

# in a **Heartbeat...**



RECIPE

## Issue 16

- From the Director's Desk
- Male hormones fight heart disease
- Ralph Reader Prize
- Research Highlights
- Heart Food Recipe
- Guy Leech's Fitness Forum
- Meet the Team

## From the Director's Desk

Welcome to the latest edition of *In a Heartbeat*.

In this issue we invite you to take the time to learn about some of our recent breakthroughs – the critically important research that you're helping to make happen. In particular, see how male hormones such as testosterone could play a key role in the renewal and regeneration of the cardiovascular system! Then read how one of our valued researchers has just been awarded the highly respected **Ralph Reader Prize**.

Meet Heart Research Institute team member Dr Sally Tandy and Seven-time World Surfing Champion **Layne Beachley** drops in to speak with **Guy Leech**. As always, there's a delicious new recipe from *Heart Food – the Healthy Heart Cookbook* too.

Enjoy your newsletter... and thank you again for your wonderful support.



## Male hormones may protect against heart disease

The phenomenon of men developing cardiovascular disease at a younger age and to a greater extent than women has long been attributed to the power of the female hormone estrogen. But **a new study suggests a reduction in male hormones as men age may be the culprit.**

Collectively known as "androgens", male hormones such as testosterone are known to contribute to the renewal of muscle and bone... but their role in the renewal and regeneration of the cardiovascular system has not previously been well known. A team of researchers at The Heart Research Institute led by Dr Martin Ng has shown for the first time that male androgens play an important role in new blood vessel formation (termed "angiogenesis"), a reparative process critical for recovery after events such as heart attacks.

Experiments showed that androgens stimulated new blood vessel formation in males but not females – a strikingly sex-specific effect – and suggested that androgen treatment may dramatically hasten recovery from heart attack and stroke.

Dr Ng said: "As there is a steady decline in male androgen levels, our findings have implications for the role of androgen replacement in older men". This may ultimately lead to supplemental hormone therapy for men as a way of warding off heart disease in old age. The findings were published in the online version of the *Journal of Experimental Medicine* on January 13th 2010.

Reference: Daniel P. Sieveking, Patrick Lim, Renée W.Y. Chow, Louise L. Dunn, Shisan Bao, Kristine C.Y. McGrath, Alison K. Heather, David J. Handelsman, David S. Celmaj, and Martin K.C. Ng. A sex-specific role for androgens in angiogenesis. *Journal of Experimental Medicine*, 2010; DOI: 10.1084/jem.20091924

Through her research, Joanne has discovered a new role for a protein already known to assist in the processing of cholesterol. The protein has shown anti-inflammatory and antioxidant properties that may act as part of a cell's defence mechanism. Joanne is hopeful that data from this study will contribute to the development of novel treatments for preventing both atherosclerosis and its clinical consequences.

For more information on Joanne's project visit [www.hri.org.au](http://www.hri.org.au)

## Chicken and Leek Pie

### Ingredients

- 1 tablespoon vegetable oil
- 2 x 135g leeks, finely sliced
- 3 large cloves garlic, chopped
- 2 small carrots, diced
- 400g chicken breast fillet, trimmed and cut into cubes
- 1 cup (250ml) salt-reduced chicken stock
- 4 medium potatoes, peeled and diced
- 1 tablespoon salt-reduced margarine spread
- 2 tablespoons skim milk
- 2 tablespoons finely chopped dill
- 50g piece parmesan cheese, grated
- 420g can corn kernels, no added salt, drained
- 1½ tablespoons maize corn flour, blended with 1 tablespoon water
- 2 cups baby rocket leaves
- 4 medium Roma tomatoes, quartered
- Freshly ground black pepper

Serves 4 –  
each serving  
contains 6 serves  
of vegetables

Per serve:  
2270 kilojoules  
(541 calories)  
37g protein  
20g total fat  
(6g saturated fat)  
Medium GI  
53g total carbohydrate  
(3½ exchanges)  
12g fibre  
643mg sodium

### Directions

1. Heat oil in a large saucepan over low heat. Add leeks and garlic and cook, stirring frequently until soft, without letting vegetables colour (about 3-5 minutes)
2. Add carrot and cook for another minute. Add chicken and stock, cover and cook, stirring occasionally for 15 minutes or until chicken is done.
3. Pre-heat oven to moderate hot 200°C (400°F)
4. Place potatoes in a saucepan and cover with cold water. Bring to boil on medium heat and cook for 10 minutes until soft. Drain then mash potatoes until smooth. Add margarine and milk, 1 table-spoon each of dill and parmesan cheese and mix well. Keep warm.
5. Stir 1 cup of corn kernels into the chicken and blended cornflour. Stir until thickened for about 3 minutes, then stir in remaining dill.
6. Place chicken in a 7-cup (1½ litre) capacity ovenproof dish. Spoon over the mashed potato to cover chicken and top with remaining parmesan cheese. Bake for 15 minutes or until the chicken is bubbling and the cheese is pale golden.
7. To make the salad: Mix together rocket, remaining corn kernels and tomato. Grind over pepper to taste. Serve pie with salad.



*Philip Barter*

Professor Philip Barter  
MBBS, PhD, FRACP  
Director  
The Heart Research Institute

### Dr Joanne Tan wins Ralph Reader Prize



Dr Joanne Tan, a Postdoctoral Scientist in the Gene Regulation Group, has been awarded the Ralph Reader Prize for Basic Science at a recent meeting of the Cardiac Society of Australia and New Zealand (CSANZ). Joanne's award-winning research explored the potential role of a newly-identified protein that may have a cell defence mechanism against the pathological progression of heart disease.

At the early stages of atherosclerosis (the accumulation of fats within arteries that leads to heart disease), cells that are within arteries known as endothelial cells, experience an increase in inflammation. This inflammation, together with stress and oxidative responses at a cellular level, is a major contributor to the progression of heart disease.

become a  
**Hero**  
OF THE HEART

Get fit and be active while helping The Heart Research Institute at the same time! Choose HRI as the beneficiary of your next Marathon or Family Fun Run. To register your team and for details in each state go to [www.herooftheheart.com.au](http://www.herooftheheart.com.au). Registrations are now open for:

**Iron Man Australia  
Triathlon**

Sunday 28 Mar 2010

**Canberra  
Marathon**

Sat/Sun 10-11 April 2010

**Sydney Morning Herald  
Half Marathon**

Sunday 16 May 2010



Organisers to confirm

### HEALTH BEAT

- **Leeks** are part of the allium family that contain phytochemicals thought to lower blood pressure plus nutrients such as Vitamin C and Folate as well as fibre.
- **Corn** is not a vegetable but a wholegrain.

Surfing **Layne Beachley**  
Champ **DROPS IN**

Guy interviews long time friend and Seven-time World Surfing Champion, Layne Beachley

Guy **Leech's**

## Fitness Forum



**GL: Hi Layne... tell me, has your fitness regimen changed much since you retired as a professional surfer?**

LB: My training regimen went from four sessions a week of boxing, cycling, swimming, sand sprints, weights and yoga, to a much lighter program that now involves sand running, body weight exercises, yoga and of course, surfing.

**GL: Has the motivation to continue to exercise remained with you?**

LB: I must admit, once I retired, the motivation to train subsided considerably. I no longer felt the pressure to have to perform. My main source of motivation these days is vanity! Even though I'm no longer a pro., my uniform is still a bikini and I pride myself on looking and feeling good in my uniform.

**GL: Do you have any 'leftover' injuries from your career that stop you from doing certain things now?**

LB: I continue to explore different treatments for the injuries I suffered during my career. Consistency is the key. By staying on top of these injuries and listening to my body, I've been able to remain reasonably pain-free.

**GL: Do you have any 'food vices' that show us you're human?**

LB: Hot chips are my biggest weakness... I love them!

**GL: After having done it for a living for so long, can you still surf for fun?**

LB: Absolutely! Surfing has always been fun for me. These days I'm re-learning to surf primarily for the fun of it, without judging or criticising myself. That's been a challenge after competing and being judged for 20 years. But the greatest feeling is knowing that I don't have to go surfing if I don't feel like it – there's no more guilt! The conditions now dictate my level of enthusiasm.

**GL: Tell us the secret to staying motivated**

LB: Passion, pride, enthusiasm and participating in a variety of activities. Doing the same thing all the time is boring... and being a Gemini, I'm always looking for variety. It's the spice of life!

**GL: Thanks Layne.**

– Leechy



Guy **Leech**

# Research Highlights



## Egg yolk extract could have cardiovascular health benefits

Innovative work in our laboratory has shown that adding phospholipids (PLs) from different sources to the diet can have significant hepatic and cardiovascular health benefits.

A project currently underway is investigating the feasibility of preparing PL from the yolk of chicken eggs. This highly innovative work will test whether this extract has biological activity and will establish for the first time whether: (a) bioactive PLs can be isolated from egg yolk and (b) if so, can provide proof-of-principle that PL-rich egg yolk extract has the potential to be developed as a cardiovascular nutraceutical.

### The Benefits

At the scientific level our work will provide novel insights into the best way to isolate egg yolk PL. At the healthcare level, PLREYE has the potential to promote healthy aging... and at the commercial level, the establishment of a new, high-value, poultry-based nutraceutical will be of financial benefit to Australian poultry farmers and egg producers.

## Role of oxidation in smoking-induced heart disease

Atherosclerosis is responsible for approximately 40% of all deaths in developed countries, a mortality rate exacerbated by smoking. Atherosclerosis is associated with a build up of white blood cells that generate oxidants. Blood from smokers contains high levels of thiocyanate, a chemical that is converted to an oxidant known as HOSCN. We propose that HOSCN damages enzymes that maintain cell health. Understanding the role of HOSCN will provide a framework for treatments designed to prevent atherosclerosis.

## PCSK9 inhibition and PCSK9 inhibitors

PCSK9 is the name of a protein that regulates the liver receptor responsible for removing LDL (bad cholesterol) from the circulation. There is currently little known about how this important protein is regulated. To understand if drugs that inhibit PCSK9 will reduce the risk of developing heart disease in patients who do not respond well to existing treatments, we are studying the molecular mechanisms that regulate the production and function of PCSK9.

You can now make sure that more money goes towards important research by receiving *In a Heartbeat* via e-mail. Just send your **Name** and **ID number** to [inaheartbeat@hri.org.au](mailto:inaheartbeat@hri.org.au) (include **subscribe** in the subject) and the next editions will arrive in your inbox.

**If you are interested in attending one of our 2010 FREE Director's Talk & Tour of The Heart Research Institute's new laboratories (including a light lunch) please call (02) 9241 4300 or e-mail [events@hri.org.au](mailto:events@hri.org.au)**

If you do not wish to receive further issues of *In a Heartbeat* from The Heart Research Institute, e-mail your name and address or ID Number to [inaheartbeat@hri.org.au](mailto:inaheartbeat@hri.org.au) or tick the box and fax this page to (02) 9241 6668. Please include your ID Number: \_\_\_\_\_



If you would like to receive a FREE copy of our booklet, *Executors Information Register*, please email [bequest@hri.org.au](mailto:bequest@hri.org.au)

*If you would like to continue your support well into the future via a bequest, please phone (02) 9241 4300 or e-mail [bequest@hri.org.au](mailto:bequest@hri.org.au) for your FREE bequest booklet.*

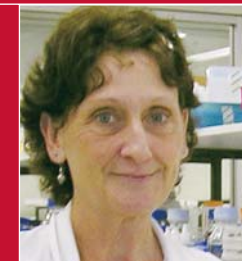
research UPDATE

## MEET the Team...

### Dr Sally Tandy

Senior Research Fellow of The Heart Research Institute, Nutrition and Metabolism Research Group

Dr Sally Tandy is a post-doctoral researcher devoting her career to discovering how food affects our health and in particular our hearts.



Sally's 'appetite' for nutrition was awakened while studying for her Bachelor of Science in Zoology and Physiology at the University of East Anglia in the UK. It was further fuelled by three years of PhD research into dietary iron metabolism. She moved to Sydney in 2002 shortly after being awarded her PhD for a thesis entitled: 'Characterisation of the iron uptake pathway in human Caco-2 cells.'

Sally joined The Heart Research Institute as one of the founding members of the Nutrition and Metabolism Group in early 2005. The Nutrition and Metabolism Group is particularly interested in studying food and food components that may have beneficial effects on our cardiovascular system as well as our entire wellbeing. One of the main interests of the group is studying the health benefits of dietary phospholipids (PLs) from different food sources.

Sally has recently been studying the healthy properties of krill oil (KO) supplementation. Krill are small marine crustaceans, rich in PLs as well as omega-3 fatty acids. Her research is producing some novel results that suggest dietary KO supplementation may have a therapeutic benefit in individuals with the metabolic syndrome (a combination of risk factors for the development of heart disease such as obesity, high blood pressure and cholesterol) or non-alcoholic fatty liver disease (fatty inflammation of the liver caused by overeating or lack of activity). The results of her work have been published in a peer-reviewed journal and she also gave a presentation at a recent meeting of the British Nutrition Society.

*"These days so many people are overweight or obese", says Sally. "Research into functional foods, or nutraceuticals, that may be beneficial in preventing diseases that are associated with these conditions has become extremely important. We hope that our research will make a valuable contribution to the health of not only Australians, but people around the world."*

**HRI**  
HEART RESEARCH INSTITUTE

*Science for Living*

1800 651 373

[www.hri.org.au](http://www.hri.org.au)