



THYROID FLYER

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Newsletter of Thyroid Australia

Introductory Edition, October 1999

Feature - Iodine Deficiency Disorders

Welcome to Thyroid Australia

By MEGAN STEVENS

It gives us great pleasure to introduce you to our organisation through our first newsletter. The idea for Thyroid Australia was conceived around a Melbourne suburban dining-room table in June 1999. The group who sat around that table were:

- * Colleen Dean
- * Kay Horley
- * Christopher McDermott
- * Alun Stevens
- * Megan Stevens

Another supporter, Karin Latimer, was in Italy at the time, where she attended the Thyroid Federation International meeting in Milan in late August.

But Thyroid Australia is bigger than the six of us - it is aimed at the one in fourteen Australians who are affected by thyroid conditions, who may or may not even know it. It is also aimed at their friends and family who know the difficulties of living with someone who is afflicted with a thyroid condition.

Thyroid Australia has already embarked on our quest to raise awareness of thyroid conditions within the community - on Thursday 5 August, I appeared on the "Dr. David" segment of the Leigh Drew show on Radio 3AK to discuss thyroid disease and my experience.

Our first newsletter is devoted largely to Iodine Deficiency Disorders, some-

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OUR AIMS

To raise awareness of and interest in thyroid conditions

To support those with thyroid conditions, their families and friends

To assist in fundraising for thyroid research

SOS for a Billion: The Elimination of Iodine Deficiency Disorders (IDD)

By BASIL S HETZEL MD

INTRODUCTION

The elimination of iodine deficiency disorders (IDD) has been included in the Plan of Action adopted by the World Summit for Children held at the United Nations New York in September 1990. This Plan of Action was signed by 71 Heads of State and 80 nominated representatives of other governments. It represents an unprecedented commitment by governments to the future health and well being of all children in the world.

The all important fact is that iodine deficiency is the most common preventable cause of mental deficiency in the world today (Hetzel 1989). The World Health Organization has estimated that elimination of iodine deficiency would prevent the brain damage that has caused irreversible mental handicap to at least 20 million people walking around today! Remarkable success has been achieved by the use of iodised salt to correct this deficiency in industrialised countries since 1920.

However, there is still a very big lag in the use of this salt technology in developing countries for an at risk population estimated by the World Health Organisation to reach one billion.

How is this to be achieved?

In order to achieve the objective of elimination of IDD by the year 2000 the national governments in developing countries need to develop public health programmes.

To bridge the gap between scientific knowledge available and its application to the elimination of IDD by public health programmes in developing countries an international organisation - the International Council for Control of Iodine Deficiency Disorders - was established in 1986.

The International Council for Control of Iodine Deficiency Disorders (ICCIDD)

The ICCIDD consists of a global multidisciplinary network of 300 scientists, public health professionals, and salt technologists committed to the elimination of IDD by the year 2000. There is a Board of 32 members with a majority from developing countries (Hetzel et al 1989; Hetzel 1989).

The major objective of the ICCIDD is to cooperate with the major international agencies, particularly the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), and key bilateral aid giving agencies, in the development of national IDD control programmes in countries with significant IDD problems.

These programmes are the responsibility of national governments in developing countries yet there has been, until recently, no general awareness of the significance of IDD for national development.

One major function of the ICCIDD is therefore the communication of this IDD message to decision makers or national governments, international agencies, and a wide variety of health professionals and planners and to industry.

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Fig. 1. A dwarfed cretin from Singjiang China who is also deaf mute. This condition is completely preventable. Right: the "barefoot doctor" from her village. Both women are about 35 years of age. (By courtesy of Dr. T. Ma, Tianjin, China.)

Australia has provided a leading role in the development of the work of the ICCIDD since 1986. There is now greatly increased awareness of the problem by national governments and international agencies so that national programmes are now being established.

Let us now go on to consider the problem we have to meet.

The Ecology of Iodine

Iodine deficiency is recognised as a global problem with an estimated population of 1.6 billion at risk because they live in an environment where the soil has been deprived of iodine. This arises either from the long distant past through glaciation, compounded by the leaching effects of snow water and heavy rainfall which removes iodine from the soil. So we find the mountainous regions of Europe, the Northern Indian Subcontinent, the extensive mountain ranges of China, the Andean region in South America and the lesser ranges of Africa are all iodine deficient. But in addition we now know that the soil of flooded river valleys is also deprived of iodine as in the Ganges

Valley in India, the Irawaddy Valley in Burma, the Songkala valley in Northern China, which indicates that the problem of iodine deficiency is increasing.

The deficiency in the soil leads to deficiency in all forms of plant life and cereal grown in the soil. Hence populations living in systems of subsistence agriculture are "locked into" iodine deficiency. An example is Western China (Sinjiang) where although the soil is fertile so that corn can be grown, it is severely iodine deficient with severe effects on the people, many of whom are dwarfed and mentally deficient (Fig. 1).

The Impact of Iodine Deficiency - The Iodine Deficiency Disorders

The continued lack of iodine in the diet leads to impaired function of the thyroid gland which enlarges to form a goitre. However in spite of this, a continuing deficiency can lead to a lowering of the level of thyroid hormone in the blood causing retardation of the growth and development of the individual. This effect is particularly important on the developing brain during periods of rapid growth, including the fetus during pregnancy, early infancy and childhood. There are also effects in the adult population, with reduced physical and mental energy due to hypothyroidism. Iodine deficiency is the most important preventable cause of mental defect in the world today.

We can describe an "iceberg" of the effects of severe iodine deficiency on a population of which cretinism is the most visible manifestation (1-10%), then lesser degrees of brain damage (5-30%), with hypothyroidism causing loss of mental and physical energy much more common (30-50%). All these effects are included in the term iodine deficiency disorders (IDD). They can all be prevented by correction of the iodine deficiency.

In the more severely iodine deficient communities there are so many affected that the quality of social life is greatly reduced with effects on school performance in children and productivity in adults. There are also significant effects on livestock, with impaired reproduction in poultry, sheep, goats and cattle (as also in persons) with reduced wool growth and milk production and reduced survival rates in offspring (Fig. 2)

The extent of IDD in the world has now been estimated by the World Health Organisation (1990). In the at risk population of 1.6 billion, in excess of 200 mil-

lion have goitre and 20 million have some degree of brain damage due to the effects of iodine deficiency in pregnancy.

We can deduce for any country with a population of 1 million exposed to severe iodine deficiency - 200,000 will have goitre and 20,000 will have some degree of brain damage. Many countries have populations up to 1-20 million at risk, with China 400 million and India 200 million at risk. All these effects can be completely prevented by correction of iodine deficiency as was shown first in Switzerland. Some, like hypothyroidism, can be effectively reversed by iodine after they have developed, but the effects on the brain in early life are irreversible.

It is important to realise that iodine deficiency is still present over very large areas where the soil is deprived of iodine. However since 1920, the effects of this iodine deficiency have been eliminated in many industrialised countries in North

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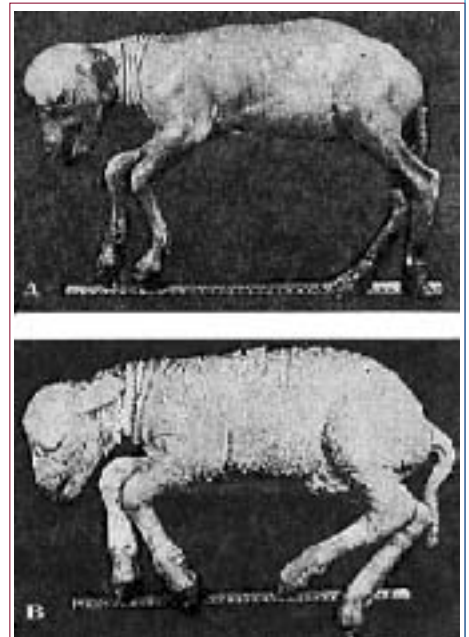


Fig. 2. Effect of severe iodine deficiency during pregnancy on lamb development. An 140-day-old lamb fetus (a) was subjected to severe iodine deficiency through feeding the mother an iodine deficient diet for 6 months prior to and during pregnancy (full term 150 days) compared to a control lamb (b) of the same age fed the same diet with the addition of an iodine supplement. The iodine deficient lamb showed absence of wool coat, dislocation of the leg joints, with a smaller brain. The figure illustrates that iodine is essential for animal development.

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America, Northern Europe, Australia and New Zealand by the addition of iodine to the diet.

The great challenge is to eliminate IDD from all countries by the year 2000 just as it has already been eliminated in most industrialised countries.

IODISED SALT

It is most economical to correct iodine deficiency by the addition of iodine to the diet. This can be done through the addition of iodine to salt, water, various sauces or in an oily form.

Iodised salt is the major resource for the elimination of IDD by the year 2000. Iodine in the form of potassium iodate can be readily mixed with salt at concentrations of 40 to 100 mg iodine per kilo. The concentration used depends on the level of salt intake, the climate and the distance it has to be transported - to provide the essential requirements of 150-200 micrograms (μg) of iodine per day - the equivalent of less than a teaspoonful for a whole lifetime!

It has been shown that the effects of iodine deficiency can be totally prevented by an effective iodised salt programme in Switzerland (Burgi et al 1990) and some other countries where formerly there was severe mental deficiency (cretinism and deaf-mutism). In other Western countries, diversification of diet has also been a factor in the correction of iodine deficiency and the elimination of IDD. In Latin America there has been considerable progress. In Asia, some progress is being made with large populations in China, India and Indonesia; and in Africa, in Algeria, Kenya and Ethiopia, but there is still a long way to go with 39 countries affected.

In India, the production and transport of iodised salt from the salt sources in Rajasthan, Gujarat and Tamil Nadu to the iodine deficient areas mainly in the Himalayan belt, has now reached 2.5 million tonnes per year. More than ten times what it was ten years before.

In the past 3 years an imaginative plan has been developed for Africa whereby iodised salt sources in Cameroon, Botswana, Tanzania and Kenya are now reaching neighbouring countries.

Progress Towards the Target of Elimination

What then is the present state of IDD control in the world today?

We can best consider this by region -
In Europe elimination has been achieved in most, but not all countries - Germany, Italy, Spain, Poland, Rumania, and countries of the former USSR, and others still have to make their control programmes fully effective for their whole iodine deficient population.

In Latin America the objective of the establishment of National IDD control commissions, with IDD control units, has been achieved in nearly all countries. Significant challenges remain in Peru, and Central America. Great progress has recently been made by Ecuador and Bolivia.

In SE Asia national programmes are now operating in most countries. India, Indonesia, Nepal, Burma, Thailand and Bangladesh have made good progress but still have some distance to go to cover their whole populations.

In Africa there is the furthest to go - with significant problems in no less than 45 countries including 6 in Northern Africa. There are formidable difficulties in a number of countries due to war and drought, but with the effective regional organisation of the supply of iodised salt already initiated, control could be achieved by 2000.

In China, a complete review of the National Programme has been undertaken. A restructuring of the salt industry to provide for the more efficient production of iodised salt is being carried out. This will provide for more effective iodisation for the population of more than 400 million at risk of the effects of iodine deficiency.

CONCLUSION

So we can see there is now a steady tide of advance in the elimination of IDD, this ancient scourge of the world. The Western world has nearly achieved it, with Latin America next, followed by Asia where a number of national programmes are making good progress. Finally Africa is showing good progress since 1987.

It was in 1978 that the following Joint Statement was made by WHO and UNICEF -

"Iodine deficiency is so simple to prevent that it is a crime to let a single child be born medically handicapped for this reason."

Many children are still being born with this handicap - 20 million of them are walking around today. As a result of these recent developments we are confident that this ancient scourge can be eliminated.

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Burgi, H., Supersaxo, Z, & Beat, S., 1990. 'Iodine deficiency diseases in Switzerland one hundred years after Theodor Kocher's survey: A historical review with some new goitre prevalence data.' *Acta Endocrinol.* 123:577-590.

Hetzel, B.S., Dunn, J.T. & Stanbury, J.B., 1987. *The Prevention and Control of Iodine Deficiency Disorders*, Elsevier, Amsterdam.

Hetzel, B.S., 1989. *The Story of Iodine Deficiency: An international challenge in nutrition*. Oxford University Press, Oxford/Delhi.

World Health Organisation, 1990. *Report to 43rd World Health Assembly*, Geneva.

Basil S. Hetzel, MD, is Chairman of the International Council for Control of Iodine Deficiency Disorders (ICCIDD), and is based in Adelaide, South Australia.

Introduction previously published by the TED Association, UK, June 1996, Newsletter 33.

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Can You Help?

Thyroid Australia has been asked by Prof. Jim Stockigt to seek out and provide thyroid patient information in languages other than English - particularly in Chinese, Greek, Italian, Russian, and Vietnamese.

Do you know of such material, or do you know of any medical professionals who speak those languages who might be interested in writing or translating the relevant material for us?

This will not only help Australians who speak those languages, but also thyroid patients in those countries and elsewhere.

Please contact Megan Stevens at

Thyroid Australia

Phone (03) 9561 2482

Fax (03) 9561 4798

E-mail aalunste@bigpond.net.au

PO Box 2575

Fitroy Delivery Centre

Melbourne VIC 3065

Hypothyroidism: Just the Facts

- Hypothyroidism occurs when the thyroid gland is underactive and does not produce sufficient thyroid hormones.
- Hypothyroidism is the most common thyroid disorder and usually strikes after age 40. It is more common in women than in men, and affects 6% to 10% of women over the age of 65.
- Hashimoto's Thyroiditis, an autoimmune disorder, is the most common cause of hypothyroidism.
- The signs and symptoms of hypothyroidism are:
 - Low energy
 - Depression
 - A slow heart rate
 - Weight gain
 - Cold intolerance
 - Muscle fatigue
 - Dry skin
 - Hair loss
 - Constipation
 - Goitre
- Hypothyroidism is diagnosed through a simple blood test
- Synthetic thyroxine (T4) is a safe, effective and low-cost hormone replacement therapy for hypothyroidism. Dosing must be carefully monitored for best results and the therapy must continue for life
- Synthetic thyroxine is one of the top three most commonly prescribed drugs in North America.

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Based on an article published by the Thyroid Foundation of Canada in Thyrobulletin, Spring 1998, Vol. 19, No. 1.

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Hyperthyroidism: Just the Facts

- Hyperthyroidism occurs when the thyroid gland is overactive and produces too much thyroid hormone.
- Hyperthyroidism affects approximately 2% of women and 0.2% of men.
- Graves' Disease, an autoimmune disorder, is the most common cause of hyperthyroidism.
- The signs and symptoms of hyperthyroidism are:
 - Irritability
 - Rapid heart rate
 - Weight loss
 - Sleeplessness
 - Heat intolerance
 - Diarrhoea
- Hyperthyroidism can speed up the body's metabolism by 60-100%.
- There are three main treatments for hyperthyroidism - anti-thyroid drugs, radioiodine therapy and surgery. All are effective, though no treatment ever results in a complete cure.
- Increasingly, radioiodine is becoming the first-line therapy for hyperthyroidism caused by Graves' Disease.
- After treatment for hyperthyroidism some patients become hypothyroid and will need to take thyroxine for life.
- "Thyroid storm" - severe clinical hyperthyroidism - is a medical emergency. Its symptoms include tachycardia [rapid heart rate] and fever.

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Originally published by the Thyroid Foundation of Canada in Thyrobulletin, Summer 1998, Vol. 19, No. 2.

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Recommended Books

How Your Thyroid Works, H Jack Baskin, 4th ed., (Adams Press, Chicago) 1995.

Thyroid Disease: The Facts, RIS Bayliss & WMG Tunbridge, 2nd ed. (OUP, Oxford) 1991. (ISBN 0 19 262103 3.)

The Thyroid Gland: A Book for Thyroid Patients, Joel I Hamburger & Michael M Kaplan, 7th rev. ed., 1997 (Available through the Thyroid Foundation of America or Amazon.com)

Thyroid Disorders, Rowan Hillson, (Macdonald Optima, London) 1993. (ISBN 0-356-18686-5).

Understanding Your Thyroid Problem, Mark Ragg, (Gore & Osment, Sydney) 1993.

The Thyroid Sourcebook: Everything You Need to Know, Sara M Rosenthal, 3rd ed. (Lowell House, Los Angeles) 1998. (ISBN 0-7373-0014-0)

The Thyroid Book: A Book for Patients, Martin I. Surks., (Consumer Reports Book, New York) 1993. (Available from Dr MI Surks, Montefiore Medical Center, Div of Endocrinology, 111 East 210th Street, Bronx, New York 10467; or by internet at <http://www.thethyroidbook.com>)

Thyroid Problems: A Guide to Symptoms and Treatments, Patsy Westcott, (Thorsons, London) 1995. (ISBN 0 7225 3164 8).

Your Thyroid: A Home Reference, Lawrence C. Wood et al, 3rd ed. (Ballantine Books, New York) 1995. (ISBN 0 345 39170 5).

Give yourself the "Thyroid Neck Check"

It could save your life

All you will need is:

- a glass of water
- a mirror

1. Hold the mirror in your hand, focusing on the area of your neck just below the Adam's apple and immediately above the collarbone. Your thyroid gland is located in this area of your neck.
2. While focusing on this area in the mirror, tip your head back.

3. Take a drink of water and swallow.
4. As you swallow, look at your neck. Check for any bulges or a protrusion in this area when you swallow. Reminder: Don't confuse the Adam's apple with the thyroid gland. The thyroid gland is located further down on your neck, closer to the collarbone. You may want to repeat this process several times.
5. If you do see any bulges or protrusions

in this area, see your doctor immediately. You may have an enlarged thyroid gland or a thyroid nodule and should be checked to determine whether cancer is present or if treatment for thyroid disease is needed.

Originally published by the American Association of Clinical Endocrinologists on their web site at <http://www.aace.com>

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Welcome to Thyroid Australia from Page 1

thing which some Taswegians may remember, but which few non-medical people really have a handle on.

Nowadays, when reading the following passage which describes the effects of IDD, it is difficult to understand the attitudes of people during last century. The passage comes from *Leading the Blind*, by Alan Sillitoe (Papermac). Sillitoe writes about travel handbooks published between 1815 and 1911 by Baedeker, Murray and others. He writes:

"If our traveller came towards Mont Blanc from the Valley of Aosta he would find that it was 'more perhaps than any other in Piedmont afflicted in a horrid degree with cretinism and goitre. Nowhere are they more prevalent than in this beautiful valley. The peasantry appear squalid and filthy a race of beings generally stunted and diseased. Of the whole population in the neighbourhood of Aosta, one in fifty is a cretin; and above half are more or less goitred. Some of these are horrid objects. Tumours as large as their heads are appended to their throats, varying

in number, size, and colour. The dirt, deformity; and imbecility of the inhabitants presented a scene so wretched, that it harrowed our feelings. Not a well dressed or decent-looking person is to be met with; all bear the marks of poverty, disease, and wretchedness; and this too amidst scenes for which nature has done so much. Something weighs upon the people like a curse. Many conjectures have been offered upon the cause of goitres and cretinism. Labour, food, water, air, have all been offered in explanation; but none of these account for it satisfactorily. The opinion of our guide was, that it was chiefly owing to the villainously dirty habits of the people most afflicted with it. He said that among the mountaineers this was the general opinion; and though it sometimes descended in families, and often was observed in infancy, yet it might be traced to the filthy habits of preceding generations.' Similar views were expressed in later editions but, by the end of the century, guidebooks had ceased referring to the disease, which suggested that it had more or less died out."

Well, iodine deficiency disorder hasn't "died out", as **Dr. Basil Hetzel**,

Chairman of the ICCID, and **Peter Kimberley**, of Kiwanis, illustrate.

It is clear iodine is an important nutrient - but what does it actually do? Too little is clearly a problem, as is too much. **Dr. Francis Greenspan** tells us about iodine and the thyroid.

Upcoming Meetings

YOUR THYROID AND YOUR GP
Saturday 20 November 1999

2:00pm

DR. DAVID DAMMERY

3AK's "Dr. David" and
Chairman of Faculty,
Royal Australian College
of General Practitioners, Victoria
St Matthews Anglican Church
cnr. of Earlwood & Lum Rds.
Mulgrave
(Melway 71 F10)

The Thyroid and Iodine

By **FRANCIS S GREENSPAN MD, FACP**

Both of the major hormones secreted by the thyroid gland, thyroxine (T4) and triiodothyronine (T3), contain large amounts of the element iodine. Iodine is found naturally in the soil, but over the years it has been leached out of the soil of mountainous areas and washed down into the oceans. Prior to the 20th century, individuals living near the oceans who ingested a diet containing seafood, had an adequate intake of iodine. Those living inland or in mountainous areas frequently lacked sufficient iodine in their diet to maintain adequate T3 and T4 production by the thyroid gland. The effects of this iodine deficiency and the methods taken in this century to correct it represent a public health achievement which sadly has been only partly successful. I will discuss first the problem of too little iodine intake, and then turn to the problems that can result from too much iodine intake.

Too little iodine

This remains one of the most important worldwide public health problems. There are still large areas of the world where dietary iodine is insufficient for the normal production of thyroid hormones (see map). These areas include central Asia, central Africa, central South

America, and some areas in central Europe. Iodine deficiency does not exist in USA, Canada, and in many of the developed countries in Europe.

The problems resulting from too little iodine in the diet are presented in *Table 1*.

The thyroid gland utilises about 75 micrograms (mcg) of iodine each day to manufacture its hormones. If a person's iodine intake is less than 50 mcg, per day, a series of events develop. First, the secretion of T4 and T3 decreases. Next, the pituitary turns on its thyroid stimulating hormone (TSH) in an effort to increase thyroid hormone production. This causes enlargement of the thyroid gland: the enlarged thyroid is called a *goitre*.

Table 1: Effects of Too Little Iodine

- Hypothyroidism
- Endemic Goitre
- Cretinism (mental retardation and dwarfism)

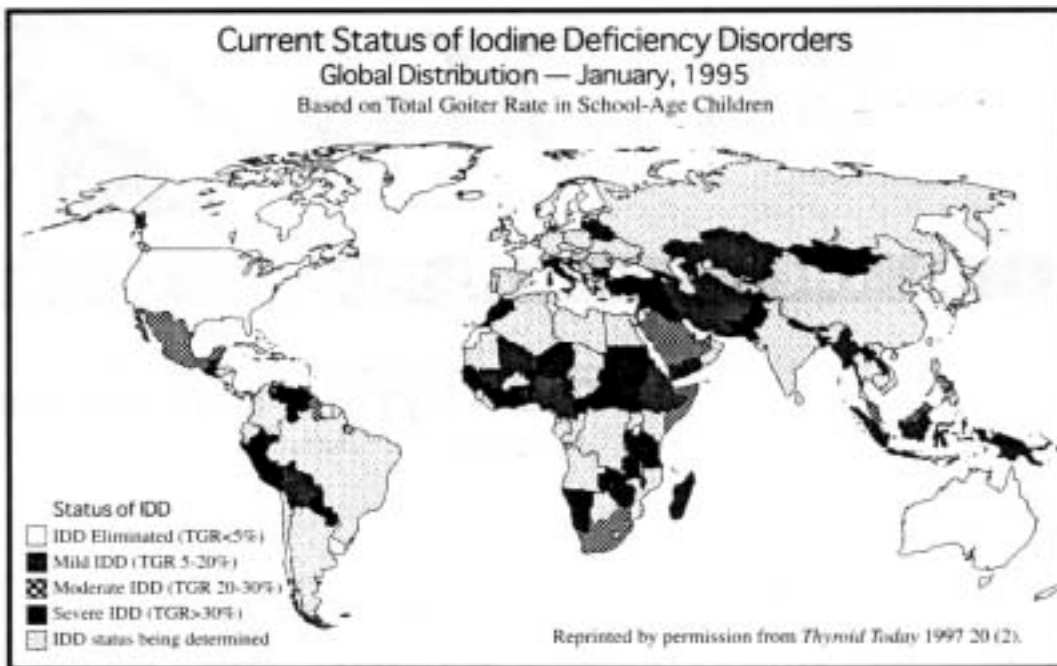
Initially all of the cells in the gland respond to TSH equally and a diffuse goitre is formed. Over time, some cells grow more than others and thyroid nodules form, producing *nodular goitre*.

Sometimes, the enlarged gland is able to produce enough hormone to maintain normal T4 and T3 levels in the blood, but often the subject will become hypothyroid despite the goitre.

The most severe degree of hypothyroidism occurs in infants born to mothers with iodine deficiency. These infants will have small stature (dwarfism), deafness, neurologic disorders, and permanent mental retardation, a syndrome called *cretinism*. These changes are irreversible, but are completely preventable if the mother has an adequate intake of iodine.

Iodine can be added to the diet in many ways. Most commonly, as in the USA, adequate dietary iodine is assured by the use of iodised salt. This was introduced by Dr. David Marine in 1920, and has completely eliminated endemic goitre in the USA. Iodine can be added to salt, water, bread, or given to individuals by injection or oral administration of iodised oil. Unfortunately many less developed countries have severe economic problems limiting their ability to participate in iodination programs. Introduction of iodine into the diet required continued effort by the World Health Organization, International Council for the Con-

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hypothyroidism have been noted associated with amiodorone therapy.

Betadine is a local antiseptic solution but may be sufficiently absorbed through the skin to produce adverse effects.

Finally, many people take kelp tablets, herbal medications, or vitamin and mineral supplements which contain large amounts of iodine, and these may induce some of the problems noted.

Summary

trol of Iodine Deficiency Disorders (ICCIDD), and other public health organizations to develop these programs for needy countries.

Too much iodine

Although adequate iodine is essential for normal thyroid function, too much iodine can also produce problems (*see Table 2*). Large amounts of iodine can inhibit thyroid hormone production, particularly in the glands of patients who have underlying autoimmune thyroid disease (e.g. Hashimoto's thyroiditis). This may cause a goitre and hypothyroidism.

In some patients, excessive administration of iodine can result in hyperthyroidism. This usually occurs in patients with an underlying multinodular goitre, where iodine induces the nodules to overproduce thyroid hormones. Iodine can occasionally cause a similar problem in patients with underlying autoimmune thyroid disease, or even in some patients with normal thyroid glands.

The hyperthyroidism induced by iodine may be difficult to treat. The gland

will have a large store of preformed thyroid hormones which can last a long time in the body. Also the high levels of circulating iodine will delay the effects of antithyroid drug therapy and interfere with the use of radioiodine for therapy.

In addition to hypothyroidism and hyperthyroidism induced by iodine, there are potentially other undesirable effects. A large amount of iodine may confuse the interpretation of a radioiodine uptake test and interfere with radioiodine therapy. However, this action of iodine is useful in that supplements of potassium iodide can protect the thyroid gland from uptake of radioactive iodine in the event of a nuclear catastrophe such as the Chernobyl accident. In some individuals ingestion of iodine can irritate the salivary glands resulting in soreness and inflammation.

The sources of extra iodine in the diet are listed in *Table 3*.

Injected contrast dyes, commonly used for angiography (arterial or coronary artery visualization), contain 5% to 48% iodine. This dose of iodine may be sufficient to induce one of the complications of excess iodine noted above.

Tablets used for visualization of the gallbladder (iopanoic acid or ipodate calcium), or iodinated compounds used for visualization of the kidneys (intravenous pyelogram or retrograde pyelogram) also contain large amounts of iodine.

Some oral medications contain iodine. The most common culprit these days is amiodorone (Cordarone), a drug often used by cardiologists to control abnormal heart rhythms. Both hyperthyroidism and

Iodine is essential for normal thyroid function, but too much or too little can result in illness. In the United States [and in Australia], we live in an area of adequate iodine intake eliminating the need for dietary supplements. Iodine deficiency, however, remains a major public health problem in many parts of the world. Iodine excess, mostly from non-dietary sources, can also produce potentially serious problems.

Table 3: Sources of Excessive Iodine

- Radiographic contrast media
- Amiodorone (*cardiac drug*)
- Betadine (*skin antiseptic*)
- Kelp tablets and some medicinal herbs
- Therapeutic vitamin and mineral capsules (*many multivitamins contain 150 mcg of iodine, 100% of the recommended dietary allowance*)

Table 2: Effects of Too Much Iodine

- Iodine-induced goitre and hypothyroidism
- Iodine-induced hyperthyroidism
- Interference with thyroid tests and treatment
- Iodine allergy
- Sialoadenitis (*inflammation of salivary glands*)

Francis S. Greenspan, MD, FACP is Clinical Professor of Medicine and Radiology, and Chief, Thyroid Clinic, University of California, San Francisco.

Thanks to Dr. John Dunn, author of "Iodine Deficiency: Consequences and Prevention," and to Thyroid Today for permission to use the map on Global Distribution of IDD.

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New Study Suggests More Pregnant Women Should Be Tested

By **LAWRENCE C WOOD, MD**

BOSTON, MA, August 19, 1999 - The Thyroid Foundation of America (TFA) urged today that more pregnant women be tested for hypothyroidism to avoid possible deficits in the intellectual development of their children. This was in response to a new study published in the August 19 issue of the *New England Journal of Medicine*.

"The question is raised as to whether all women should have a screening TSH test before pregnancy or at least in the first trimester," said Dr. Lawrence C. Wood, President and Medical Director of TFA, "At the least, every woman who is considering pregnancy or who becomes pregnant should discuss this important study with her physician to determine her risk for thyroid dysfunction," Dr. Wood said.

The study by pediatrician Dr. James E. Haddow and his colleagues reported that children of 62 women with high serum TSH concentrations performed less well in each of 15 tests of intellectual

function. Most notably, 15% of the children with high TSH levels had full-scale IQ scores of 85 or less, compared with 5% of match controlled children born to mothers with normal thyroid function. They also found lower scores in the areas of attention, language comprehension, and visual motor performance, though in many instances the differences among groups was not statistically significant.

It has been known for some time that women who are profoundly hypothyroid due to iodine deficiency are likely to have children with mental retardation, because the iodine deficiency makes it impossible for either the mother or child to make normal amounts of thyroid hormone.

The new study addresses a more important question for women in developed countries where the amount of dietary iodine is sufficient. The intellectual function of children born to mothers whose serum levels of thyroid stimulating hormone (TSH) increased during pregnancy (indicating hypothyroidism) was tested. The pituitary gland increases production of TSH when thyroid levels fall below normal.

It may not be cost effective to screen every patient for hypothyroidism with a serum TSH test before or during pregnancy. However, if additional research

supports the findings in this study that even mild elevations of serum TSH in a mother pose a risk to the intellectual development in the baby, then every woman should have a TSH test prior to pregnancy or as early as possible in the first trimester.

"Studies with larger numbers of women and their children will surely be done," Dr. Wood said. "We need to know whether children born to mothers with only mild elevations of their TSH (minimal thyroid failure) are at as much risk for subsequent intellectual problems as the children born to women with severe hypothyroidism and very high TSH levels during pregnancy."

Dr. Wood said, "A TSH test should certainly be done for any woman with a family history of hypothyroidism or a related autoimmune disorder, such as insulin-dependent diabetes, the white skin spots of vitiligo, pernicious anemia due to a lack of vitamin B12, or prematurely gray hair (one gray hair before 30). Anyone taking thyroid hormone medication should have a TSH test before pregnancy, and so should anyone with symptoms of hypothyroidism including fatigue, constipation, depression, muscle cramps, and cold intolerance.

Originally published by the TFA on their web site at <http://www.tsh.org>

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Our Plans for the Future

By **ALUN STEVENS**

We believe that to succeed in its aims, Thyroid Australia must:

- Be a truly national organisation which can attract and involve volunteers in all states;
- Gain and retain the respect and support of the medical profession in all states;
- Develop a sound financial base; and,
- Maintain a comprehensive and reliable information base on all aspects of thyroid disease.

We have considered the operating models of a number of voluntary organisations including the well established thyroid support groups in North America. We have developed our own approach, the key elements of which are:

- Thyroid Australia will be established as a public company limited by guar-

antee. It will be subject to the disciplines of the Corporations Law with a formal Constitution, a properly constituted Board of Directors and audited accounts.

- The company will be structured to have Chapters in each state and potentially at a regional level if the demand justifies it. The Chapters will operate autonomously under a local committee which will be responsible to the Board. The Chapter President will be a Director of Thyroid Australia. They will be responsible for local activities and fundraising.
- The company's Constitution is being structured to satisfy the requirements for non-profit status and registration as a charity (which will allow us to attract tax deductible donations). We will be applying to the Australian Taxation Office for approval in due course.
- The Constitution requires the establishment of a panel of medical professionals to advise the Board at a national level and separate panels for each state chapter. Thyroid Australia

will not issue advice or information which does not gain approval from these panels. We would also like to see the panels contributing to our newsletter.

- We will be seeking funding and sponsorship to provide the funds we will require. We will approach a number of health service companies. We will also approach the various state health departments whose funding will be controlled by the local chapters. We are already working to develop multi-lingual support information.

We already have a significant body of thyroid related information from the established support organisations, medical journals, drug companies, etc. The internet is a marvellous resource, and quality information significantly outnumbers the quackery. We currently make this reliable information available by mail and e-mail, and have plans to establish our own web site as soon as we can.

Please contact us if you would like to help or would like more information.

Kiwanis and IDD

By PETER KIMBERLEY

The Origins of Kiwanis

Kiwanis International is a world wide community service organisation which spans more than 80 countries in all regions of the world.

Its origins are in the United States in 1917, and "Kiwanis" (pronounced kee-wah-niss) translates as "we build" from native North American dialects. From these beginnings the Kiwanis family has grown to embrace more than 600,000 members in a network of more than Kiwanis Clubs.

For many years Kiwanis Clubs concentrated their energies on giving service to their local communities. Early in the 1990s, however, two important developments occurred.

First was a policy decision that, while Kiwanis should continue to meet the wide range of needs which their communities demanded, as an organisation Kiwanis would develop a clear focus on meeting the needs of children - especially young children. Under this policy Kiwanis Clubs and members around the world were encouraged to identify needs and activities under the banner of YCPO - Young Children Priority One.

The YCPO focus has been further developed since 1990 with the formal adoption of a Mission Statement for Kiwanis International, which states that "*Kiwanis International will be the world's leading organisation engaging adult and youth volunteers to meet the needs of children.*"

Also in the early 1990s, Kiwanis International leaders determined that to reinforce the Kiwanis presence as a leading International Service organisation, a world scale and significant life-changing project, meeting the urgent needs of world communities and individuals, should be adopted.

Kiwanis and IDD

After considering many possibilities, a decision was made - and acclaimed by delegates to conventions in Nice (1993) and New Orleans (1994) - that Kiwanis would lend its support to efforts already underway to eliminate the scourge of Iodine Deficiency Disorders (IDD) throughout the world.

Thus the Kiwanis IDD World Service Project was born. The project met a number of important criteria, in that:

* Kiwanis Clubs would be working in conjunction with expert partners, United Nations Children's Fund (UNICEF) and the World Health Organisation (WHO), an important requirement because Kiwanis had no special expertise in the area of IDD

* the Project had an achievable and measurable goal within a limited time frame, ie the elimination of the threat of IDD by the year 2000. This was important also - Kiwanis prefers to support projects which have a finite time frame so that the next one may be commenced.

* with over 500 million young children and countless unborn children threatened directly by IDD, the project fitted clearly under Kiwanis' YCPO umbrella.

Kiwanis International's commitment to the IDD World Service Project is to raise \$US75 million, the estimated cost of installing and commissioning the required number of salt iodisation plants in selected countries and regions. When this is done, iodised salt will be readily available to all populations at risk however remote their location. Also, some funds will be applied to the education of local communities in the need for the iodised salt which will become available.

Since 1995, when the Project was officially launched, Kiwanis members around the world have supported the cause magnificently. To date over \$US40 million has been raised, and with further amounts already pledged and fund raising efforts continuing through the year 2000, there is no doubt that the goal will be met.

There is already direct evidence that the combined efforts of Kiwanis, UNICEF and WHO are bearing fruit. Some countries have had almost 100% penetration of iodised salt usage and elimination of IDD is well within reach. In all other areas progress is real, even though there is still much to be done.

The UNICEF and Kiwanis partnership has worked effectively and both organisations have benefited from the cooperation on the project. Kiwanians have had the opportunity to accompany UNICEF and WHO staff in visits to many communities in remote locations to inspect the salt plant installations and to see the impact of their

work. Roger Moore, the UNICEF Goodwill Ambassador assigned to the project, has participated enthusiastically with Kiwanians in many activities in the support of the IDD World Service project.

Kiwanis In Australia

In Australia, Kiwanis has been established since 1967 and currently numbers over 1300 men and women volunteers in 65 Kiwanis Clubs in all mainland states.

Although the threat of IDD does not exist here, Australian Kiwanians have supported the project enthusiastically, promoting the theme that we have the opportunity to save the life of a child for only 5 cents (a reference to the \$75 million cost to save 1500 million lives from the threat of IDD).

Kiwanis Australia has adopted Sri Lanka as the country to which its contributions - which are expected to exceed \$350,000 by the close of the campaign - are directed.

Kiwanis Australia has been proud to have Dr. Basil Hetzel, a distinguished Australian and one of the world's leading authorities on IDD, as Patron of our campaign. UNICEF Goodwill Ambassador Ken Done has also lent his support to Kiwanis fundraising efforts.

For further information about Kiwanis Australia please contact the author on peterk@users.impaq.net.au.

Peter Kimberley lives in Melbourne. He has been a Kiwanian for 18 years and is currently serving as Governor of the Australia District and a Member of the Kiwanis International Council.

Our Logo: Why a butterfly?

The thyroid is shaped like a butterfly, and *Papilio Ulysses* has been described as the flashiest of those in Australia, with the bright blue-green contrasting against the black background of the wings.

Disclaimer

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

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