



December 2016

## Mission Statement

Kia whakareia te ōranga o  
ngā tāngata o Aotearoa ma  
te whakamana i ngā wawātā  
hei tohu kai hauora, kai  
reka, hei oranga kakama.

To enhance the quality of life of  
New Zealanders by encouraging  
informed, healthy and  
enjoyable food choices, as  
part of an active lifestyle.

### 1 - 2

CEO Update

### 3

Just Cook Challenge  
2016 Overall Winners

### 4 - 6

What role does food play in  
reducing inflammation?

### 7

"And you must invite  
the vicar for lunch"

### 8 - 9

Tika Tunu or  
JUST COOK

### 10 - 11

Corporate Member Update

Fonterra Milk for Schools  
is Changing Kids' Milk  
Drinking Habits

### 12

What's on

## NZ Nutrition Foundation

PO Box 331 366  
Takapuna, Auckland 0740

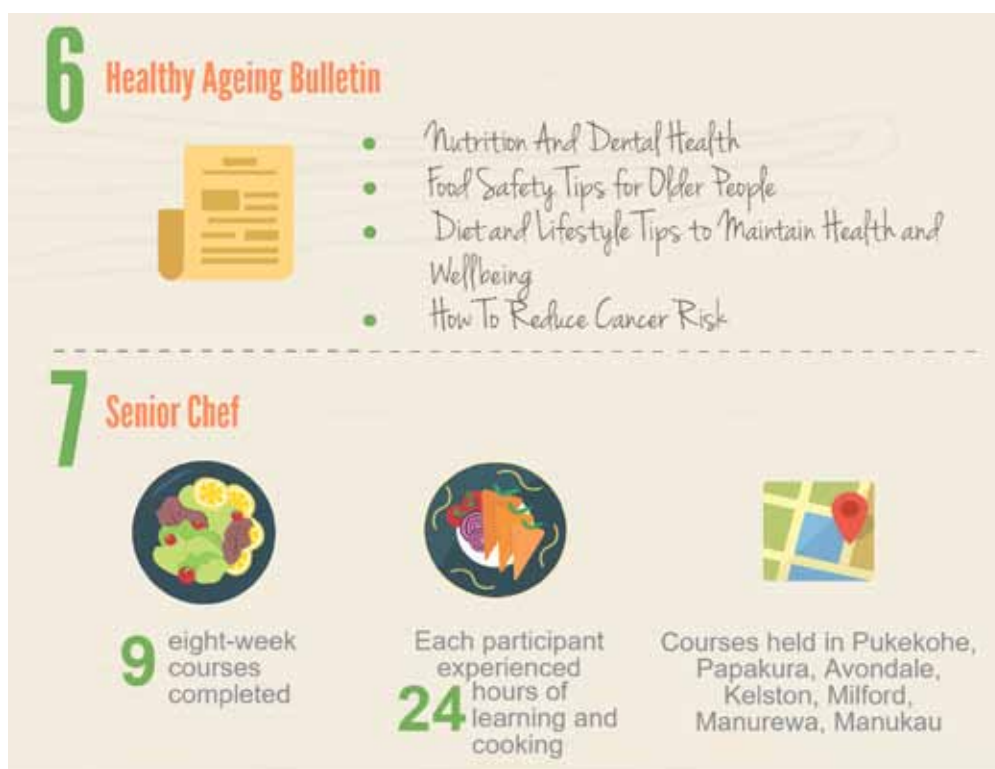
Phone: 09 - 489 3417

Fax: 09 - 489 3174

Email: [sarah@nutritionfoundation.org.nz](mailto:sarah@nutritionfoundation.org.nz)

[www.nutritionfoundation.org.nz](http://www.nutritionfoundation.org.nz)





In preparing this newsletter we have had a chance to look back over the year and consider how far we have come. Andrea, Anna, Jane and I are extremely proud of what we have been able to achieve on a very slim budget and excited about the plans we have in place to ensure our continued success and relevance.

The pictogram on the front cover and above gives you an idea of the scope of our activities. More and more we are focusing on the development of cooking skills as the best way we can help improve the food environment and encourage health and wellness.

We feel very privileged to have the opportunity to extend JUST COOK into Wiri Women's prison. We will evaluate this pilot programme early in 2017.

Communication has been a focus. Our website continues to grow indicating there is a real need for easily understood, evidence based food and nutrition information. We recognise the website looks and feels outdated and we have plans to update it as soon as funds are available. Other communication channels used include Facebook, Instagram and traditional TV and radio media. We have plans to develop a YouTube Channel, also when funding becomes available.

This year we have delivered the Senior Chef programme, a healthy ageing programme from Canterbury District Health Board, in Auckland and investigated a sustainable funding model to continue delivering Senior Chef. With the support of the Ministry of Social Development, we looked at different options and it became clear that without full control of the programme, sustainable on-going funding would be impossible. After discussions with potential funders we have decided to develop

our own healthy ageing programme with a focus on how and what to eat.

We have also enjoyed the many projects, large and small, we have undertaken to support our corporate members. The companies we have been dealing with feel keenly the responsibility of the part they play in determining the quality and healthfulness of the food we eat every day. While there is of course always room to improve the food supply, many companies we work with are working diligently to make meaningful changes. Recently we were delighted to welcome Sealord, vegetables.co.nz and Potatoes NZ Inc. as new members. Seafood, vegetables and potatoes are much loved staples of the kiwi diet and we look forward to working with these three companies in the future.

All our plans require money and we are very grateful to have the support of our growing corporate membership base and assistance from grant funding agencies. However, like many charities, we live hand to mouth and run a very lean operation. We don't necessarily see our lack of money as a huge disadvantage, we believe it drives us to be innovative and highly responsive. In 2017, we will seek more sustainable funding through programme development and tenders.

As we come to the end of the year we would like to thank our Chairman, Tania Watson, for her unstinting support and also Rosemarie and Julie at Business Professional Service Ltd who have taken over our administration load with scary efficiency leaving us free to do the work we love.

*We would like to wish you all a  
Happy Christmas and a relaxing  
summer.*

**Sarah Hanrahan  
Acting CEO**



# JUST COOK CHALLENGE

## 2016 OVERALL WINNERS

The overall winners of the Just Cook Challenge, Brooke and Olivia Moore got to spend a day with NZ Chef Martin Bosley on a food tour in Wellington. Here, Brooke and Olivia shared with us their day in Wellington:

"Winning this day out was such an amazing prize. We learnt so much, and the whole experience was fantastic. First we drove to the Wellington Chocolate Factory and learned how their high-quality, extremely gorgeous chocolate is made. We tried some of the chocolates and thought about the differences in flavour due to the countries the cacao came from, and tried some raw cacao beans, which are now one of my favourite foods! They are delicious! Then Martin kindly bought us a chocolate bar each, which were both equally delicious. We then continued on our food journey to Moore Wilsons and ate an almond croissant, with a lovely hot chocolate, while looking around at the expansive range of ingredients and everything to do with kitchens. My dream come true.

Next stop was Mojo coffee, where we watched the process of coffee roasting and tried some of the beans. We also received a bag of coffee and a tin each! Last of all, we arrived at Poneke Coffee and ordered some treats from their patisserie cabinet. Yum!

Overall, we really enjoyed ourselves. Martin was very welcoming and was interested in our different styles of cooking (Olivia - raw and vegan cooking, me - molecular gastronomy and basically every other genre of cooking!)"



# WHAT ROLE DOES FOOD PLAY IN

# REDUCING INFLAMMATION?

By Sheena Hendon  
(Bsc. Hons (Nutrition & Dietetics))

**Inflammation can be a good thing. It is a natural process that helps your body heal and defend itself from harm. However, chronic inflammation is also one of the root causes of many diseases. It may drive obesity, type 2 diabetes, heart disease, and depression and contribute to all sorts of serious health problems from osteoarthritis and rheumatoid arthritis to some cancers. In this article, we introduce the science and research behind the role of nutrition in the cause, prevention and treatment of inflammatory disease.**

Everyone has experienced the remarkable phenomenon of **acute** inflammation – a sprained ankle, splinter, or cut – and as a result have witnessed the affected area turn red, puffy and hot as your immune system rushes to your aid to assess the injury and fight any pathogen that might have entered your body.

A normal, healthy inflammatory response should flare up and die down again a short time later, as the healing process resolves the inflammation, the injury heals and homeostasis returns. Pain and inflammation should not be long term; they should go away – but sometimes inflammation runs wild, becomes **chronic** and last for a long time. Constant inflammation may damage tissue, affect organ function and lead to a dysregulated immune system and serious health conditions.

## THE INFLAMMATION PROCESS IN BRIEF

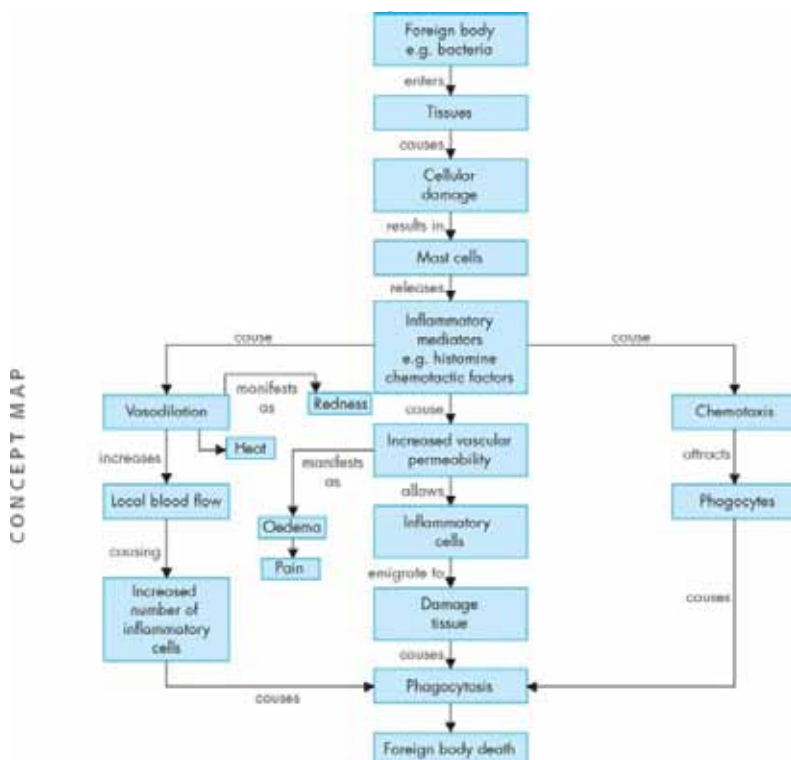


Figure 1: Craft, J. (2015). Understanding pathophysiology.

Say you cut a finger, then bacteria, enters the body and causes tissue and cellular damage. This foreign body triggers mast cells to release inflammatory mediators such as histamine and cytokines leading to the classic signs of inflammation – redness, heat, swelling and pain.

Next, the release of these mediators triggers inflammatory cells, such as white blood cells neutrophils and lymphocytes, to move to the injury, release other substances and start the immune response.

As inflammation continues, cells called macrophages remove damaged cells or tissue and if the injury is eliminated the next phase is tissue repair.

## Resolution is the solution.

The death of neutrophils is the hallmark of the move to the resolution phase of inflammation. Resolution is triggered when neutrophils and macrophages secrete chemical messengers known as specialised pro-resolving mediators (SPMs). These SPMs are derived from polyunsaturated fatty acids (PUFA's), including the essential omega-3 and -6 fatty acids. One group of SPM's, lipoxins, is derived from Omega -6 arachidonic acid, while the SPM groups, resolvins, protectins and maresins, from Omega -3 EPA or DHA.

The interesting thing is that evidence suggests people eating a Westernised diet are getting adequate arachidonic acid for lipoxin synthesis but insufficient intake EPA/DHA for resolvins, protectin and maresins synthesis. Hence omega-3 fatty acids such as those found in oily fish are vital to resolving inflammation.

## WHAT DRIVES INFLAMMATION?

Certain lifestyle factors can promote inflammation, especially when they occur on a regular basis, such as:

- **Obesity leading to metabolic syndrome**
- **Unrepaired tissue damage** including periodontal disease.
- **Oxidative stress** from smoking, medications, food additives, physical and emotional stress including sleep disorders.
- **Persistent pathogens**
- **Persistent allergens**
- **Gut dysbiosis** or microbial overgrowth.
- **Essential fatty acid deficiency**
- **Low sex hormones**
- **Age**
- **Genetics**
- **Poor diet**



These drivers lead to five key biochemical inducers of inflammation including

- **Mitochondria dysfunction** due to environmental toxins, ageing and by-products of free radical damage.
- **Advanced glycation end products (AGEs)** where excess sugars in the blood stream, come in to contact with proteins and lipids, to form AGEs.
- **Uric acid excess.** Most often due to obesity, purine-rich foods, diabetes, alcohol and diuretics.
- **Oxidised lipoproteins**, which may contribute to atherosclerotic plaques. This occurs due to poor diet and lifestyle factors.
- **High homocysteine levels** caused by poor diet and lifestyle factors.



### HOW CAN WE REDUCE INFLAMMATION THROUGH DIET?

Research has shown us that there are four key areas of nutrition that greatly influence inflammation;

1. **Reducing calories.** Fat around the abdomen is biologically active and increases proinflammatory cytokines, cholesterol and triglycerides, and unregulated glucose.
2. **Increased Omega 6 and reducing Omega 3 essential fatty acids.** Increasing Omega 3 consumption inhibits the production of proinflammatory cytokines and acts as a precursor of the SPM groups, resolvins, protectins and maresins, needed to trigger inflammation resolution.

### A Perfect Storm - The Five Low Pressure Systems

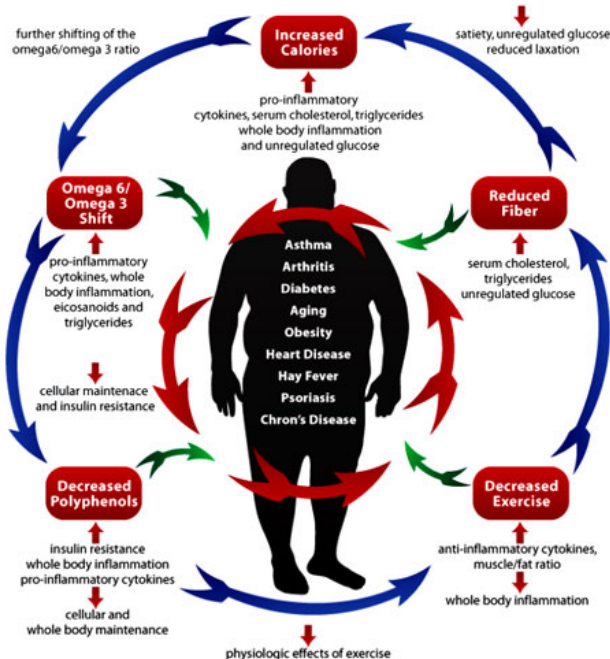


Figure 2 Genesmart.  
Causes of inflammation

3. **Increasing polyphenol-rich foods.** Fruits, vegetables, grains, spices and herbs are the richest source of dietary polyphenols. They act as both antioxidants and anti-inflammatories and as such interact and neutralise reactive oxygen species (ROS) in the cell, downregulate the expression of proinflammatory markers, and boost beneficial gut bacteria.
4. **A high fibre diet.** Dietary fibre that has prebiotic activity supports healthy gut bacteria, contributes to a healthy immune response and reduces inflammation. Fibre also ensures food passes more quickly through the gut and reduces gut irritation.

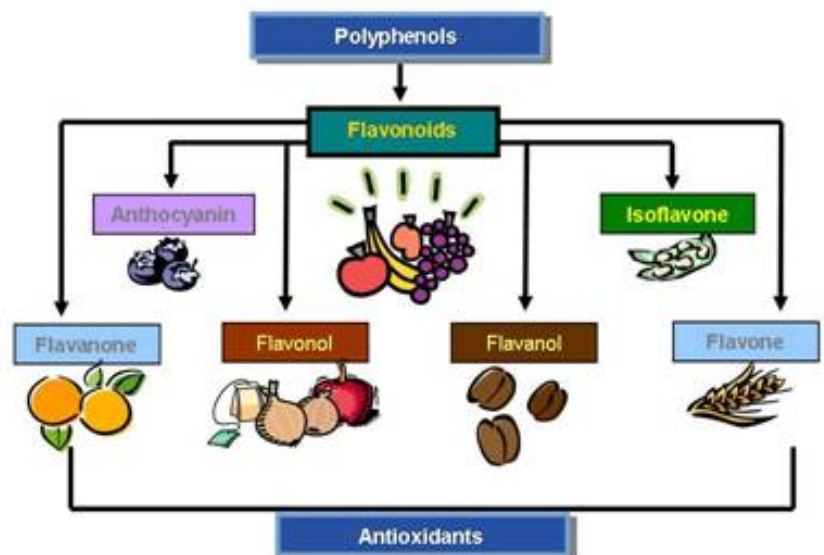


Figure 3 Fitness Guru. Polyphenols benefits

### THE MEDITERRANEAN DIET AND INFLAMMATION

Research findings indicate that eating a diet focused on anti-inflammatory principles such as **The Mediterranean Diet**, not only helps protect against certain diseases, but also slows the ageing process by stabilising blood sugar and increasing metabolism.

Traditional diet in olive-growing areas of Crete, Greece and southern Italy in the late 1950s and early 1960s showed positive effects on inflammation and disease such as CVD.

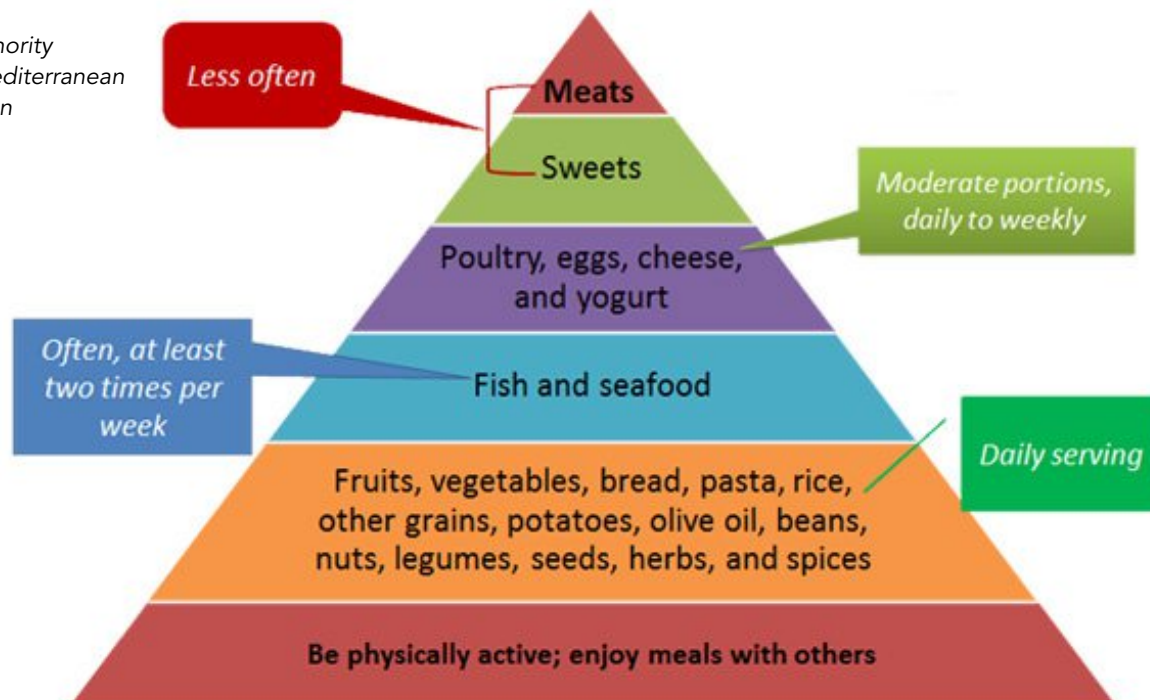
Major characteristics are;

- (a) high consumption of non-refined grains, legumes, nuts, fruits and vegetables (lots of colours);
- (b) relatively high-fat consumption (even greater than 40% of total energy intake) mostly from monounsaturated fatty acids (MUFA), which accounts for 20% or more of the total energy intake;
- (c) olive oil as the principal source of fat;
- (d) moderate to high consumption of fish;
- (e) low to moderate consumption of poultry and dairy products (usually as yoghurt or cheese);
- (f) low consumption of red meats, processed meats or meat products; and
- (g) moderate alcohol intake, usually in the form of red wine consumed with meals.

continued on page 6

## WHAT ROLE DOES FOOD PLAY IN REDUCING INFLAMMATION?

Figure 4 Authority Nutrition. Mediterranean diet meal plan



### IN SUMMARY

Although this article has only touched the surface on the role diet and nutrition play in the cause, prevention and treatment of inflammatory diseases, it is clear that;

- Diet and exercise are major determinants of disease susceptibility and ageing.
- A healthy diet avoids genetic predispositions to disease and a 'bad' diet displays those genetic defects.
- Many diseases are initiated and exacerbated by diet-based inflammation and may be ameliorated by appropriate diet, alongside other lifestyle changes such as stress management, reduction in alcohol, smoking and regular physical activity.

**Sheena Hendon (Nutritionist, Naturopath, Health and nutrition writer)**  
**E: sheena@sheenahendonhealth.co.nz**  
**W: sheenahendonhealth.co.nz**

### SOURCES

- Benaroyo L. How do we define inflammation? *Schweiz Rundsch Med Prax.* 1994; 83:1343-1347
- Chun OK, Chung SJ, Claycombe KJ, et al. Serum C-reactive protein concentrations are inversely associated with dietary flavonoid intake in U.S. adults. *J Nutr.* 2008 Apr;138(4):753-60.
- Craft, J. (2015). *Understanding pathophysiology.* Chatswood, N.S.W.: Mosby/Elsevier.
- Estruch, Ramon. "Anti-inflammatory effects of the Mediterranean diet: the experience of the PREDIMED study." *Proceedings of the Nutrition Society* 69, no. 03 (2010): 333-340.
- Fargnoli, Jessica, Yoon Kim, and Christos S. Mantzoros. "Mediterranean diet in disease prevention: current perspectives." *Nutrition and Metabolism.* Humana Press, 2009. 263-278.
- Fitness Guru. (2016). Polyphenols & its benefits. Retrieved from <http://www.gurufitnessplanet.com/2012/12/article-131-polyphenols-its-benefits.html>
- Gallin JI, Snyderman R. Overview. In: Gallin JI, Snyderman R, eds. *Inflammation: basic principles and clinical correlates*, 3rd ed. Philadelphia: Lippincott Williams & Wilkins, 1999:1-4.

Genesmart, (2016) Causes of inflammation. A Perfect Storm of Five Low-Pressure Systems. Retrieved from <http://www.genesmart.com/100068/causes-of-inflammation/>

Giugliano, D., Ceriello, A., & Esposito, K. (2006). The effects of diet on inflammation: emphasis on the metabolic syndrome. *Journal of the American College of Cardiology*, 48(4), 677-685.

Ortega-Gomez A, et al. Resolution of inflammation: an integrated view. *EMBO Mol Med* 2013; 5:661-674

Medzhitov R. Inflammation 2010: new adventures of an old flame. *Cell.* 2010; 140(6):771-6 15. Ortega-Gomez A, et al. Resolution of inflammation: an integrated view. *EMBO Mol Med* 2013;5:661-674. 16.

Medzhitov R. Origin and physiological roles of inflammation. *Nature* 2008; 454(7203):428-35. Bures, J., Cyrany, J., Kohoutova, D., Förstl, M., Rejchrt, S., Kvetina, J., ... Kopacova, M. (2010). Small intestinal bacterial overgrowth syndrome. *World Journal of Gastroenterology* : WJG, 16(24), 2978-2990. <http://doi.org/10.3748/wjg.v16.i24.2978>

Ortega-Gómez, A., Perretti, M., & Soehnlein, O. (2013). Resolution of inflammation: an integrated view. *EMBO Molecular Medicine*, 5(5), 661-674. <http://doi.org/10.1002/emmm.201202382>

Rocha et Silva M. A brief survey of the history of inflammation. *Agents Actions.* 1978 Jan; 8(1-2):45-9. 2.

Roman B & Estruch R (2006) Scientific evidence of interventions using the Mediterranean diet: a systematic review. *Nutr Rev* 64, S27-S47.

Serhan, Charles N., et al. "Protectins and maresins: new pro-resolving families of mediators in acute inflammation and resolution bioactive metabolome." *Biochimica et Biophysica Acta (BBA)-Molecular and Cell Biology of Lipids* 1851.4 (2015): 397-413.

Serra-Majem L, Roman B & Estruch R (2006) Scientific evidence of interventions using the Mediterranean diet: a systematic review. *Nutr Rev* 64, S27-S47.

Trichopoulou A, Kouris-Blazos A, Wahlqvist ML et al. (1995) Diet and overall survival in elderly people. *BMJ* 311, 1457-1460. 4.

Zhang, Hua, and Rong Tsao. "Dietary polyphenols, oxidative stress and antioxidant and anti-inflammatory effects." *Current Opinion in Food Science* 8 (2016): 33-42.





## "And you must invite the vicar for lunch"



Jan Wallace, the vicar at St Andrew's Pukekohe knows her flock well. A busy life with her varied parish work, believes in health for all. She has only got time for solutions not the problems so Just Cook for Seniors fitted her needs perfectly. The programme is designed to motivate the reluctant cook, develop kitchen preparation skills, reduce food myths from popular thought to sound science and assist with new friendships. Having just finished the programme, here are some participant feedback comments:

*"I now have more colours on my plate  
(increase in vegetable consumption)"*

*"I have enjoyed the increased use of ingredients like coloured capsicum, spring onions, herbs (coriander), chilli, parsley and more dairy foods."*

*"I now have very little waste as I can plan to make something with the left over's"*

*"I can balance my foods over the day and use the food groups to work out a healthy meal"*

*"I can use the same ingredients with a fresh approach, make more homemade food like a good coleslaw rather than boiled cabbage."*

*"Fewer treats because they were causing me problems like bloating, less energy, uncontrollable emotions."*

The participants reflected Franklin's ethnic diversity - 3 English, 1 Italian, 1 French, 2 Filipinos and 4 New Zealanders. All keen to learn the kiwi way with "their" ingredients.

One commented they learnt about a new food group called legumes and understood the need to include a meat alternative meal in their weekly diet.

Our partnership with the Selwyn Foundation has grown over the past 2 months. Both Papakura and Pukekohe have been successfully completed.

**Glenda Litchfield**  
Senior Chef facilitator







# Tika Tunu or JUST COOK



**The New Zealand Nutrition Foundation has successfully completed a 6-week pilot Food and Nutrition programme for Wahine at Wiri Women's Prison.**

The Foundation's entry-level programme was designed to build financial and food literacy skills and provide Wahine with a potential pathway towards employment in the catering and hospitality industry. Funding for the pilot came from SKYCITY Auckland Community Trust. Many of the 12 Wahine selected were mothers and all but 1 were either Maori or Cook Island Maori.

The 6 week programme included a combination of practical and theory-based experiences which aimed to improve skills, motivation and confidence to cook; improve knowledge of healthy food choices as well as teach the Wahine how to cook meals on a restricted budget. Practical skills covered included knife skills, food safety principles and extending meals using cheaper plant based protein foods. Each three hour session was planned around a theme.

Teaching resources were gathered from multiple sources and our thanks goes out to Healthy Food Guide, Heart Foundation, Nestle, The Christchurch District Health Board Senior Chef Programme, Diabetes Project Trust, Diabetes Foundation for making their resources available for the pilot.

**When asked at the beginning of the programme why the Wahine were keen to attend Tika Tunu the following responses were collected:**

*" want to cook healthier meals for myself, my family and friends"*

*" learn cheaper and healthier ways to cook for my family"*

*" experience to further myself when I get released, help with a job"*

*" learn about portion control and cooking on a budget"*



*" healthy foods, healthy eating , eating on a budget.  
Team work, communication skills"*

*" more recipes, nutrition information, cooking  
techniques, healthy portion control"*

*" new and easy things to cook and how to cook  
healthy food on a budget"*

**When asked for mid-course feedback about the  
course the following responses were collected:**

*"I enjoy this programme a lot. I learn a lot about  
cooking healthy, trying new food and for less"*

*"I am fully enjoying this program. I recommend this  
program be done again for other prisoners"*

*"My fellow friends want to do this programme"*

*"Will also share [information, recipes, and skills] with  
family when released"*

*"I have lent my books out to other ladies in the prison.  
And they have enjoyed them"*

**When asked if any diet or physical activity changes  
had been made since starting the programme the  
following responses were made:**

*" my diet has changed. I tend to eat more vege now"*

*" I now drink water on its own and a lot of it"*

*" I am eating and buying less junk sugary food"*

*" I have cut down on sugar"*

The formal evaluation is yet to be completed.





## FONTERRA MILK FOR SCHOOLS IS CHANGING KIDS' MILK DRINKING HABITS

New research by the University of Auckland shows more kiwi kids are meeting recommended daily dairy consumption guidelines since the introduction of the Fonterra Milk for Schools programme with a 17 per cent relative improvement<sup>1</sup>.

The findings of the research were announced by the study investigator Associate Professor Clare Wall, at a recent event attended by Deputy Labour Leader and Health Spokesperson Hon Annette King, Olympian Eliza McCartney, Dr Pamela von Hurst as well as other experts from the fields of education and nutrition.



### BACKGROUND: CHILDREN'S MILK INTAKES IN NEW ZEALAND

New Zealand Food and Nutrition Guidelines recommend primary school children consume at least 2-3 serves of milk and milk products a day<sup>2</sup>. However, results from the National Survey of Children and Young People's Physical Activity and Dietary Behaviours<sup>3</sup> showed that fewer than a third of children aged 5-9 years in New Zealand consumed plain milk seven or more times a week, at an age when their bones may benefit most from healthy beverage choices and adequate calcium intake. Furthermore, milk intake tended to decline as the children aged, with a concurrent increase in consumption of fizzy or soft drinks.

### EVALUATION OF FONTERRA MILK FOR SCHOOLS

In 2013, during the national rollout of Fonterra Milk for Schools, The University of Auckland commenced a study funded by Fonterra. A representative sample of 511 children aged 7-9 years were enrolled in a prospective longitudinal study to assess changes in their milk and milk product consumption patterns, general health indicators and attitudes to nutrition over a two year period.

Parents of children taking part in the evaluation were also invited to complete a survey.

### STUDY FINDINGS

After two years, the conclusions were very positive:

- There was a significant increase in the proportion of children achieving the dietary guidelines for dairy consumption every day – from 72 to 84 per cent.
- 93 per cent of children were achieving the dietary guidelines on weekdays.
- Milk consumption on the weekends was also positively influenced with a higher proportion of children achieving dietary guidelines when away from school.
- 96 per cent of the children liked the taste of the milk.
- 72 per cent of parents surveyed considered the programme to have a positive impact on their child's health.





The children's anthropometric measures increased significantly from baseline over the two year period - as is expected in growing children - although no significant changes in body mass index (BMI) z scores (adjusted for age) were observed overall.

While milk consumption typically decreases as children age, the findings of Fonterra Milk for Schools evaluation suggest the programme is having a positive influence on children's choice of beverages beyond the school gate. Furthermore, the introduction of additional milk to the children's diets has not had a negative effect on their BMI.

Associate Professor Wall recognises the importance of dairy as part of a healthy diet for children. "It is good to see through Fonterra Milk for Schools these children are enjoying having dairy regularly at an age where they are forming habits that can last them a lifetime," she said.

Since the programme began, Fonterra Milk for Schools has delivered more than 70 million individual packs of milk throughout the country, including the Chatham, Stewart, Matakana and Great Barrier Islands.

## REFERENCES

1. Wall C (2016). *Milk for Schools Programme – 2-Year Final Follow-Up*. [Unpublished – submitted for publication]
2. Ministry of Health (2012). *Food and Nutrition Guidelines for Healthy Children and Young People (Aged 2-18 Years): a Background Paper*. Wellington: Ministry of Health.
3. Clinical Trials Research Unit. *Synovate. A National Survey of Children and Young People's Physical Activity and Dietary Behaviours in New Zealand: 2008/09 - Key Findings*.: Ministry of Health, Wellington; 2010.



# WHAT'S ON 2017

## FEBRUARY 2017

### 19th International Conference on Behavioural Nutrition and Physical Activity

**Date:** February 2-3, 2017

**Venue:** Hotel Grand Chancellor  
Melbourne, Australia

[https://www.waset.org/  
conference/2017/02/melbourne/](https://www.waset.org/conference/2017/02/melbourne/)  
ICBNPA

## APRIL 2017

### 15th World Congress on Public Health 2017

**Date:** April 3 – 7, 2017

**Venue:** Melbourne, Australia  
<http://www.wcph2017.com/>

## MAY 2017

### Dietitians Association of Australia Conference 2017

**Date:** May 18-20, 2017

**Venue:** Hobart, Australia  
<http://daa2017.com.au/>

If you attend any of these and would like to write a review for one of our newsletters please contact us at [info@nutritionfoundation.org.nz](mailto:info@nutritionfoundation.org.nz)



Copyright. The material in this Newsletter is protected by copyright. However, unless otherwise specified, all material is available for copying or reprinting provided that;

1. Clear acknowledgement is made to the author, if named, and the source of the material (i.e. the NZ Nutrition Foundation Newsletter).

2. Quotations are verbatim and not presented out of context to support a contrary argument.

It would be appreciated if a copy of such reprinted material could be sent to the Foundation when published.

**The views expressed in *Nutrition News* are those of the authors and do not necessarily reflect those of the New Zealand Nutrition Foundation**