroidism is thyroid hormone replacement therapy with thyroxine (T_4).
- Reaching a stable dose will take time. Most people will take 6 to 12 months. Some can take even longer.
- Thyroid hormone levels adjust slowly. It is therefore necessary to hold a specific dose for some weeks to allow the body to adjust and reach stability. This period is generally 4 to 6 weeks.
- Adjusting the dose more frequently than this and having frequent thyroid function tests does not speed the process of reaching a stable dose. It makes the process more difficult to manage and it will generally take longer.
- It is usual to start on a low dose – generally 50 mcg. Hold this dose for 4 to 6 weeks.
- Have a Thyroid Function Test at the end of the period and assess progress.
- In consultation with your doctor, adjust the dose as indicated by the blood tests. Hold this dose for 4 to 6 weeks and then repeat the process.
- Once you have reached your stable position, have a blood test each time you renew your prescription and at least once every 12 months. Also have a blood test if you notice the re-emergence of hypothyroid symptoms or if you notice the emergence of hyperthyroid symptoms. These may be indicating that it is time to adjust your dose again.
- Women who become pregnant, take the contraceptive pill or who start Hormone Replacement Therapy for menopause will probably need to increase their thyroxine dose. They should confirm their situation with a Thyroid Function Test.
- A small number of people are sensitive to the initial thyroxine dose and to changes in the dose. They tend to experience some or all of the hyperthyroid symptoms even at small doses of thyroxine. The standard approach for these people is to slow the process down. Take smaller dose steps and take longer to move to the higher doses. If you are one of the people who have this experience, please discuss your situation with your doctor.
- Australia has a poor selection of available thyroxine doses. The two brands, Oroxine and Eutroxsig, are only available in 50 mcg, 100 mcg and 200 mcg doses. This makes it difficult for people needing intermediate doses. The only solutions are:
  - Cut the tablets. Get a good quality pill cutter from a pharmacy. The result is worth the expense. Don't use a knife.
  - Take alternate doses. Because thyroid hormone levels change slowly in the blood, it is possible to average your dose out over a number of days. For instance, taking 150 mcg on three days of a week and 200 mcg on the other four days averages out to 179 mcg per day.
- Small dose adjustments can make a big difference to symptoms especially when you are near to your stable dose. Speak to your doctor. Hold your new dose for 4 to 6 weeks and confirm your thyroid hormone status with a Thyroid Function Test at the end of the period.
- Oroxine and Eutroxsig are both made by Sigma Pharmaceuticals. The tablets in the Eutroxsig labeled bottles also have Oroxine stamped into them so it looks as though they are the same product, just with different labels on the bottles. Eutroxsig is cheaper.
- If you have any questions about the medications, their side effects or their interactions with other medications, please contact Sigma. We can supply copies of the Oroxine Customer Medicine Information sheet if you write to us and include a stamped addressed envelope.
- Take your thyroxine first thing in the morning with a little water. Do not eat for 30 minutes and do not take any other medications – prescription, over the counter or complementary – for 4 hours. This ensures that your body has the same experience each day and that nothing you eat or take interferes with the absorption of the thyroxine.
- Some critical medications like some heart medications and some osteoporosis medications have to be taken first thing in the morning on an empty stomach. These are more important than the thyroxine so take them as prescribed and take the thyroxine at some other time. Talk to your doctor about your medications.
- Iron and calcium supplements and soy products interfere with the absorption of thyroxine and should be taken at another time.
- On the days that you have a thyroid function test, do not take your thyroxine until after the blood sample is drawn. This will prevent a false elevation in your Free T_4 reading.
- When you have a Thyroid Function Test, have tests for Thyroid Stimulating Hormone (TSH) Free T_4 (FT4) and Free T_3 (FT3). Have the three tests listed individually on the pathology order form. If they aren't, some laboratories may not carry out all the tests.
- If one of the tests is not carried out, tell the pathology laboratory as soon as possible. They keep the blood sample for about a week and can carry out the missed test on that sample provided you tell them soon enough.
- Ensure that your status as a hypothyroid patient taking thyroxine is also marked onto the pathology order form. This information makes it much easier for the pathologist to interpret and comment on the results.
- When you have the blood sample drawn, make a note of your weight, your thyroxine dose and how you are feeling. Specifically make a note of any of the major hypothyroid and hyperthyroid symptoms you might be experiencing as these could be indicators of under or over dosing.
- Get a copy of the test results from your doctor. Write the information you recorded onto the copy of the results. Over time you will accumulate a solid set of information that shows how you feel at various thyroid hormone levels. This is particularly helpful when discussing doses and dose adjustments with your doctor.
- You can write to us (with a stamped addressed envelope) for a simple form on which this information can be recorded. Or you can download the form from the Downloads page on our web site.

Alun Stevens *is Vice President of Thyroid Australia.* ❀

Scientific Review

By **Alun Stevens MSc FIAA**

The left thyroid node is missing when the thyroid does not form properly

Improper formation of the thyroid gland (agenesis) is a rare anomaly. Two studies have investigated the condition as part of large studies that used ultrasound to study people suspected of having a thyroid problem. The first study investigated 71,500 adults. It found 16 people (0.02%) who had one lobe of their thyroid missing. In 15 people, it was the left lobe that was missing and in the other one it was the right lobe.

The second study investigated 24,032 children in Sicily as part of a study into iodine nutrition. It found 12 children (0.05%) with a malformed thyroid gland. 11 lacked a left lobe and 1 had a very small left lobe.

There is no obvious reason for the problem being manifested primarily on the left side. The body is not symmetrical and there are a number of processes that favour one side over the other in the development of the foetus. Nonetheless, this is an interesting little addendum to the body of knowledge on matters thyroid.

Mikosch P and others, "Thyroid hemiagenesis in an endemic goitre areas diagnosed by ultrasonography: report of sixteen patients", *Thyroid* 1999;**9**:1075-84.

Maiorana R and others, "Thyroid hemiagenesis: prevalence in normal children and effect on thyroid function", *Journal of Clinical Endocrinology and Metabolism* 2003; **88**;1534-6

Soy formula complicates management of congenital hypothyroidism

Maintaining optimal thyroid hormone levels during infancy is critical for normal brain development and growth. It is also known that soy products can interfere with thyroid hormone levels. This study is therefore interesting in studying the impact of the increasingly popular soy infant formulas on thyroid hormone management in children with congenital hypothyroidism.

The authors considered a number of thyroid related parameters in 70 children with congenital hypothyroidism using non-soy formulas and 8 equivalent children using soy formulas. They found that the soy group took longer to reach a stabilised TSH level (150 days versus 40 days). The group also had higher TSH readings at commencement of the study and a higher percentage with increased TSH at 4 months and throughout the year long study.

The authors conclude that the infants using soy formula had prolonged increase in TSH and that children using these formulas require close monitoring of their Free T4 and TSH levels and may need higher doses of thyroxine.

Conrad and others, "Soy formula complicates management of congenital hypothyroidism", *Archives of Disease in Childhood* 2004; **89**:37-40.

New European protocol for low risk thyroid cancers

A European consensus group has published a new protocol for monitoring patients with well differentiated thyroid cancer. This protocol is based on 6 month and 12 month evaluations designed to discover persistent or recurrent disease. They state, "In patients with an undetectable TSH stimulated thyroglobulin concentration and normal findings on neck ultrasound at the 6 and 12 month follow-up, the risk of subsequent recurrence is less than 0.5%. These patients can be reassured and the dose of thyroxine can be safely decreased." Where TSH stimulated thyroglobulin levels are detectable, but below the laboratory threshold, the test should be repeated annually. If the level remains stable or increases, then further ablative treatment is probably needed.

Earlier protocols were based on patients who were generally at higher risk. The focus now is on specifically identifying those who require more intensive monitoring because of, for example, distant metastases, extensive neck disease, poorly differentiated tumours or incomplete surgical excision, rather than over-investigating large numbers of patients with a low risk.

Schlumberger and others, "Follow-up of low-risk patients with differentiated thyroid carcinoma: a European perspective", *European Journal of Endocrinology*; **150**:105-122.

No difference in outcomes between T_4 only and T_3/T_4 combination therapy

The benefits of using a combination of T_3 and T_4 therapy over T_4 alone continue to be debated. The Lithuanian study by Bunevicius and others reported in the *New England Journal of Medicine* in 1999 indicated that there were benefits from the combined therapy. Unfortunately there were some problems with the statistical reliability and experimental design of the study so the results were tantalising, but open to question. The Australian study published last year just as *Thyroid Flyer* was going to press, is therefore very interesting.

The researchers sought to overcome a number of the criticism of the earlier study. They conducted a double-blind, randomised trial comparing the effect of T_4 alone and T_3/T_4 on symptoms of hypothyroidism, quality of life, cognitive function and subjective satisfaction with T_4 therapy. There were 110 participants of whom 101 finished the study.

The study used a double blind crossover methodology. All subjects reduced their normal thyroxine dose by 50 mcg and replaced it with the study medication. For half the subjects, this was 50 mcg of thyroxine (effectively leaving them on an unchanged thyroxine dose). For the other half, the study medication was 10 mcg of T_3. They stayed with this dose regime for 10 weeks, they then had a 'wash out' period of 4 weeks when they resumed their normal thyroxine dose and then proceeded with another 10 weeks during which those who had had thyroxine as the study medication now had T_3 and vice versa.

At the beginning of the study and at the end of each treatment period, the subjects had blood tests to check their thyroid hormone levels as well as a number of other markers of thyroid hormone action. They also answered questionnaires that measured quality of life as well as measures of physical well being and psychological well being. Cognitive function was assessed by a clinical psychologist using standard tests. And the subjects rated themselves as being Very Satisfied, Satisfied, Dissatisfied or Very Dissatisfied with their thyroid treatment.

Continued Page 10

Important Information for Thyroid Patients

Since thyroid hormones affect every cell in your body, an overactive or underactive thyroid can produce a wide variety of symptoms.

Your thyroid gland is located in the front of your neck below your Adam's apple. It plays an important role in regulating your body's metabolism.

HYPOTHYROIDISM (underactive thyroid)

Hypothyroidism may occur at any age but is especially common in older individuals. It affects 17% of women and 9% of men by age 60.

Do you have Hypothyroidism?

Check out these Possible Signs and Symptoms:

Skin, Hair, Nails: Is your skin: cold, thick, dry with little or no sweating, waxy, flaky, itchy, pale ivory or jaundiced? Do you bruise easily, do wounds heal slowly, are you always feeling cold?

Is your body temperature below normal? Have you noticed puffiness of hands and face - especially of the eyelids and under the eyes ?

Do you get "Pins and Needles"? Do you have Carpal Tunnel Syndrome? Have you noticed hair loss of scalp, groin, outer half of eyebrows? - are you constantly cleaning out the sink and tub drains after each shampoo? Is your scalp dry? Does your hair feel like straw? Is it starting to "frizzle"?

Are your nails brittle and thick and always breaking, splitting, layering?

Digestive system: Are you always constipated? Have you gained weight and feel "bloated"? Is your cholesterol high?

Reproductive system: Do you have heavy menstruation (clotting is common), a tendency for low birth weight babies and early delivery? Did you miscarry your last pregnancy? Have you recently given birth? Post Partum Thyroiditis occurs in approx 8% of women after delivery and involves a hypothyroid stage 12-14 weeks after delivery.

Cardiac System: Is your pulse slower than normal? Do you experience skipped beats followed by a "boom", chest pain, shortness of breath? Are you sleeping excessively yet still feel totally "drained and lifeless"? Do you "sigh" a lot? Is everything an extreme effort? Have you lost your "get up and go?". Do your family and co-workers (if you're still able to work) think of you as lazy? Do you feel "100 years old" ? Do you take iron medication for chronic anemia?

Has your blood pressure changed - gone either up or down?

The Mind and Emotions: Does your mind feel "foggy?" Does your mental process seem slower than usual making thinking and decision making more difficult? Is your memory poor? Do you feel depressed, sad, and cry easily for no reason? Do you see "something" in your peripheral vision when nothing is there?

Musculator System: Is it hard to keep your arms up when curling your hair? Do you get muscle cramps, lose your balance and have a sluggish tendon reflex?

Eye, Ear, Nose and Throat: Although Thyroid Eye Disease is more commonly associated with Graves' Disease (Hyperthyroidism), it can also be associated with Hypothyroidism.

Do you find you have to listen harder to hear conversations and need the radio etc. turned up? Does your voice seem deeper and hoarse? Is your speech slurred at times? Do you notice swelling at the front of your neck and feel pressure on your throat which is making swallowing more difficult ?

Do you suffer from frequent chest colds and other infections?

Have you been treated for hyperthyroidism? (Hypothyroidism often develops after treatment). Do you have a family history of thyroid disease and/or diabetes?

A TSH test is the most important test for detecting primary hypothyroidism.

Note: If you have had X-ray therapy as a child for enlarged adenoids or tonsils, enlargements of the thymus gland as a newborn, birthmarks, whooping cough, acne, or ringworm of the scalp, your physician should palpate your neck carefully to check for thyroid nodules as in almost every instance the thyroid function test will be normal, even in patients who have a proven carcinoma. The T4 (a thyroid hormone) and TSH (thyroid stimulating hormone) value can be misleading in this case, as they reflect the state of the total thyroid function, rather than the presence or significance of a thyroid nodule.

HYPERTHYROIDISM (overactive thyroid)

Hyperthyroidism is most common between the ages of 20-40 but may occur at any age.

Could you be hyperthyroid?

Check out these possible signs and symptoms:

Skin, Hair, Nails: Do you always feel hot and can't stand the heat? Is your skin warm and velvety to touch? Is your face flushed ? Do you have increased sweating and frequent hives/itching? Have you noticed increased pigmentation of palms/soles? Do you have orange skin like lumps on the skin of the shins? Is your hair very soft, hard to curl and diffusely thinning? Are your nails soft, grow quickly and "lift" allowing dirt to get trapped underneath which is hard to get out? Have you noticed your fingers taking on the shape of a "club"? - fingertips widen at sides of nail (rare).

Digestive System: Are you "shovelling food" into your system because of an excessive appetite but losing weight? Do you have frequent bowel movements/diarrhea?

Reproductive System: Is your period now scant or stopped altogether? Have you been told you are experiencing early menopause? Are you having difficulty to conceive? Decreased sex drive due to total exhaustion of constantly being "driven" is common. Have you recently given birth? Post partum thyroiditis involves a hyperthyroid stage 6-12 weeks after delivery followed by a hypothyroid stage 12-14 weeks post partum.

Cardiac System: Is your pulse faster than normal with times when it goes so fast (tachycardia) you become very

Continued Page 10

Important Information for Thyroid Patients *from Page 9*

weak? Are you short of breath? Do you have swelling of your ankles? Do you get chest pain and palpitations but a cardiac checkup reveals "nothing wrong?" When your doctor checks your blood pressure is your systolic blood pressure reading (top number) elevated with diastolic reading (bottom number) normal? This is known as wide pulse pressure.

The Mind and Emotions: Do you feel as if you're in "overdrive and "out of control"? Are you restless, nervous, impatient, irritable, unable to stop cleaning house etc.? Do you feel "ready to explode", have mood swings, panic attacks, headaches, difficulty sleeping you're so wound up?

Muscular System: Do you find yourself pulling on the banister with your arms to help you climb stairs due to weak thigh muscles? Have you noticed a fine tremor (you can check this by placing a sheet of paper on the back of your hand) or obvious shakiness of your hands? Is your knee jerk response exaggerated ? Are your ankles swollen?

Eye, Ear, Nose and Throat: Do you "stare" a lot without blinking? Have you noticed changes in your eyes such as eye lid elevation, a feeling of "sand in eyes", pain, watering, redness, possible protrusion. If you have thyroid eye disease symptoms, you should be seen by a specialist. Do not hesitate to ask for a second opinion on treatment options.

According to **Dr. Robert Volpe, FRCP, FACP, Toronto, Canada,** "the general view is that if patients do have eye signs to begin with and yet radioactive iodine is the treatment of choice, then Prednisone given concurrently with the radioactive iodine and for 6-8 weeks tends to prevent the aggravation of the eye signs. There is some suggested evidence that patients should not be allowed to become hypothyroid after treatment and possibly thyroxine should be given after the radioactive iodine so as to prevent hypothyroidism. However this is somewhat controversial, and most endocrinologists would wait until the TSH begins to rise before prescribing thyroxine."

Are you very sensitive to noise now ? Have you noticed a lump or swelling on the front of your neck?

Do you have a family history of thyroid disease and/or diabetes?

Please note the above symptoms are extensive in order to present the "whole picture". You probably won't have all of these symptoms. Seniors usually present atypically so TSH testing is very important. Early diagnosis with a simple TSH blood test followed by correct treatment will prevent serious complications.

It is extremely important for you to tell your doctor all of your symptoms - simply "highlight" or circle them above and take this article with you. Also write down any questions you may have and give a copy to your doctor.

We urge all doctors to take time to **listen** to your patients ... don't "isolate" symptoms but look at the whole spectrum. If a patient tells you s/he feels as if s/he's falling apart and "nothing seems to be working properly", chances are s/he's right!

www.thyroid-fed.org/intro/patients.html

 ❀

Scientific Review *from Page 8*

55% of the subjects were Dissatisfied at the beginning. Their average thyroid hormone levels were no different from the Satisfied group. The Dissatisfied group were younger, a greater percentage of them had a history of depression and they had worse scores on quality of life.

The comparison of the results at the end of each treatment period are very interesting. The average scores across all subjects show no significant differences between the two treatments. Quality of life scores were statistically equivalent. Cognitive function scores were also statistically equivalent. And the satisfaction ratings were equivalent. 46% preferred T_4 alone, 36% preferred T_3/T_4 combination and 18% had no preference. This is no different from what would expected by chance alone.

There was a significant difference though in the thyroid hormone levels. Free T_4 was lower for those taking the combination and their TSH was higher. Free T_3 was the same. The fall in Free T_4 was expected, but the rise in TSH was not and suggested subtle underdosing with the combination therapy. This could have reduced the quality of life and cognitive function scores for the combination therapy and cast some doubt on the results. To clarify this position, the researchers then analysed the sub group whose TSH had not risen significantly between the two therapies. This sub group also showed no differences in test outcomes between the two therapies – suggesting that the TSH rise was not an issue.

The conclusion from the study is clearly that combination therapy as administered in the study is no better than T_4 alone in restoring quality of life and cognitive functions. The authors admit to a deficiency in their experimental design in that a fixed quantity of T_3 was used in substitution of T_4 and that it was administered in a single dose rather than in divided doses or with a slow release mechanism. The sub group approach for assessing the effect of the increase in TSH is also open to criticism. The sub group comprised only 40% of the sample and still included subjects with quite large increases in TSH. The question of how the other 60% of the subjects would have reacted with a smaller TSH change is not able to be answered. Possible subtle under replacement could still have played a role in shaping the overall results.

All the questions regarding T_3/T_4 combination therapy have not been answered by this study. There is clearly need for more research on this issue, but it is fair to say that this study does show that there are limits to the efficacy of combination therapy as a general treatment protocol for most hypothyroid patients.

Bunevicius R and others, "Effects of thyroxine as compared with thyroxine plus triiodothyronine in patients with hypothyroidism", *New England Journal of Medicine*; 340: 424-429

John P Walsh and others, "Combined thyroxine/liothyronine treatment does not improve well-being, quality of life or cognitive function compared to thyroxine alone: a randomised controlled trial in patients with primary hypothyroidism", *Journal of Clinical Endocrinology & Metabolism*; **88**(10); 4543-4550. ❀

Editorial *from Page 1*

puter? If you do, please call us. We can pay modest amounts for the items or you might prefer to make a tax deductible donation.

On 29 November, we held our Annual General Meeting at the Royal Women's Hospital in Melbourne. The directors who retired at the AGM were all re-elected. The meeting also agreed to amend the constitution to better support two year terms for directors. Alun Stevens then presented his workshop on Thyroid Conditions. The day was attended by over forty people who found this is a most informative talk and was of great help to many in understanding the various thyroid conditions. This day was also our AGM and our committee was re-elected.

On February 21st at the Royal Women's Hospital, we enjoyed a most informative talk by Dr. Mary-Anne Papalia from the Jean Hailes Foundation. The talk was on "Obesity, Insulin Resistance and Hypothyroidism – Is there a link?" This was a most successful day and a wonderful talk. The topic is most important to people with hypothyroidism as weight gain can lead to Insulin Resistance, which is the precursor to Type 2 Diabetes. We will publish an article on this topic in our next Flyer. The day was most successful financially as well, which will assist with our office move, particularly with the acquisition of computer equipment.

The demands on the board of setting up the news office, moving in and recruiting and training volunteers is such that we have had to make a few changes to our normal schedule of activities. We will only be publishing three newsletters this year. This one, one in July and one at the end of November. We will go back to four newsletters next year.

We have also decided not to hold any public meetings this year except for our annual seminar. This will be in November this year instead of August as in the past. We are planning to make it a major event including catering, conference papers and interesting displays. We have started work assembling a panel of quality speakers. The agenda is not finalised, but it is likely to include

- How the thyroid works and what goes wrong with it.
- Clinical management of thyroid disease.
- Metabolic syndrome, obesity and hypothyroidism.

This edition of *Thyroid Flyer* brings together a range of topics that cover the spectrum of thyroid issues. Following reader requests, we have also included some information covering the basic issues facing members. I hope that you find it interesting.

Good Health to you all,

Gail Pascoe M. Mgt. ❀

Please copy or detach and mail to the address below.

Request for Membership Application Form and Information

Date: .....

I am interested in learning more about my thyroid condition and about Thyroid Australia.

I have been diagnosed with the following thyroid condition (please specify): .....

Please send me a Membership Application Form and information about the following (please tick relevant boxes):

❑ General thyroid information	❑ Thyroid function tests	❑ Hypothyroidism (underactive thyroid)
❑ Hyperthyroidism (overactive thyroid)	❑ Thyroid eye disease	❑ Thyroid cancer
❑ Thyroid nodules	❑ Paediatric issues	❑ Fertility and pregnancy

❑ Other (please specify) .....

❑ Publications List & Order Form

Please send this information to:

Title: ..... Name: .....

Address: .....

.....

Phone: .....

Signature: .....

Disclaimer

All materials provided by Thyroid Australia Ltd are for information purposes only and do not constitute medical advice.

Thyroid Australia Ltd
ACN 094 832 023 ABN 71 094 832 023