



# The Public Health Post

Public Health for Primary Care in Wellington, Wairarapa and the Hutt Valley

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Formerly published as the 'Communicable Disease Bulletin', we have changed the name to reflect that our content is not always about communicable disease. We retain a focus on infectious disease issues relevant to our region and the country. Enquiries regarding public health topics are welcome from primary care practitioners. Individual cases or urgent matters should always be discussed directly with the on call Medical Officer of Health.

## Measles Rash and Koplik's Spots



Many health care staff trained in New Zealand (especially younger ones) have never seen a case of measles. We would very much like this to remain the situation in Wellington, and promote and support all efforts to ensure that MMR coverage is as high as possible, not just for young children but also for older children and adults up to the age of 42.

These pictures, reproduced with permission and thanks, from a confirmed case of measles clearly illustrate the characteristic rash and sometimes elusive Koplik's spots. People presenting with fever and a rash in primary care should be immediately triaged, ideally before entering the practice, and infection control measures implemented.

## Meningococcal C Latest

As at 10 October there have been 11 cases of meningococcal disease in the Greater Wellington Region during 2011, including 3 cases of the Group C strain. Six of these cases occurred in September, including 2 of the Group C strain.

In Northland a community-wide outbreak of 6 Group C cases in three months led to the implementation of a vaccination programme for everyone aged 1-20 years. At this point in time the rates for Group C disease are well below the trigger point for this intervention in the Greater Wellington region. We continue to monitor this situation closely.

The quadrivalent meningococcal vaccination (Mencevax ACWY, and Menomune ACYW-135) or the conjugate Group C vaccine (Meningitec) is recommended but not funded for the following groups:

- Young adults entering hostel accommodation
- Military recruits
- Microbiologists and lab workers with likely exposure
- Travelers to countries experiencing epidemics of meningococcal disease.

Other patients (or their parents) requesting meningococcal vaccination should have a discussion around the cost, risks and benefits with their GP, and the vaccine can be prescribed if requested and indicated. The vaccine being given in the Northland programme is the conjugate vaccine, Meningitec. This is thought to provide longer immunity (five years). The quadrivalent (A,C,Y,W135) polysaccharide vaccines have the advantage of being less expensive, and are appropriate for travelers going to areas (eg visiting Mecca for the Hajj pilgrimage) where outbreaks of Group A and W 135 meningococcal disease occur and for people pre and post splenectomy.

For more detailed information on the Meningococcal Group C vaccines see the Immunisation Handbook 2010 (p. 291-302).

### In this issue

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# Iodine prescriptions for pregnancy and breastfeeding

## New Zealand part of a major successful world-wide Public Health effort

*Iodine tablets have recently been made fully funded and are recommended for all healthy women who are pregnant or breastfeeding<sup>1</sup>.*

*The decision to recommend this daily registered tablet had a careful and considered gestation. This article explains the problem and the reasoning behind recommending a daily registered iodine tablet to healthy pregnant and breastfeeding women in New Zealand.*

In the past New Zealand has had high rates of iodine deficiency and iodine deficiency related goitre to the extent that in the early 1900s one third of school age children are estimated to have had thyroid enlargement<sup>1,2</sup>.

Thyroid enlargement develops with relatively mild levels of iodine deficiency and is the most obvious result of insufficient iodine. However, iodine is critical for normal brain development and it is the resulting brain damage from not having enough iodine that causes the most concern with respect to the risk to individuals within the population.

The World Health Organisation has a major focus on improving the iodine status of people all around the world because of the very large numbers of people affected:

**“Iodine deficiency is the world's most prevalent, yet easily preventable, cause of brain damage. Today we are on the verge of eliminating it – an achievement that will be hailed as a major public health triumph that ranks with getting rid of smallpox and poliomyelitis.”<sup>3</sup>**

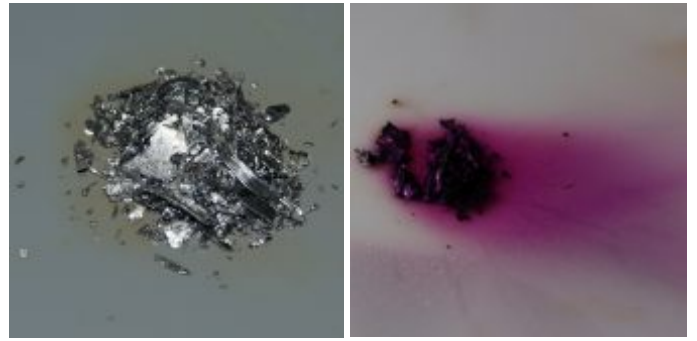
The main means to improve people's iodine levels used around the world is the iodisation of salt. This has been shown to be a cheap and effective public health intervention. Other methods that have been used include adding iodine to bread, water, sugar and animal feeds<sup>3</sup>.

In 1920 Switzerland introduced iodine supplementation to salt, and soon after in 1924 New Zealand did the same. The concentration was increased in 1938 to levels similar to those still used today. This approach was extremely effective so that by 1953 school surveys suggested that the rate of goitre was down to about 1%.<sup>2</sup>

Studies in the 1960s and 1980s suggested that New Zealanders had improved iodine status and the focus went off iodine deficiency as a problem until a study of Waikato and Dunedin blood donors, published in 1997, identified low iodine levels and suggested that the iodine status of New Zealanders “may no longer be considered adequate and may once again be approaching levels of intake associated with clinical iodine deficiency.”<sup>4</sup>

Reductions in salt intake overall and in iodised salt in particular are likely to be one reason behind the drop in iodine status. Other probable contributing factors are the increased consumption of commercially-prepared foods, manufactured mostly with non-iodised salt, and reduced incidental iodine consumption from the declining use of iodine-containing sanitizers by the dairy industry.

Further studies have quantified the low levels in wider groups of the New Zealand population<sup>5</sup> and because of the crucial role of iodine in the developing brain the focus shifted towards babies and pregnant women.



Iodine<sup>11</sup> is an essential element for normal brain development.

The Endocrine Society advice is that there is good evidence to support a recommended average daily intake of iodine of 150ug per day for all women of childbearing age. During pregnancy and breast feeding the intake should increase to 250ug per day on average.<sup>6</sup>

There is good evidence that the urine iodine concentration in a cohort of the population can provide a guide as to whether additional iodine supplementation is needed at a population level. A level of 150ug/L to 250ug/L indicates adequate intake.<sup>6</sup>

**Recent studies in New Zealand have shown that our levels are far below this range.** In 2005 a study of 170 pregnant women found that the median urinary iodine level was 38ug/L and that 70% of the women were below 50ug/L. 7% of the women had a goitre. The same study found that breast milk samples contained low levels of iodine.<sup>7</sup>

Multiple other studies since the early 1990s support these findings and suggest that iodine deficiency is prevalent in children, men and women in New Zealand<sup>5</sup>. This conclusion is confirmed by the latest New Zealand Adult Nutrition Survey (08/09) results which concluded that:

“The New Zealand population aged 15 years and over is classified as mildly iodine deficient because the median urinary iodine concentration of 53µg/L falls within the range defined by the International Council for the Control of Iodine Deficiency Disorders as mild iodine deficiency (50–99µg/L).

This survey took place before the implementation of mandatory fortification of bread with iodised salt (to reduce the prevalence of iodine deficiency) in September 2009.”  
Access the survey report at: <http://www.moh.govt.nz/moh.nsf/indexmh/focus-on-nutrition-survey-2008-09>

Hence, the weight of all of the evidence has culminated in the current advice for supplementation:

**Healthy women are advised to choose foods that are important sources of iodine and to supplement their diet throughout pregnancy and breastfeeding with an iodine-only tablet. Foods that are good sources for iodine include: well cooked seafoods, milk, eggs, some cereals, seameal custard, fortified bread and iodised salt<sup>8</sup>. Since September 2009 commercial bread in New Zealand has been supplemented with iodine<sup>9</sup>.**

**The recommended supplementation is a registered 150 microgram (mcg) daily tablet available from 1 July 2010 at pharmacies and is fully subsidised on prescription.**

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# Campylobacter – Well done or unwell?

Watch the offal, it's not just the chicken!

Lower campylobacter infection rates over the last three years follow food industry and public health interventions aimed at cleaning up the supply of fresh chicken products to New Zealanders. Infection rates have dropped, and studies have demonstrated reduced carriage rates in raw poultry samples.<sup>1,2</sup>

The problem continues however in that we still have high rates compared with other developed countries, and campylobacter makes up a large majority of all the notifications of disease to Regional Public Health in the Wellington region. There is a considerable burden to society caused by this very unpleasant and potentially dangerous disease.

In a recent analysis of just over 200 cases of campylobacter in the Wellington region over three months, twenty-five cases were directly linked to high risk foods. Of these, twelve were linked to the usual suspect – chicken liver products. Thirteen more were linked to the consumption of lamb liver, aka lambs' fry.<sup>3</sup>

Raw sheep liver is a known source of campylobacter species and subsequent infection.<sup>4</sup> Other sources that have been linked to infections include contaminated water (such as from rooftop rainwater collection tanks), cross-contamination from utensils or boards that have been used to prepare contaminated foods, and contact with farm animals, especially during lambing or calving.<sup>3</sup> Poultry is most commonly associated with campylobacter infection but cooking appropriately or freezing reduces the risk of campylobacter transmission.

Monthly cases of campylobacter have historically varied from under 50 to over 300.<sup>5</sup> In 2006, the Ministry of Agriculture and Forestry (MAF) released a risk management strategy for reducing incidence of poultry-associated food borne campylobacteriosis which was followed by widespread voluntary measures being undertaken by the food industry.

869 cases were distributed across the territorial local authorities (TLAs) in our region for the one year period 20/09/2010 to 19/09/2011<sup>6</sup> as the following map shows:

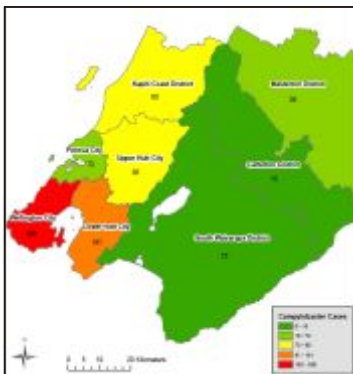


Figure 2. Campylobacteriosis cases by TLA in the Wellington Region (20/09/2010 - 19/09/2011)

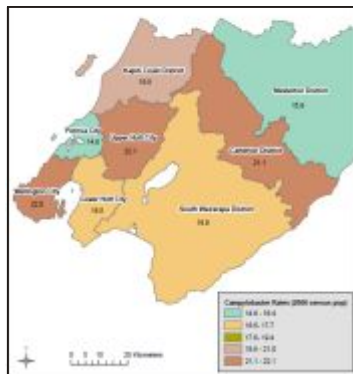


Figure 3. Rates of Campylobacter (per 10,000) by TLA in the Wellington Region (20/09/2010 - 19/09/2011)

The large numbers in Wellington City reflect the larger population with rates being similar across the region, varying from 14.8 cases per 10000 population in Porirua City to 22.1 case per 10000 population in Upper Hutt City.

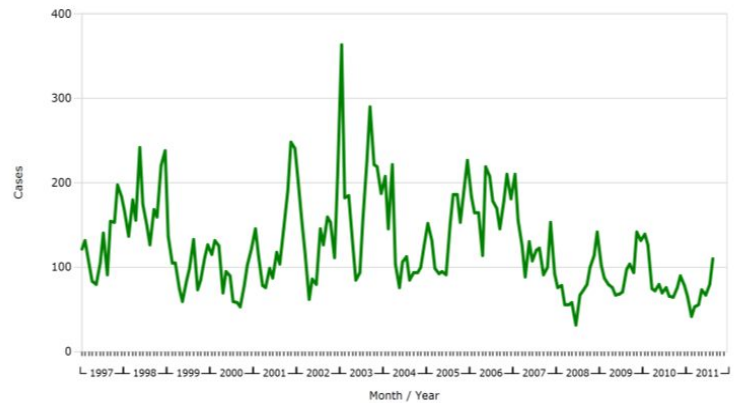


Figure 1. Campylobacteriosis cases by month since Jan 1997 for Hutt Valley, Capital and Coast and Wairarapa District Health Boards

## Regional Public Health and Local Councils watchful for linked cases

Patients presenting with campylobacter rarely pass the disease directly on to contacts. The main aims of Public Health interventions are to spot clusters of cases indicating a common source of infection, and to intervene to ensure safe food preparation and the disposal of contaminated food. The Environmental Health Officers from the Local Councils and Health Protection Officers from Regional Public Health jointly monitor for clusters and intervene at premises that become identified as high risk.

## Primary Care - Learning Moments for Patients

General Practitioners will request tests that identify many of the campylobacter cases notified each month. Faecal culture testing is not indicated for every case of diarrhoea, but is recommended if the diarrhoea is persistent or if the illness is severe.

In the interests of public health there are other indications for considering sending a faecal specimen early:

- High risk occupation – food worker or health care worker
- Multiple cases that might be linked
- Recent consumption of high risk foods identified in the history
- Recent overseas travel.

Primary care doctors and nurses are in a good position to briefly remind people of good food preparation practice and of at risk foods. When someone presents with a diarrhoeal illness they may be at an ideal 'learning moment'.

Patient information can be quickly printed out and given to the patient at their consultation from MAF Foodsmart and from the Ministry of Health including from the following links:

<https://www.health.govt.nz/resource/campylobacter>

<http://www.foodsmart.govt.nz/food-safety/tips/safety-at-home/>

## The bottom lines...

Our high rates of campylobacter infection, and the widespread prevalence of these bacteria in some uncooked foods mean that whatever else is done, one message is unlikely to change:

*Continued on next page*

New Zealand guidelines indicate that the registered subsidised 150ug daily iodine supplementation is not necessary to take prior to becoming pregnant. This contrasts with folic acid tablets which should be taken, where possible, for at least one month before conception through to the end of the first 12 weeks of pregnancy<sup>10</sup>. Both tablets are available from Pharmacies and are funded by PHARMAC.

There is no strong evidence to indicate how much iodine may be considered too much in pregnancy. The Endocrine Society advises that there is no benefit to taking more than twice the recommended daily intake of iodine and that therefore the upper limit of intake should be 500ug/day<sup>6</sup>. There is no risk of excessive iodine intake if healthy pregnant and breastfeeding women take the daily registered 150ug iodine tablet.

**Women with pre-existing thyroid disease may have different requirements and should be individually managed during pregnancy and may or may not be advised to take iodine supplements. An endocrinologist should be consulted if there is any uncertainty. Women who report high iodine intakes should have their iodine status assessed before taking iodine tablets in pregnancy.**

### The bigger picture

The addition of iodine tablets to the recommendations for care of pregnant and breastfeeding women is part of the bigger global picture of reducing the damage caused by iodine deficiency.

For a time it seemed that New Zealanders' low iodine status had been solved by the introduction of iodised salt and iodine containing sanitisers rising levels in milk. Now the evidence supports the Governments decision to:

1. mandatorily add iodised salt to commercially prepared bread, and
2. for healthy pregnant and breastfeeding women, to take the registered daily 150ug iodine tablet from confirmation of their pregnancy to discontinuation of their breastfeeding.

#### Sources:

1. NZ Ministry Of Health <http://www.moh.govt.nz/moh.nsf/indexmh/nutrition-iodine> accessed 5/9/11
2. Mann J, Aitken E. **The re-emergence of iodine deficiency in New Zealand?** <http://journal.nzma.org.nz/journal/116-1170/351/>
3. <http://www.who.int/nutrition/topics/idd/en/index.html>
4. Thomson CD, Colls AJ Conaglen JV, Macormack M, Stiles M, Mann J. Iodine status of New Zealand residents as assessed by urinary iodine excretion and thyroid. British Journal of Nutrition, 1997, 78 :901-912. <http://www.ncbi.nlm.nih.gov/pubmed/9497442>
5. **The prevalence and severity of of iodine deficiency in Australia including Appendix 1: Summary of current iodine status in New Zealand, as at October 2007 (PDF, 245 KB)**
6. Endocrine Society <http://www.endosociety.org/guidelines/final/upload/Clinical-Guideline-Management-of-Thyroid-Dysfunction-during-Pregnancy-Postpartum.pdf>
7. Skeaff SA, Ferguson EL, McKenzie JE, Valeix P, Gibson RS, Thomson CD. Are breast-fed infants and toddlers in New Zealand at risk of iodine deficiency?. Nutrition, 2005, 21 :325-331.
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9. NZ Food Safety Authority: <http://www.foodsmart.govt.nz/whats-in-our-food/chemicals-nutrients-additives-toxins/food-additives/iodine/> accessed 5/9/11
10. NZ Ministry Of Health <http://www.moh.govt.nz/moh.nsf/indexmh/pregnancy-supplement> accessed 5/9/11
11. Iodine crystal images; thank you to: <http://images-of-elements.com/iodine.php>

Risk foods such as raw chicken products need to be carefully prepared and thoroughly cooked to reduce the risk of infection.

Mammalian offal products such as lambs' fry are another risk food for campylobacter and also need to be prepared and cooked appropriately. Recent investigations by Regional Public Health have identified a lack of awareness among both food premises operators and the wider public regarding the risks of undercooked lamb's liver, which are similar to chicken liver.

There are ongoing efforts by MAF Food, the food industry and academic researchers to try to identify how to further reduce campylobacter case rates. Experts advise that poultry products remain the dominant source of campylobacter infections in New Zealand and that efforts need to continue to reduce infections from this source<sup>6</sup>.

#### Sources:

1. MAF 3/6/2011 - Campylobacter spp. in uncooked retail chicken meats. Scientific interpretive summary.
2. Sears A, Baker MG, Wilson N, Marshall J, Muellner P, Campbell DM, et al. Marked campylobacteriosis decline after interventions aimed at poultry, New Zealand. Emerg Infect Dis [serial on the Internet]. 2011 Jun [date cited]. <http://dx.doi.org/10.3201/eid1706.101272>
3. Regional Public Health data analysis (unpublished)
4. A.J. Corneliusa, C. Nicolb and J.A. Hudson International Journal of Food Microbiology Volume 99, Issue 1, 1 March 2005, Pages 99-105 doi:10.1016/j.ijfoodmicro.2004.07.016 Campylobacter spp. in New Zealand raw sheep liver and human campylobacteriosis cases
5. ESR Episurv database of Notifiable diseases accessed 19/9/2011
6. Baker MG, Sears A, Wilson N, French N, Marshall J, Muellner P, Campbell D, van der Logt P, Lake R. Keep the focus on contaminated poultry to further curtail New Zealand's campylobacteriosis epidemic. NZMJ 8 July 2011, Vol 124 No 1338; ISSN 1175 8716. URL: <http://www.nzma.org.nz/journal/124-1338/4772/>

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