



Australian
Breast Cancer
Research



Research Update

2015 Edition 1

ABCR Grant to Beat Breast Cancer

A recent grant awarded by Australian Breast Cancer Research (ABCR) in collaboration with The Hospital Research Foundation will help researchers come closer to stopping the spread of breast cancer to other parts of the body.

Researchers at the Basil Hetzel Institute for Translational Health Research (BHI) believe that enzymes in your body could be one of the factors contributing to an increase in breast cancer risk and spread.

The enzymes they're looking at are called peroxidases - released by immune cells at sites of inflammation and damage, which fight and eliminate bacteria.

"We have shown that these enzymes actually play a much more sinister role," said Professor Andreas Evdokiou, Head of the Breast Cancer Research Unit at the BHI.

Collagen is used by breast cancer cells to migrate and spread to other organs.

"We have found that peroxidases stimulate cells such as fibroblasts in areas of inflammation to lay down collagen and also encourage new blood vessel formation," said Prof Evdokiou.

continued page 2



Prof Andreas Evdokiou is finding new ways to prevent the spread of breast cancer.

Raising Awareness to Protect Her Children



Paula Collinson - "cancer changes your life."

"Breast cancer was never going to be my story."

Paula Collinson is one of five girls. Her oldest sister, Ann, was diagnosed with breast cancer a few years ago, so Paula was encouraged to have a mammogram each year. Last year, doctors found a lump.

"That day I just didn't want to be there, but in the end that was a lifesaving appointment," she said.

"To be told that, yes you have breast cancer at 45, when you have an eight-year-old and a six-year-old is devastating.

"I found it hard to reconcile that something that had given my children

the nourishment they needed was now trying to kill me."

Paula had a double mastectomy - to be sure the cancer could not invade her other breast, a decision she doesn't regret.

Having always been heavily involved in her children's lives, Paula suddenly found herself struggling to get them ready for school in the morning.

"I became a mum who was relegated to the sidelines, I was unable to focus, do housework or drive... sometimes I was unable to laugh," she said.

Luckily, the school community rallied behind Paula to help make meals and keep her updated with what was happening at school.

continued page 2

>from page 1

"One of the best things one of my girlfriends did was turn up every Thursday with a meal on my chemo week. She never asked me what I wanted she just arrived with a meal. It really always stuck with me that she did that."

Since the surgery and following her doctor's advice, Paula had a hysterectomy as she also had an increased risk of ovarian cancer. She has endured encapsulated sarcomas (an enclosed fluid pocket), a result of the mastectomy, which has meant several more surgeries.

However, she has chosen to keep her positive outlook on life.

"Cancer definitely changes your life. It changes your life forever. I probably live my life a lot better than I did before," Paula said.

"I can lie on the bed with my seven-year-old and have cuddles with him and read him a story at bedtime. He goes to sleep and I go into the room next door with my 10-year-old and we sit there and talk about boys and ovaries and periods.

"Before cancer I'd say 'kids I've got things to do, I don't have time, go to bed - go to sleep' and now that's such precious time for me."

Paula is sharing her story as a way to raise awareness about the disease. She hopes Australian Breast Cancer Research can continue to find ways to cure and prevent breast cancer so the children of today will not be burdened with the pain and heartbreak of this disease.

"I remember being in the car with my daughter Jaimee when she said to me 'mum when I get older will I need to worry about getting breast cancer?' The question took me back and also saddened me, I took her hand and said 'I hope not my gorgeous girl!'"



Paula enjoying life with her family.

ABCR Grant to Beat Breast Cancer

>from page 1

In an exciting discovery which they have patented, the team has shown peroxidases lead to tumour formation and metastasis (spread).

"It's a new finding with enormous potential not only for breast cancer but for other cancers, as well as biological systems and biology in general."

Prof Evdokiou and his group have formed a collaboration with researchers at an Austrian facility who have already developed a way to inhibit peroxidases.

The team wants to prevent breast cancer spread because once it has moved to other parts of the body, a woman's chance of survival is much lower.

Prof Evdokiou's group will also collaborate locally with Associate Professor Wendy Ingman and the Breast Biology and Cancer Unit who are also based at the BHI, to look at ways to inhibit these enzymes and help prevent breast cancer in the first instance.

Ann-Marie Ordner was diagnosed with stage-two, grade three (fast growing) breast cancer in 2011.

"Thanks to the quick work and care of my GP, Breast Surgeon, Oncologist and later Radiologist, the cancer was contained to my breast and only one lymph node. I have had a double mastectomy and reconstruction and ongoing treatment with Tamoxifen – a breast cancer hormone therapy," she said.

Having experienced the disease first hand, she is passionate about breast cancer research aimed at prevention.

"I definitely believe that any prevention is better than a cure and if this grant can be a step in helping to stop breast cancer spreading or impacting women in the future, it is a fantastic result all round.

"If there is an upside to my terrible breast cancer experience it has been the fantastic doctors and nurses and also the passion of the researchers in trying to find a cure or better treatments for the disease."

The two breast cancer research groups will now work to find out how exactly they can stop peroxidase activity and change the way they lead to cancer development, progression and metastasis.

"Our groups are focused on two different spectrums of the disease and I feel that by coming together we can really begin to address questions that haven't been answered before," said Prof Evdokiou.

Prof Evdokiou said peroxidases generate collagen, which is also a hallmark in breast density – a major risk factor for breast cancer. In fact women with dense breasts are up to six times more likely to develop breast cancer than those without dense breasts.

"Therefore, we can potentially use these enzyme inhibitors to stop collagen deposition, and therefore limit density, and therefore limit risk."



Prof Wendy Ingman is helping to prevent breast cancer.

A Dinner With Friends to #forkcancer



During the time you have friends over for dinner, 40 Australians will be diagnosed with cancer.

You can help change this by hosting a Longest Table.

ABCR is proud to this year be one of the beneficiaries of The Longest Table; a fun and simple event where you host a dinner with your friends. Your dinner can be

as laid back or as elaborate as you like, whether it's a pizza or burger night or even an eight-course meal.

The Longest Table Ambassador, Bree May has grand plans for her 2015 Longest Table. After sadly losing her cousin to cancer last year, Bree is inspired to raise as much as possible to support cancer research.

www.thelongesttable.com.au

"Cancer is something that has touched my family a lot.

"I dream of a world without this terrible disease, and by getting involved in The Longest Table I feel like I am making a difference."

You too can host a dinner with your friends on Saturday, 20 June to #forkcancer.

So lock the date in your diary, register via the website and start planning your Longest Table. A cure could be at the end of your table.



Bree May has been touched by cancer and hopes to make a difference.

Research Snapshot: Chris DiFelice



Chris DiFelice hopes his research will stop the heartache people experience from breast cancer.

In the first year of his breast cancer research PhD, Christopher DiFelice can't imagine what it might be like having a loved one diagnosed with breast cancer.

Christopher has recently joined the Breast Cancer Research Unit at the Basil Hetzel Institute for Translational Health Research led

by Professor Andreas Evdokiou. He hopes that one day the research he is a part of will stop the heartache that too many people experience as a result of breast cancer. His particular research focus is on understanding how and why breast cancer spreads to others parts of the body - specifically the lungs.

"I've been blessed in that none of the women in my life have been touched by this disease," said Christopher.

"But knowing that we're here every day trying our best so we can one day more effectively treat people who do suffer is really satisfying.

"It motivates me to know that we're doing all we can do, and giving these patients hope. I think that's the most important thing."

What happens when breast cancer spreads?

Sadly once breast cancer spreads the chances of it being deadly are quite high. There's been a lot of work that's been done dealing with the primary tumour in the breast and we've come a long way in treating that with surgical resection, which leads to a cure in most cases. However, I think when we look at the secondary site - when the cancer begins to spread to other organs in the body - that's when it becomes a real issue. We don't really have the same level of understanding of this compared to the primary tumour. So I am investigating what factors are involved in the spread of cancer cells.

What does your research involve?

One of the main things I'll be studying is organ fibrosis; a build-up of collagens that eventually leads to scar tissue. We want to look at whether fibrosis increases the chances of breast cancer spreading. So basically whether a fibrotic environment in the lungs allows the circulating cancer cells to 'home' into a site. Fibrosis can cause some debilitating complications especially when it happens in the lung; it causes a build-up of scar tissue which can lead to the lungs not getting enough oxygen into the bloodstream. This makes it very difficult for the person to breathe; it essentially leads to the impairment of organ function that can erode a patient's life very quickly.

Along with the other goals of the Breast Cancer Research Unit, if we can identify the relevance of fibrosis, we may potentially be able to reduce the potential for breast cancer spread and in turn save many more patients from suffering with secondary breast cancer.



Breast Exam Tips

Breast self-examination should be conducted by women of all ages at least once a month.

Women are encouraged to become familiar with their breasts so they can easily see any changes. Below are some tips on how to conduct breast self-examination:

Check your breasts are the usual size, shape and colour without visible distortion or swelling. If you see dimpling, puckering or bulging of the skin, redness, soreness, swelling or a rash bring them to your doctor's attention.

This is also important if you notice a nipple that has changed position or an inverted nipple. Now look for signs of fluid leaking from one or both nipples – it is usually watery, milky, yellow fluid or even blood.

You will need to check a few different ways:

1. Stand facing a mirror with your shoulders straight and your arms on your hips.
2. Now raise your arms.
3. Next, lie down and using the first few finger pads of your hands, with a firm, smooth touch and with flat fingers, feel your breasts in a circular motion (about the size of a 10 cent coin).
4. Follow a pattern so you know you've covered the whole breast, either in a circular motion or vertically from your collarbone to your abdomen and from your armpit to your cleavage. Make sure you feel the entire breast area – when you reach deep tissue you should be able to feel down to your rib cage.
5. Then feel them again when you're standing or sitting.

If you notice any changes in the look or feel of your breast please consult with your doctor.

Giving Back to the Community

Adrian Yeak watched his mother battle breast cancer three times and survive.

Now he is using this personal journey to raise awareness of the disease and to help others.

Adrian was only 17 when his mother was diagnosed the first time and says he is only too aware of the impact breast cancer has on the person and the family.

"It has been some of the most difficult times in my family's life and my mother's," Adrian said.

"She is the strongest woman I know and we have been extremely fortunate - we thank God for watching over us."

The talented photographer is now repaying this good fortune by launching FORM – a beautiful hard cover book of black and white images, part of his recent exhibition featuring male and female artistic nude images taken of dancers, singers, models and entertainers.



Adrian is inspired by his Mother's breast cancer journey and wants to raise awareness of the disease.



"My main aim is to raise as much money as possible through sales of the book so I can donate 100 per cent of the profits to research into this disease through Australian Breast Cancer Research (ABCR)," he said.

"All the models are people I know who have kindly donated their time and 'forms' for this collection.

"The images are all very tasteful and artistic with the focus being on light, shapes, structure, lines and shadows – it's a celebration of the human 'form'," he added.

ABCR researcher Dr Pallave Dasari was thrilled to attend the launch and receive her autographed copy from Adrian.

"It was such a pleasure to meet Adrian and speak about our research at the launch. I hope everyone will go online and get a copy," Dr Pallave said.

FORM is priced at \$55.00 and is available online.

www.photosonline.djandiek.com

Australian Breast Cancer Research is a disease specific affiliate of The Hospital Research Foundation. We fund vital breast cancer research at the Basil Hetzel Institute for Translational Health Research.