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NAPIERS *the* HERBALISTS

SEAWEED

HOW TO TAKE CARE

of

YOUR THYROID

with

NATURAL IODINE

by

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Surviving the STRESSES & STRAINS

of MODERN DAY LIVING



DUNCAN NAPIER

Our Beloved Founder

Herbalist, Medical Botanist and Collector of Wild Herbs & Seaweeds

1831-1921

SINCE THE BEGINNING, people have eaten plants, including *algae* such as *seaweeds*. Over the course of *thousands of years*, our body's organs have evolved to *maximize the nourishment* we take from the *plants we consume*. Over time we have learned that there are certain plants that, when properly utilised, can bring us *increased health*, and even more than that, are *essential for health*.

However, *modern living* is very different now from our ancient past. The foods we eat have changed and yet our bodies are still *tuned to an older diet*. Here in Britain, there is *a nutrient missing* from our diet that is *crucial* to health ~ *iodine*. Researchers have found that:

76% of British teenage school girls (aged 14) and
66% of women tested are iodine insufficient¹

52% of UK students (aged 25) are iodine insufficient²

82% British pregnant women are iodine insufficient³

49% babies are mildly iodine insufficient⁴

Globally 3% of people get goitre from this deficiency⁵

1. Vanderpump et al., 2011

2. Combet et al., 2014
3. Bath et al., 2010

4. Skeaff et al., 2005
5. Vos et al., 2012

Iodine is critical to healthy thyroid function. A lack of it can cause low energy, weight gain, depression, muscle pain, coldness, constipation, heart disease, cognitive decline, and a variety of cancers. And for unborn babies, a lack of iodine in their mothers can lead to poor mental abilities, cretinism and autism. Did you know that the World Health Organisation (WHO) has declared that the UK has a *national problem* of iodine insufficiency?

As even mild iodine deficiency during pregnancy has an *irreversible impact* on children's educational outcomes in the first 9 years of life¹, British researchers say that iodine insufficiency in pregnant women in the UK should be treated as an *important public health issue*².

If the thyroid gland is *undernourished*, hypothyroidism (*underactive thyroid*) can develop. During 2006, 12 million prescriptions for levothyroxine were dispensed in England alone, equivalent to about 1.6 million people taking long term thyroid replacement therapy, or about 3% of the British population³.

1. Hynes et al., 2013
2. Bath et al., 2010

3. Vaidya & Pearce, 2008

SO WHAT IS IODINE?

Iodine is *the* mineral that our thyroid gland *has to have* to make thyroid hormones that make our bodies function properly. It can be found *naturally* as chelated iodine in *seaweeds* & ocean fish, with a little in milk & eggs. It is also manufactured as potassium iodide that, in some countries, is added to salt or found in iodine supplements.

WHAT IS THE THYROID GLAND?

The butterfly-shaped thyroid gland is in the neck below the Adam's apple. It is part of the endocrine system.

WHAT DOES THE THYROID GLAND DO?

The thyroid gland uses iodine from your diet and produces 3 hormones that go to every cell in your body.

- Thyroxine (T4), a pro-hormone, which converts to the hormone T3 in the body
- Triiodothyronine (T3), a hormone required by all the body's cells and tissues
- Calcitonin which works with parathyroid hormone (PTH) to balance blood calcium levels

The thyroid gland and its hormones have several *critical functions*.

- To control growth and development in early life, especially the brain, cognitive & mental development
- To control the body's metabolism, the speed at which your body's biochemistry functions
- To regulate cardiovascular function, in other words how your heart performs¹
- To maintain homeostasis; your body temperature²
- Every cell in your body has a receptor for and needs the thyroid hormones made by your thyroid!

WHAT IS UNDERACTIVE THYROID?

Hypothyroidism is the name of the condition where the thyroid gland does not produce enough thyroid hormones. This causes your body's metabolism to run too slowly. Then, imbalances in your body's chemistry and functions start to occur.

If you do not have sufficient iodine in your diet, over time, you may well develop an underactive thyroid.

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|----------------------------|--------------------------|--------------------------|
| 1. Klein & Ojamaa, 2001 | 4. Davis & Tremont, 2007 | 7. Klein & Ojamaa, 2001 |
| 2. Warner & MiDag, 2012 | 5. Bono & al., 2004 | 8. Warner & Mittag, 2012 |
| 3. de Benoist et al., 2008 | 6. Arojoki et al., 2000 | 9. Chidakel et al., 2005 |

SIGNS OF AN UNDERACTIVE THYROID

- decreased energy
- difficulty losing weight
- dry skin
- thinning hair
- constipation
- slow heart rate
- feeling cold all the time
- muscle aches and pains
- forgetfulness and cognitive decline



If this is not corrected it can lead to problems such as:

- obesity
- goitre³, a large lump in your neck
- melancholic depression⁴
- senile dementia⁵
- infertility⁶ and problems getting pregnant
- cardiovascular problems⁷ with your heart
- homeostatic imbalance⁸ & trouble keeping warm
- an increased risk of diabetes⁹
- mortality in high risk groups (e.g. dialysis patients)

THE IMPACT ON BABIES & CHILDREN

Conclusive evidence shows that mild iodine deficiency during pregnancy can have long-term negative impacts on the neural and cognitive development of babies. It is not improved by iodine correction during childhood¹.

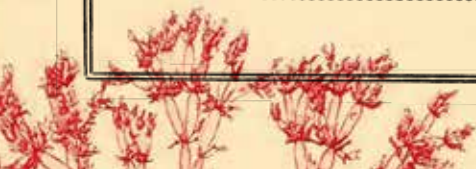
Autism in children is also four times more likely if the mother had a weakened thyroid gland while pregnant².

THE CAUSES OF UNDERACTIVE THYROID

- 1 The most common cause of a weakened thyroid is not having *enough iodine* in your diet. This leads to not enough thyroid hormones (T3, T4) being made and a *rise* in thyroid stimulating hormone (TSH) as your body tries to stimulate higher production.
- 2 You may have developed an *auto-immune disease* such as *Hashimoto's* thyroiditis.
- 3 You have *no thyroid* or have a *damaged thyroid*. For example, after radiotherapy or an operation.

1. Hynes et al., 2013

2. Román et al., 2013



PREVENTION IS BETTER THAN CURE!

Make sure you have *sufficient iodine* in your diet to stop your thyroid becoming *undernourished & run down*.

If you leave it *too late* to correct iodine deficiency in your *daily diet*, you may need to take the drug *levothyroxine sodium* every day for the *rest of your life*.

This is the only treatment currently recommended by the Royal College of Physicians.



Your doctor can test you to find out if your thyroid is clinically underactive. A high TSH level is an indicator that your thyroid is stressed & underperforming.

However, if your thyroid is not too damaged and its function is borderline, or if you have symptoms but your test results are in the '*normal*' range, you may find that ensuring you get enough iodine makes a big difference.

GETTING YOUR DAILY IODINE

Excellent sources of iodine, stating the amount needed to reach your *minimum daily intake*, include:

Ocean fish

Such as one and a half *whole* mackerel *a day*

or

Milk, *non-organic**: 3 large glasses *a day*

or

Eggs, *large*: 2 *a day*

or

Some fortified cereals or iodised salt *daily*

or, best of all,

Seaweed

Take half a teaspoon of seaweed powder every day.

Cook with it, add it to food or nibble seaweed crisps.

We also know that not everyone likes the *taste of seaweed* so Napiers have put organic *Ascophyllum nodosum* into a handy *one-a-day* capsule for you.

**Take 1 x Napiers Organic Hebridean Kelp capsule
a day to get the iodine that you need.**

Even if you eat fairly well, the chances are that unless you eat a lot of sea fish and seaweed, you may still be iodine insufficient. Other chemicals above iodine in the periodic table - *bromine, chlorine & fluorine* - displace iodine. So bread & sugar bleaches, fluoride toothpaste, oralcare products, chlorinated water, infant formula, artificial sweeteners & non-stick Teflon pans, can all lower the absorption of iodine from your food.

The recommended daily dose of iodine (in the UK) is 140 mcg. A Danish study found that women just taking iodised salt were *not protected*¹ nor were they if they took a multivitamin with *only* 140 mcg iodine² (as recommended in the UK).

WHO and UNICEF both recommend that pregnant women take a *minimum* of 250 mcg of iodine a day.

This is a low intake compared to Japan, where seaweed regularly eaten. Japanese people eat *seaweed* every day, in much larger amounts than in the west, and are amongst the healthiest and longest living of people.

Half a teaspoon of eggwrack kelp *Ascophyllum nodosum* or one Napiers capsule gives you 350 mcg of iodine.

1. Andersen et al., 2013

2. Vandevijvere et al., 2013

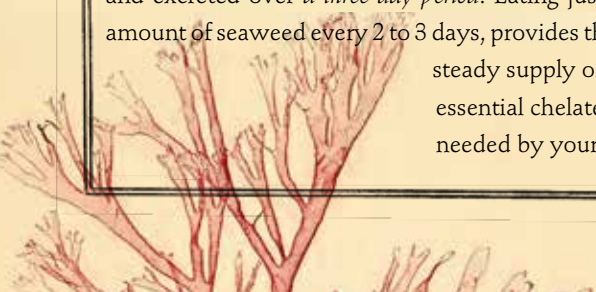
WHICH IODINE IS BETTER?

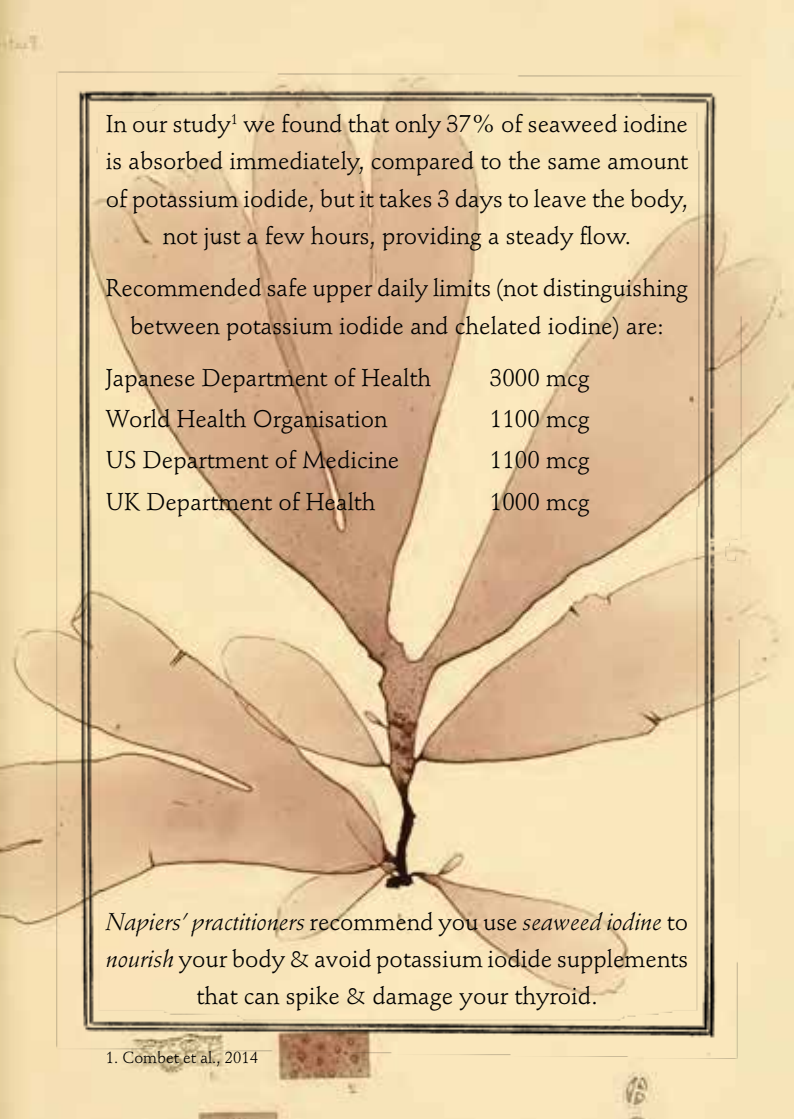
There are actually *two* main types of iodine. *Potassium iodide* (found in iodised salt and many food supplements) and *chelated iodine* found naturally in *seaweeds*.

You may have heard that *too much iodine* can overstimulate the thyroid, possibly leading to an overactive thyroid. However, as the different types of iodine behave differently in your body, it is important to choose *the right type* of iodine.

Manufactured *potassium iodide* is absorbed by your body very quickly and excreted again within three hours¹. This creates short, sharp *iodine spikes*. Countries with iodised salt programs have concerns that people can end up with overactive thyroid or autoimmune disease. And it's not good just to get *iodine from salt*, as too much salt in your diet can lead to *high blood pressure*.

Natural *chelated iodine* is absorbed by the body slowly and excreted over a *three day period*. Eating just a small amount of seaweed every 2 to 3 days, provides the stable, steady supply of natural, essential chelated iodine needed by your thyroid.





In our study¹ we found that only 37% of seaweed iodine is absorbed immediately, compared to the same amount of potassium iodide, but it takes 3 days to leave the body, not just a few hours, providing a steady flow.

Recommended safe upper daily limits (not distinguishing between potassium iodide and chelated iodine) are:

Japanese Department of Health	3000 mcg
World Health Organisation	1100 mcg
US Department of Medicine	1100 mcg
UK Department of Health	1000 mcg

Napiers' practitioners recommend you use *seaweed iodine* to *nourish* your body & avoid potassium iodide supplements that can spike & damage your thyroid.

Napiers Seagreens® Organic Hebridean Kelp Capsules contain a certified organic, *low temperature dried* seaweed called *Ascophyllum nodosum* aka eggwrack or Norwegian kelp. Organic is important, as the sea can be polluted by sewage or heavy metals. *Every batch* of our seaweed is tested for purity. The seaweed is *sustainably harvested* with no damage done to the seabed or marine life. We are a member of the Seaweed Health Foundation.

As well as chelated iodine, seaweed is also a complete food. It contains a huge range of other vitamins, such as B9 & B12, minerals, amino acids, nutrients including magnesium that your body needs to utilise the iodine.

OUR RESEARCH

We did a *research study* with the University of Glasgow¹. It measured the urine, blood and iodine levels of 50 volunteers, aged 25 on average. At the start, 52% of our group were *iodine insufficient* with *high TSH levels*. We found that taking one 500 mg Napiers capsule each day for just two weeks:

- increased their urinary iodine within safe levels
- normalised the production of thyroid stimulating hormone (TSH) across the whole group

- the matrix structure of seaweed delayed iodine absorption *avoiding* sharp peaks of iodine
- the seaweed matrix enables a *sustained release* of iodine over a *three day* period

From this, here at Napiers we concluded that:

- sufficient iodine intake can prevent the development of hypothyroidism in some cases
- the slow, stable release of chelated iodine is a safer more reliable form of iodine supplementation than potassium iodide
- sufficient iodine intake can reverse the symptoms of hypothyroidism in some cases

Our study is: Combet, E. (2014). Low-level seaweed supplementation improves iodine status in iodine-insufficient women. *British Journal of Nutrition*, 9:1-9.

ALREADY TAKING LEVOTHYROXINE?

Some of our *hypothyroid patients* who take *levothyroxine* have taken encapsulated seaweed. In *some cases*, when they start to take seaweed, correcting an *underlying dietary deficiency*, their dose of *levothyroxine* is lowered or stopped. If you take *levothyroxine*, please *contact us for advice* for you to discuss with your doctor.

At Napiers, *our* experience is that:

Hypothyroidism is often *caused* by low dietary iodine.

Seaweeds such as *Ascophylum nodosum* can correct iodine insufficiency & *normalise* TSH levels.

Safe dietary iodine supplementation is *necessary* for optimum baseline thyroid health

While levothyroxine is reasonably well-tolerated, it *does not restore* normal thyroid state to all your tissues.

It only *replaces* T4 hormone.

In many cases, levothyroxine should be given to treat T4 insufficiency *after* a person's dietary iodine intake is corrected, if their thyroid *still* needs support.

Contact us at advice@napiers.net for more information about seaweed; papers, notes for your doctor, seaweed recipes, etc.

To buy Napiers Seagreens Organic Hebridean Kelp or thyroid (TSH) home health tests, or make an appointment with a qualified medical herbalist visit our clinics in Edinburgh or Glasgow or at

www.napiers.net

Telephone 0845 002 1860 or 0131 263 1860