



Victor Chang
Cardiac Research Institute

THE BEAT

News Ltd Newspix



**Thank you for helping us
change the future for people
living with heart disease**

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- Learning more about heart attacks in young, healthy women
- Identifying potential heart health risks through our free heart health checks

A message from Professor Jason Kovacic, Executive Director

Heart disease kills 17.5 million people each year around the world, and impacts millions more. Together, we're working to change this.

With fatal heart attacks on the rise, research into heart disease is more important than ever. Thanks to your support, we're making some incredible breakthroughs that have the potential to save lives and improve the way we treat heart disease.

Because of your overwhelming generosity, the agony heart failure patients like Marie and their loved ones go through while waiting for a heart transplant could soon be a thing of the past. This end of financial year, we set a big goal to raise vital additional funding for heart research projects like the BiVACOR total artificial heart. I am so excited to report back on the incredible response we received. (See page 3).

Your support keeps us moving forward and learning more about deadly diseases like Spontaneous Coronary Artery Dissection (SCAD) – a major cause of heart attacks in women under 50 (see pages 4-5).

We're also learning more about Hypertrophic Cardiomyopathy (HCM) – the leading cause of cardiac death in children. Your generosity powered a recent breakthrough by our team in WA using state of the art imaging techniques, bringing us closer to finding a way to prevent this devastating condition.

Thank you as always for your incredible gifts. You're helping us turn our research into new treatments and changing the future for the millions of Australians impacted by heart disease.

I hope you enjoy this issue.

Warm regards,



Professor
Jason Kovacic
Executive Director



RESEARCH UPDATE

With your help, we're learning more about how to prevent cardiac death in children

Hypertrophic cardiomyopathy is the leading cause of cardiac death in children aged between 5 and 15, but you're helping power breakthroughs that bring hope.

Hypertrophic cardiomyopathy (HCM) is an inherited disease that can cause the heart to become abnormally large. Due to its size, the heart then stiffens up, sometimes leading to an irregular heart rhythm and an increased risk of sudden death in children.



With your help, Professor Livia Hool is pioneering a treatment for HCM.



In the past, there was no effective treatment for HCM. But a recent breakthrough by researchers at the Victor Chang Cardiac Research Institute based at the University of Western Australia may change that.

Powered by your generosity, the new study builds on previous research headed by Professor Livia Hool. This research found that by targeting a calcium channel in the heart with medication, it was possible to prevent the heart from enlarging. And, even in patients who already had an enlarged heart, the medication was able to partially reverse the condition.

Your continued support has helped Professor Hool and her team progress to investigating a specific molecule that may be able to prevent enlargement of the heart.

To do this, they're using a state of the art imaging technique known as in vivo multispectral fluorescence imaging. This helps them track the movement of oxygen in the cells – and develop medications to reduce the amount of oxygen used by certain cells, which can help prevent HCM in patients who are genetically susceptible.

This discovery is a vital part of moving Professor Hool's work closer towards clinical trials to demonstrate its safety and efficacy as a treatment for children at risk of HCM – and it's made possible thanks to wonderful people like you.



Above: Professor Chris Hayward and Dr Sam Emmanuel are honoured to play a part in bringing the artificial heart to patients.

Left: Marie and her daughter Faith are so very grateful to you for supporting heart research.

Thank you for joining our fight against heart failure

Because of you, we're closer to changing the course of heart failure treatment forever – bringing hope to those in need of a heart transplant and their families.

At the end of the last financial year, we set an ambitious goal to raise \$332,000 towards vital heart research projects like the BiVACOR artificial heart. Thanks to incredible people like you, we exceeded our goal, raising a total of \$355,699.14.

The BiVACOR artificial heart is a ground-breaking device that has the potential to revolutionise the way patients with severe heart failure are treated. Designed by Australian engineer Daniel Timms and his team, it's an incredibly sophisticated electric pump that can be used to restore heart function in patients waiting for a transplant – and maybe one day replace donor hearts all together.

Institute scientist Professor Chris Hayward and his team are assisting in an international effort to complete preclinical studies to prepare the artificial heart for its first human trials. It's because of the generosity of supporters like you that we are able to progress this life-saving work.

“**I'm so very grateful for the support of our donors. Thanks to you, we can move forward with research and help patients.**”

– Professor Chris Hayward

Thanks to you, countless Australians with severe heart failure have hope for the future. Australians like Marie,

who developed a rare form of heart failure during her first pregnancy.

After her daughter Faith was born prematurely at 30 weeks by emergency c-section, Marie received the devastating news that she needed an emergency heart transplant. She was placed in an induced coma to await surgery when her daughter was just a few days old.

Marie is incredibly grateful that she got a donor heart in time. With long waiting lists and heart donors in short supply, many others are left in limbo with no way of knowing if or when their turn will come. And she is grateful to you, because you have shown through your overwhelming generosity that you care about creating a better future for heart patients like her.

Thank you for helping us bring this incredible new innovation a step closer.



You're helping us find a genetic link for the leading cause of heart attacks in younger women

Spontaneous Coronary Artery Dissection (SCAD) is a potentially deadly heart condition that mostly affects women in their 40s and 50s who don't have traditional heart attack risk factors.

You may have already read about Lana – a fit and healthy 51-year-old woman whose life was turned upside down when she had a heart attack out of the blue. Out to lunch with a friend, she thought she just needed an antacid – it turned out she needed an ambulance.

Lana didn't know it, but she was having a SCAD heart attack.

“ I heard the words “suspected heart attack” and I thought, what? No. That’s silly. But in the back of the ambulance, after hooking me up to some monitors, the paramedic said, ‘it looks like you’re having a heart attack’,” says Lana.

SCAD is the number one cause of heart attacks in women under 50, yet most of us have never heard of it. And until recently, we knew very little about this frightening condition, its causes, or the best way of treating it.

But now, thanks to your support, a global team of scientists including researchers from the Institute, are getting closer to finding a genetic cause.

WHAT IS SCAD?

SCAD occurs when there is a tear in an inner layer of one of the blood vessels in the heart. This causes blood to seep between the layers of the artery where it forms a blockage that can slow or block blood flow to the heart.

SCAD can cause angina, heart attack or abnormalities in the rhythm of the heart. In the most tragic cases, it can lead to sudden death.

Research suggests SCAD accounts for up to 24% of heart attacks in women under the age of 50 and it is the most common cause of heart attacks associated with pregnancy.



You are powering SCAD research to protect women's hearts.





JOINING THE GLOBAL EFFORT TO PREVENT SCAD – AND ACCELERATE TREATMENT

Our team at the Institute, led by Professor Jason Kovacic, is the first team outside of the USA to join the iSCAD Registry – a global collaboration of patients and researchers that seeks to learn more about SCAD.

With 1271 patients in the registry, including Lana, it gives our team access to more patients to gain a better understanding of this condition. We hope that by working together we can find answers for those at risk of a SCAD heart attack.

WHY IS SCAD RESEARCH SO IMPORTANT?

Until recently, SCAD was thought to be a rare condition, but now we know it's more common than we thought. But, we still know very little about the causes and risk factors for SCAD and there are currently no targeted treatments available.

Thanks to people like you supporting heart research, we are uncovering more about this mysterious condition. A SCAD heart attack is very different to a traditional heart attack. SCAD isn't caused by plaque build-up in the arteries – in fact most survivors are fit and healthy with none of the traditional warning signs. SCAD also impacts far more women than men, with nine out of ten sufferers being women.

Around 20-30 percent of those who experience one SCAD heart attack will go on to have another, which means survivors are often faced with uncertainty, anxiety and fear.

FINDING A GENETIC CAUSE FOR SCAD

Lana knew more about SCAD than most Australians because her sister had a SCAD heart attack 20 years prior.

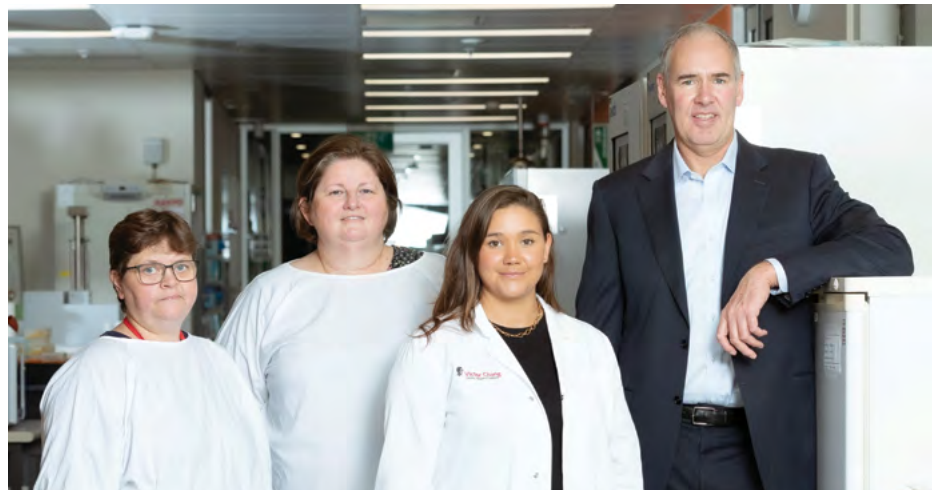
At the time her sister was told there was no genetic link, but thanks to our global collaboration of researchers, we've found at least 16 genes associated with SCAD – and identified a key gene that could be a leading cause.

This gene is called PHACTR1, and it's likely to be linked to SCAD through a number of different ways – which scientists at the Institute are working hard to understand.

“It's vital we get answers so our daughters and nieces can be protected from this awful disease which hits without warning. I hope by being part of this registry I can make a difference,” says Lana.

Thank you to everyone who has generously donated to our recent fundraising appeal to raise vital funds for SCAD research.

Together, we can help protect women at risk of developing SCAD and find new and more effective ways to treat this potentially deadly disease.



Professor Jason Kovacic and his team of researchers are so thankful you choose to support their research.



A 10-minute heart check might have saved Gary's life

We're bringing free heart health checks to communities across Australia – here's why.

Every 12 minutes an Australian dies of heart disease. But tragically, for many people, by the time they notice symptoms it's already too late. People like Gary, who lost his life to a heart attack in 2021. Now his daughter Jo is helping Gary's generous spirit live on by raising awareness of the importance of heart health checks for everyone.

“**We do prostate testing, breast screening, pap smears... we do all these tests, so why not the heart?**” Jo says.

Gary was 72 and his blood pressure was fine. He had no reason to think anything was wrong, until one day while driving to Perth he

had a heart attack and couldn't be revived. It turned out that Gary had atherosclerosis – a build-up of plaque in the arteries.

Atherosclerosis is often called the silent killer as symptoms are sometimes only present when the artery becomes totally blocked – which for many is too late.

After Gary passed away, his children had a series of heart health tests, including a Lp(a) cholesterol test. This test measures a type of bad cholesterol called Lp(a) – which is not tested for in a routine cholesterol test. Lp(a) is strongly associated with genetics and is now known to be a major risk factor for atherosclerosis.

Because of this test, Gary's children learned they have genetically high Lp(a) – putting them at higher



Gary Strother's family hope they can help prevent other families losing loved ones.



risk of atherosclerosis and coronary heart disease. Now they can take steps to manage this risk and hopefully live long and healthy lives.

The good news is, thanks to our generous corporate supporters, the Victor Chang Heart Health Team is offering free mobile heart health checks to communities around Australia.

Find out more about our free heart health checks at hearthealthcheck.org.au

NEWS

Introducing our new Victorian heart disease hub

Thanks to your wonderful support, the Institute is growing once again.

We've recently established a new hub for heart research in Melbourne, which will help us investigate more areas of heart disease, reach more Australians, and power new discoveries.

The new hub will be headed up by Associate Professor Andre La Gerche, the Institute's newest faculty member. A/Prof La Gerche is a world leader in research into

OUR NATIONAL HEART HUBS:

University of Western Australia, Perth

Ingham Institute for Applied Medical Research, South Western Sydney

Victor Chang Cardiac Research Institute, Sydney

St Vincent's Institute of Medical Research, Melbourne

sudden cardiac death and how exercise affects heart function.

This exciting news also marks the beginning of a new collaboration between the Victor Chang Cardiac Research Institute and the St Vincent's Institute of Medical Research, Melbourne. From 1 September 2023, A/Prof La Gerche will be based at the St Vincent's Institute of Medical Research with his team of researchers.

With a well-established hub in Perth at the University of Western

Australia headed by Professor Livia Hool, we're Australia's only national cardiovascular research institute. We've also recently established a new strategic partnership with the Ingham Institute for Applied Medical Research based in South Western Sydney.

By expanding into more states and increasing our research capabilities, we can power more heart research and help more Australians living with heart disease and their families. And it's all thanks to you.

From school science award winner to star scientist: meet Monique Ohanian



Monique Ohanian is fulfilling her dream of a career helping people through research.

She was the very first winner of the Victor Chang School Science Award in 2003. Today, Monique continues to shine as a research assistant in the Inherited Diseases Lab at the Institute.

With a lifelong love of science, Monique's journey started in year 12 when she won the Victor Chang School Science Award for Outstanding Achievement in Biology and Chemistry.

"It was not so much about the physical award, but the amazing series of opportunities that followed. I was invited to spend time at the Institute, which allowed me to see science in action and witness brilliant minds converging, solving problems, improving lives and saving the lives of so many people," Monique says.

After a scholarship from The Heart Foundation and several periods of work experience at the Institute, Monique officially joined us part-time in 2007, while completing her Bachelor of Medical Science degree.

Since then, she's worked as a research assistant in the Inherited Heart Diseases Laboratory, led by Professor Diane Fatkin. This important area of research gives hope to many families affected by conditions like dilated cardiomyopathy and atrial fibrillation.

“Being part of the team at the Institute has translated a love for science into a career that is not only fulfilling personally but has many positive outcomes for others as well.”

– Monique Ohanian

Sally's leaving a life-saving legacy in her Will

Sally's 29-year-old godson Oli died suddenly of cardiac arrest while he was out on a run. Oli was in the prime of his life and had no idea he had an inherited arrhythmia.

To honour Oli, Sally is leaving a gift in her Will to the Institute to support life-saving heart research and prevent others from experiencing the heartbreak of losing a loved one.

I have recently revised my Will which has got me thinking carefully about who I would like to benefit after I'm gone," says Sally.

"Apart from loved ones, some of my estate will go to charities, including the Institute. It costs nothing to include important causes like heart research in your Will.



“The work that the Institute is doing to prevent and cure heart disease is staggering. So much fascinating and mind-blowing research is being undertaken that will save lives.

"For example, the Institute has developed a fast and accurate test that can identify early if there is inherited heart arrhythmia. If this test had been available to Oli, perhaps his heart defect could have been detected, and his death prevented."

If you would like to discuss including a gift in your will, please call Laura Svatos, Gifts in Wills Officer on 02 9295 8749, or email bequests@victorchang.edu.au for a confidential conversation.



To increase your impact, scan the QR code to donate.

You can also head to victorchang.edu.au/thebeat or phone 1300 842 867.

Thank you for your generous support.





How eating fish can help your heart

Fish not only tastes great, it's low in saturated fat and packed with omega-3 fatty acids – making it an ideal choice for your heart.

It's official! Eating two to three serves of fish a week is a simple and tasty way to maintain a healthy heart and potentially reduce your risk of heart disease and stroke.

The benefits of fish for heart health include:

- higher levels of HDL 'good' cholesterol
- reduced risk of blood clots
- slightly lower blood pressure

What types of fish should you eat?

Omega 3 fatty acids can be found in many types of fish, especially oily fish. **These include:**

- salmon
- mackerel
- herring
- barramundi
- bream
- flathead
- snapper
- canned sardines and salmon – and some varieties of canned tuna

Concerned about mercury in fish? The Food Standards Australia New Zealand website provides guidance on the consumption of high mercury fish, including for children, pregnant women and those planning to become pregnant.

What are omega-3 fatty acids?

Omega-3 fatty acids are a type of fat known as polyunsaturated fats. There are three different types of omega-3 fatty acids – docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA) and alpha-linolenic acid (ALA). DHA and EPA are found in fish and ALA is mostly found in plant sources.

Healthy ways to prepare fish

You may be tempted to rush off to your nearest fish and chip shop, but it's important to consider how your fish is prepared if you want to make the most of the health benefits.

Deep fried battered fish and other less healthy methods of preparation should be eaten in moderation. Healthier ways to prepare fish include baking, barbecuing, grilling, steaming, poaching and shallow frying.

If you're looking for some inspiration to add more fish to your diet, check out this saganaki recipe from Dr Xenia Kaidonis, postdoctoral scientist at the Institute, below.



Xenia's Saganaki



Ingredients (serves 4)

- 4 tbsp extra virgin olive oil, plus extra for drizzling
- 1 large onion, diced
- 2 large cloves of garlic, chopped finely
- 1 chili, sliced finely (optional)
- 3 tbsp tomato paste
- 2x 400g cans diced tomatoes or 1x 700ml bottle passata
- 12 large prawns, shelled, deveined, tails on
- 350g of fish fillets such as Barramundi, Bream, Flathead or Snapper cut into 4 large pieces
- 150g feta
- small pinch of salt
- handful dill, chopped, plus extra for garnish
- handful parsley, chopped
- crusty bread to serve

Method

1. Heat olive oil on medium heat on the stove in an oven proof pan.
2. Add onion and sauté until translucent.
3. Add garlic and chili and cook for 2 minutes.
4. Add tomato paste, diced tomatoes or passata, and salt, and simmer for 15 minutes on low heat until it reduces and thickens slightly.
5. Stir in dill and parsley, and cook for a further 3 minutes.
6. Add fish and cook for 5 to 7 minutes or until fish is just cooked through.
7. Add prawns, stir, and take off the heat
8. Crumble feta over the top, drizzle with a little olive oil, and place under the grill until the feta melts and browns slightly.
9. Garnish with extra dill and serve with crusty bread.

