

UNDER THE MICROSCOPE

NEWSLETTER OF THE TELETHON INSTITUTE FOR CHILD HEALTH RESEARCH



Telethon Institute for
Child Health
Research

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OUR SUPPORTERS

\$5m to fight infectious disease

Wesfarmers kicked off Telethon 2013 with a \$5 million donation over four years to establish the Wesfarmers Centre of Vaccines and Infectious Diseases at the Telethon Institute. The Wesfarmers Centre will be a game changer in its field, bringing together researchers and clinicians at the Telethon Institute, PMH and WA's universities to deliver new vaccines, diagnostic tests and devices.

Telethon Institute Director Professor Jonathan Carapetis said the philanthropic support from Wesfarmers would allow the teams to focus on major issues affecting WA, and Aboriginal children in particular.

"Serious infectious diseases are still the major reason that WA children are admitted to hospital and the most common cause of childhood deaths worldwide," Professor Carapetis said.

"Thanks to this very generous support from Wesfarmers, we believe we will make significant progress in reducing the number of infections and treat them more effectively."

Wesfarmers Chairman Dr Bob Every AO said Wesfarmers was pleased to provide a foundation grant for the Centre of Vaccines and Infectious Diseases, renewing its longstanding relationship with the Telethon Institute.

"Wesfarmers firmly believes we need strong, vibrant communities in which to live and work and we are happy to invest in areas which contribute to that, particularly medical health and research," Dr Every said.

"As a West Australian based company, we feel a particular obligation to focus funding where it can make a real difference to the West Australian community."

The Wesfarmers Centre will initially work on streptococcal infections, rheumatic heart disease, pneumonia, influenza, gastroenteritis and serious bloodstream infection which collectively account for around 2,000 children being admitted to hospital in WA each year.

There will be a focus on vaccine development and raising WA's immunisation rates.



WESFARMERS CHAIRMAN DR BOB EVERY AO
WITH TELETHON 2013 LITTLE STAR JACK DAY



Telethon Institute for
**Child Health
Research**

under the MICROSCOPE

is produced by the Communications & Development team at the Telethon Institute for Child Health Research

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Telethon 2013

After last year's record tally of \$16.8 million we approached this year's Telethon with both excitement and trepidation. Surely it wasn't possible to reach the dizzying heights of last year?

But it was. Once again, West Australian's have shown their generous nature and the bottomless reach of their charity, raising a total of \$20.7 million.

The total reflected a year of fundraising events, auctions, government and corporate donations, and pledges from all walks of life and from all parts of the state.

For more than 26 hours, Channel Seven's live TV broadcast entertained and inspired people to get behind Telethon and the many organisations that benefit from the money raised.

The show was a marathon effort and saw more than 300 TV production crew, 55 hair and make-up artists, more than 600 entertainers and more than 1,000 volunteers work tirelessly to make this year's Telethon the most successful yet.

Telethon's support underpins much of the groundbreaking work we do and plays a significant role in helping the Telethon Institute deliver on its promise of making a difference to the health and wellbeing of WA kids. We couldn't do our work without the generous and continued support of Channel 7's Telethon.

From everyone at the Telethon Institute, THANK YOU!



PHOTOS COURTESY
VIVA LIFE PHOTOGRAPHY



Amazing Adventurers

The Telethon Adventurers have had another outstanding year, distributing more than \$1.6 million for research into childhood brain tumours.

A highlight of 2013 was *Medulloblastoma Down Under* – a global symposium on childhood brain tumours. Over three days, more than 50 of the world's leading researchers, oncologists and neurosurgeons came together here in WA to discuss better ways to tackle medulloblastoma, which affects one in five children who have a brain tumour.

At the end of November, the prestigious journal *Acta Neuropathologica* published the findings from this groundbreaking gathering, the report serving as an action plan and agreement by research institutes all over the world to tackle research collaboratively.

Adventurers from all walks of life continued to step outside their comfort zones to raise money, with 2013 Adventures including:

Kokoda for a Cure

Fourteen Adventurers walked the challenging Kokoda track over ANZAC

Day where they were able to attend a poignant dawn service on Brigade Hill.

Chamonix Challenge

Seven of the 10 Adventurers reached the summit of Gran Paradiso in the Italian Alps at 4100m.

Epic Dolomite Challenge

This team covered 1000km with over 2000m climbed – this was truly an epic cycling Adventure in the stunning Alpine region of Italy.

Summits of Bolivia

Five Adventurers conquered four mountains in the Andes mountain range in South America.

Jump for a Cure

This was the biggest Jump for a Cure to date with 40 Telethon Adventurers skydiving at 14,000ft over the Busselton coastline.

KPMG Ice Marathon

An extreme adventure that took part only a few miles from the South Pole. All six Adventurers completed the 42km race in -20 degrees with ice and snow underfoot.

Tour de Gracetown

Organisers of this bi-annual cycling event through the south west of WA, again partnered with the Telethon Adventurers and raised and donated over \$40,000 in 2013.

Elliot's Army

The Army was out in force at several community sporting events including the Colour Run and the HBF Run for a Reason.

Other Fundraisers

Those that didn't 'adventure' but still wanted to help raise money held various events and fundraising activities, from dinner dances to muffin bake sales. This Telethon Adventurers community raised over \$200,000 between them!

In 2014, the Telethon Adventurers are hoping for bigger and better, with some exciting NEW adventures appearing in the calendar - Man vs Wild in the Kimberley region of WA, A Step Closer walk along the Great Wall of China and the first in the Telethon Adventurers Seven Summits series – Mt Elbrus in Russia.

www.theadventurers.com.au



Commitment to Aboriginal children and families

Standing on Nyungah Whadjuk Boodjar in Kings Park, amongst the mighty boab trees and singing koorlbardi (magpies), we launched **Working Together: Telethon Institute Commitment to Aboriginal Children and Families 2013-2017**.

The Commitment flows from the Telethon Institute's Strategic Plan launched in April this year, and our pledge to develop a specific statement around Aboriginal health research.

The Commitment outlines the guiding principles for our work in Aboriginal child health and the priorities to be addressed. We have a proud history of research and advocacy with Aboriginal families and we now seek to draw upon this, and further build partnerships with the community and stakeholders, to address the big issues faced by Aboriginal kids.

Under the guidance of Glenn Pearson, the Institute's Manager Aboriginal Research Development, with Board Member Kate George and colleagues, the Commitment was developed with the help and support of Aboriginal community members.

At the launch, Institute Director Professor Jonathan Carapetis and his family were welcomed into the Nyungah community by Aunty Doolann Leisha and Uncle Walter Eatts. Professor Carapetis also accepted the community challenge issued by Josie Jantz, a player with the West Coast Fever netball team and Manager of the Deadly Sista Girlz program at the David Wirrpanda Foundation.

Josie's challenge: "How are you going to ensure that we start to create REAL generational change and move our people away from day to day survival and towards living a healthy lifestyle where we are proud Aboriginal and Torres Strait Islander People having good spirit and thriving in this world?"

The Institute's Commitment is the first step in accepting and tackling this challenge. But we can't do it alone. We need to work together with the Aboriginal community and other not-for-profit organisations to ensure we can meet the challenge and deliver real improvements for Aboriginal children and families.

To read the Commitment, visit our website at www.childhealthresearch.org.au

**YIRAH NITCHAH WUDJUK PIBLEMEN
NYUNGAH WIREN BOODJAH**
UPON THIS TRADITIONAL AND
SACRED LAND

**NGULLUK GOORLINY KIDJI YACKER
DANJOO**
WE GATHER TO WORK TOGETHER

**DJI NGULLAH GOOLANGGASS GUDJI
BULLUP BOORDAH WAAN**
FOR OUR CHILDREN AND THEIR
FUTURE

NYUNGAH TRANSLATION BY
AUNTY DOOLANN LEISHA AND UNCLE WALTER EATTS



JOSIE JANTZ AND JONATHAN CARAPETIS



OUR SUPPORTERS

A very big thanks to all of our community fundraisers who have gone to amazing lengths to support our child health research.

If you would like to hold your own community fundraiser, please contact us on 08 9489 7779.



Five ladies took 10 ordinary Thursdays, and made them extraordinary with a little creativity and a lot of flair! The result was almost \$2500 to support our child health research. The staff at Short Stop Lunches in Midland held “dress up Thursdays” in the 10 weeks leading up to the Telethon weekend. They entertained their customers as witches, nurses, ganstas, cops and robbers, sailors and more!



Alix Tancredi's daughters are great friends with Addison Read and her sister Olivia. Addi has Rett syndrome - a rare neurological disorder. Determined to help children like Addison, her employer BP Refinery in Kwinana kindly agreed to make a \$3000 donation through their BP Employees Charitable Trust Fund. Alix also ran in this year's City to Surf raising a further \$1130 for our Rett syndrome research. Thank you Alix and BP Refinery!



A big thank you to CSG for their generous donation of \$10,000 to help us research childhood diseases and disorders. Your contribution helps us make a difference to the lives of Australian children.

Spiro Raftopoulos led an enthusiastic team on this year's Tough Mudder, a 20km obstacle course designed to test strength, stamina, mental grit and camaraderie. There were a few injuries, aches and pains but overall they survived and raised an incredible \$15,500 for the Allegra Scafidas Fund. A special mention to Kids College for donating \$2,000 to the cause. This money will support research into the prevention of pneumococcal disease. Thank you Team Allegra!



Supporting the Ethan Davies Scholarship

Perth Modern Year 11 student Katharine Guo led a group of Year 10 student youth ambassadors to fundraise for the Ethan Davies Scholarship as part of their Community Service Project. Over a week, the students held a Super Ethan Slumber Party movie night, a bake sale and a raffle raising almost \$2000.

Ethan's grandmother, Jenny Davies, and her friends also ran a sausage sizzle at Masters Hardware store in Baldivis in support of the Scholarship and All Saints' College alumni committee, the 'Old Saints' held a sausage sizzle and frisbie sale raising \$1324. Thank you all for your support!

Equity for all

Dr Saskia Decuyper longs for equity, particularly in healthcare. She believes that all people - regardless of gender, age, ethnicity, social status or religious background - should have equal access to healthcare and equal opportunities to improve their quality of life. But rather than sounding like a cliché or a Miss Universe contestant, Saskia has spent the last 10 years of her life dedicated to achieving this reality.

Saskia is an Associate Principal Investigator at the Telethon Institute working on neglected infectious diseases affecting poor and marginalised populations.

"It doesn't matter what context it's in, it deeply saddens, frustrates and angers me to witness situations where people suffer due to inequity," says Saskia.

"One of the main obstacles disadvantaged communities face is a lack of access to healthcare infrastructure," she explains. "If they are sick, there is nowhere for them to go, and even if there is, there's a lack of medical staff who can correctly diagnose their conditions and provide treatments."

Saskia works in the area of 'metabolomics', a new biomedical discipline that permits rapid detection of the biochemical small molecules present in the human body by analysing a simple blood or urine sample.

The main objective of her metabolomics research is to help close the gap created by geography, poverty and infrastructure to the delivery of effective healthcare.

Saskia coordinates research developing a diagnostic test to allow anyone, anywhere to accurately detect the presence of severe bacterial infections that are currently difficult to identify. If not detected or not detected timely, these infections often end with death.

"Developing easy to use diagnostic testing is the key to tackling this issue," Saskia explains. "The test I want to develop would require almost no infrastructure so could be used anywhere to correctly diagnose lethal bacterial infections even when no medical doctor is around."

Saskia's research stretches beyond Australia's borders, with study sites in Southeast Asia and West Africa. Saskia manages the collection and analysis of clinical samples from these countries and oversees the analysis of them back in Perth.

The data generated from each sample is massive, and it's too time-consuming and prone to human error for the samples to be analysed by hand. Instead, Saskia analyses the samples using Bioinformatics techniques.



Bioinformatics is a relatively new exciting field of science that applies information technology to the field of biology to help understand biological processes. It allows us to analyse an unprecedented amount of data quickly.

"When we are searching for clues about the causes of disease, it can be like searching for a needle in a haystack," explains Saskia. "Bioinformatics brings together knowledge in computer and biological sciences to write programs that can analyse millions of pieces of data. What used to take years, now takes days or weeks."

Saskia recently relocated to Perth to conduct this research bringing with her a wealth of international research experience. She joined the Institute from Belgium, where she was leading a research project studying the parasitic disease *visceral leishmaniasis* at the Institute of Tropical Medicine in Antwerp.

Leishmaniasis is a tropical disease transmitted by the bite of a sand fly. Symptoms can vary from benign skin sores to visceral, systematic disease which inevitably leads to death if not treated timely.

Saskia's team wanted to understand the barriers to effective treatment of leishmaniasis in developing countries.

"Leishmaniasis is one of the most neglected tropical diseases, despite affecting millions of people around the world," she says. "My research took me to many different corners of the world where I got to work closely with clinicians, scientists and policy makers to help find answers to problems affecting the care of leishmaniasis patients."

"I fell in love with the job and with the idea that I could do something to help people worse off than me."

New research projects for 2014

Congratulations to the Institute researchers who recently received competitive grants from the National Health and Medical Research Council. The successful grants included four project grants and three Early Career Fellowships.

Cystic fibrosis research

Professor Stephen Stick will lead a team developing new therapies to treat the early inflammation associated with the development of progressive lung disease in children with cystic fibrosis.



Cystic Fibrosis (CF) is the most common, life-shortening, inherited illness that affects Australian children. CF most commonly affects the lungs and the digestive system but also a number of other organs and systems.

Stephen says lung damage in those with CF is not reversible, so the best hope for improved long-term outcomes is by preventing the development of lung disease from diagnosis.

“Our AREST CF collaboration between paediatric centres in Perth and Melbourne has identified that progressive lung disease occurs soon after diagnosis following newborn screening,” he explains. “We also know it is strongly associated with inflammation.”

This new research project will look at new anti-inflammatory drugs for the treatment of inflammation in the lungs of kids with CF from discovery, through validation to testing.

UVB Phototherapy

Professor Prue Hart and her team will be investigating narrow band UVB phototherapy for patients with Clinically Isolated Syndrome.



Clinically isolated syndrome (CIS) can indicate the possibility of multiple sclerosis (MS). CIS is a first clinical episode lasting at least 24 hours that is caused by inflammation and damage in the central nervous system. A person who experiences a clinically isolated syndrome may or may not go on to develop MS.

Prue says the team will be looking at the effects

of narrow band UVB therapy on immune, MRI and inflammatory markers of disease as well as a unique, recently identified transcription signature for multiple sclerosis. It is hoped that the disease course will be dampened or deviated to a more benign pathway by the treatment.

“The phototherapy will be very similar to that given to patients with another autoimmune disease, psoriasis,” says Prue. “Narrow band UVB phototherapy in people with psoriasis has proven safe and effective.”

“We anticipate that the phototherapy should give the patients not only the benefits of UV-induced vitamin D3 production but also the benefits of the other biological pathways stimulated in skin by UVB exposure.”

Gastroenteritis in Aboriginal children

Dr Tom Snelling and his research team will be testing the effectiveness of the drug Nitazoxanide for treating gastroenteritis in Aboriginal children.



Tom says not only does gastroenteritis affect Aboriginal children more often than non-Aboriginal children, but Aboriginal children usually experienced longer hospital stays if they are admitted.

Tom said that while washing hands regularly and vaccinating children against rotavirus are the most important steps to preventing the spread of infection, improved treatments for gastroenteritis could also have a significant impact.

“Nitazoxanide appears to be active against a broad range of gut pathogens,” says Tom, “so it may have a role in the standard care of these children.”

“Improved treatment would reduce the burden on Aboriginal families and might prevent some children needing to be admitted.

“In addition to vaccination, improving housing for people living in remote communities and reducing the number of people living in the one house are very likely to have important impact on reducing the burden of diarrhoeal disease,” he said.

Dr Shannon Simpson - Peter Doherty Biomedical Early Career Fellowship

Dr Shannon Simpson first developed a passion for the workings of the respiratory system in her honours year at La Trobe University.



Today, Shannon is a post doctoral researcher at the Telethon Institute working across a number of projects including the early surveillance/intervention of children with cystic fibrosis, the long term effects of preterm birth and the development of a new method to diagnose exercise-induced asthma in young children

Shannon's Fellowship research will look at the early identification and treatment of babies at highest risk of having problems after premature birth.

"I'll be measuring respiratory, cardiac and muscle function in preterm babies so that I can look not just at the lungs but the entire thoracic system of these babies," explains Shannon. "This will provide me with a unique integrated understanding of the thoracic consequences of preterm birth and how these babies at highest risk of adverse outcomes can best be identified."

Dr Gina Trapp - Public Health (Australia) Early Career Fellowship

Dr Gina Trapp is passionate about nutrition, physical activity and obesity prevention and management. She's a qualified nutritionist and completed her PhD earlier this year looking at the neighbourhood environment and physical activity benefits of kids walking to school.



Gina will use her Fellowship to extend her research in the field of neighbourhood environments to nutrition. Her research will explore factors such as the geographical location of food outlets and how they

influence the eating behaviours and obesity risk in young people.

"Healthy eating contributes to an overall sense of wellbeing and is a cornerstone in the prevention of many diseases such as diabetes, obesity and cancer," says Gina.

"A new and growing body of research is investigating whether the neighbourhood in which people live has an important role to play in determining food choices and obesity risk.

"To date, many studies have focused on adults, with less attention on young people so I hope to shed some light on the food decisions of young people."

Carrington Shepherd – Public Health (Australia) Early Career Fellowship

Carrington Shepherd wants his research to increase the pace of change towards health equity for Aboriginal people in Australia.



His Fellowship research will look at the social pathways to good and poor physical and mental health outcomes in Aboriginal and Torres Strait Islander children. This includes a focus on pathways to preventable childhood deaths.

Carrington says this will identify the most significant social factors that drive ill health, disease and death in Aboriginal kids.

"My research findings will also provide a greater appreciation of the interaction of these factors in childhood," he says, "and improve population health strategies that aim to prevent poor health outcomes in early life."

Carrington will look at the socioeconomic disparities in the health and development of Aboriginal children in Australia as well as investigate the causal pathways from socioeconomic status (SES) to disease and death.

Professor Nick de Klerk also received a project grant to look at heritable and environmental determinants of hospitalisation for common childhood illnesses.

OUR SUPPORTERS

A highlight of the golfing calendar each October is the Friends of the Institute ladies charity golf day at Cottesloe Golf Club.

This year, 144 golfers tee'd off and helped to raise more than \$27,000 to fund Institute researchers to attend conferences and workshops overseas and interstate.

Pictured is the golf day organisers and helpers with Institute Director Professor Jonathan Carapetis.



INFECTIOUS DISEASE

Gastro gap between Aboriginal and non-Aboriginal children shrinking

The world's largest study of gastroenteritis trends in children has shown the disparity between Aboriginal and non-Aboriginal health may be improving. Gastroenteritis or infectious diarrhoea is a leading cause of illness and death globally, causing more than 800,000 deaths in children under five, mainly in the developing world.

Telethon Institute researchers examined gastroenteritis hospitalisations in almost 600,000 West Australian Aboriginal and non-Aboriginal children over two decades.

The study results show that, between the periods 1983-1994 and 1995-2006, the hospitalisation rate for gastroenteritis dropped significantly in young Aboriginal children with a 42% decline in those aged 12-17 months and a 36% decline in those aged 18-23 months.

In contrast, over the same time periods, the rates of gastroenteritis increased significantly in non-Aboriginal children with a 34% increase in those aged 18-23 months and 25% increase in those aged 2-4.

Lead author Dr Hannah Moore said while the rate of gastroenteritis in Aboriginal children has declined substantially, the gap between Aboriginal and non-Aboriginal children continues.

"The gap has closed over two decades but rates of gastroenteritis in Aboriginal children under five were still 3-8 times higher than non-Aboriginal children of the same age," she said.

"Although much remains to be done, there have been general improvements in Aboriginal health and hygiene including water quality and sanitation, and reduced



overcrowding, which are likely to have contributed to a reduction in infections in Aboriginal children."

Dr Moore also says that a decline in severity of the disease may have led to more children being treated as outpatients rather than being admitted to hospital.

The observed increase in non-Aboriginal children being hospitalised for gastroenteritis may in part be due to the decline of the availability of bulk-billing GP services.

The study results also showed gastroenteritis hospitalisation rates varied between different climatic zones and geographical regions, highlighting the continuing need for better access to medical and health services for those children living in remote areas.

Among the most important causes of gastroenteritis is rotavirus. In 2007, rotavirus vaccine was introduced into the routine childhood immunisation schedule in Western Australia. Dr Moore says the next stage of the research is to document the impact of this program on hospitalisation rates for gastroenteritis.



STUDY COORDINATOR
JASMINKA MURDZOSKA WITH
STUDY PARTICIPANT TESS

New study for people with Down syndrome

The Telethon Institute's Dr Helen Leonard says a new clinical study is an exciting step towards potentially improving the quality of life of people with Down syndrome.

Down syndrome is the most common known biological cause of intellectual disability. Around one in 900 West Australian children are born with Down syndrome each year.

"People with Down syndrome can have difficulties with cognitive function that can impact on their memory and ability to communicate," Dr Leonard said

"There aren't any medicines currently available to assist in improving cognitive impairment for people with Down syndrome so this study seeks to address this gap."

The new study, which involves several other institutions and clinical

sites across Australia, is looking at the potential of a compound called BTD-001 to improve memory, learning and communication for people with Down syndrome.

BTD-001 is a new formulation of a drug which was discovered more than 50 years ago. It has been shown to stimulate certain aspects of brain function, and has been used safely at the doses to be tested in this research study, by elderly people who have dementia, younger patients with developmental disabilities, and to treat respiratory disorders such as a cough.

The medicine is stirred into a fruit flavoured drink and is given over a 3 month period, with computerised tests taking place before, during and after the study period.

The study is supported by Balance

Therapeutics, Pty Ltd and is based on research conducted by Stanford University at the Stanford University Down Syndrome Research Center.

Around 90 people will participate in this study at various clinical centres throughout Australia.

People with Down syndrome aged from 13 to 35 years are invited to participate in the study.

Families wanting more information about participating in the study can contact:

www.compose21.com

or phone 9489 7790

New building update

We are excited to see our new building taking shape at the Perth Children's Hospital site at the QEII Medical Centre. The building is due for completion at the end of 2015.

Our building will be located at the northern end of the site, where the concrete floors have recently been poured. The glass and exterior panels are also going on, giving us a great feel for how our new home will look.



Donna Cross to join our team

Internationally recognised child health researcher Professor Donna Cross will join the Telethon Institute in 2014.

Professor Cross has an international profile in school health promotion intervention research and is a renowned campaigner for the wellbeing of children and young people.

Her research interests also include mental health and wellbeing of children and adolescents, bullying and cyber bullying, road safety, smoking cessation, and obesity prevention in young people.

Professor Cross will be appointed a Winthrop Professor at The University of Western Australia and will be located at the Telethon Institute.

Telethon Institute Director Winthrop Professor Jonathan Carapetis said he was thrilled to have a researcher of Professor Cross' calibre joining the Institute team.

"Professor Cross is one of the world's leading researchers into ways to help young people navigate a path to adult life free from the social and emotional traumas that are all too common these days," Professor Carapetis said.

"She has an outstanding research track record, but it is her ability to translate research evidence into policy and practice that really stands out. Her expertise is a perfect fit for the work we are doing, and will open up new directions at the Institute."

Professor Cross will join the Institute from Edith Cowan University where she is Professor of Child and Adolescent Health. She was Founding Director of the Child Health Promotion Research Centre at ECU from 2004-2011. ECU looks forward to developing additional research opportunities with the Institute and UWA through this appointment.

In 2012, Professor Cross was WA Australian of the Year and was made an Ambassador for Children and Young People by the WA Commissioner for Children and Young People.

Professor Cross will join the Institute in February 2014.



Hit kids brain cancer out of the park

Western Australia's baseball team the Perth Heat are playing a fundraiser match against the Melbourne Aces to support the Ethan Davies Scholarship for Brain Cancer Research.

The match is on December 29 and all proceeds from ticket sales will go towards the annual scholarship and the fight against childhood brain tumours.

Last year the scholarship raised \$150,000 to bring paediatric neurosurgeon Dr Sasha Rogers to the Institute to undertake innovative research in our brain tumour laboratory.

This year's fundraising efforts have raised nearly 70 percent of the goal amount needed to continue the scholarship for another year, so we still need your help!

Sunday 29 December, 7.20 pm
Barbagallo Ballpark, Cnr Nicholson & Wilfred Rd, Thornlie

Adults - \$10, children under 13 - \$5

BUY YOUR TICKETS ONLINE AT

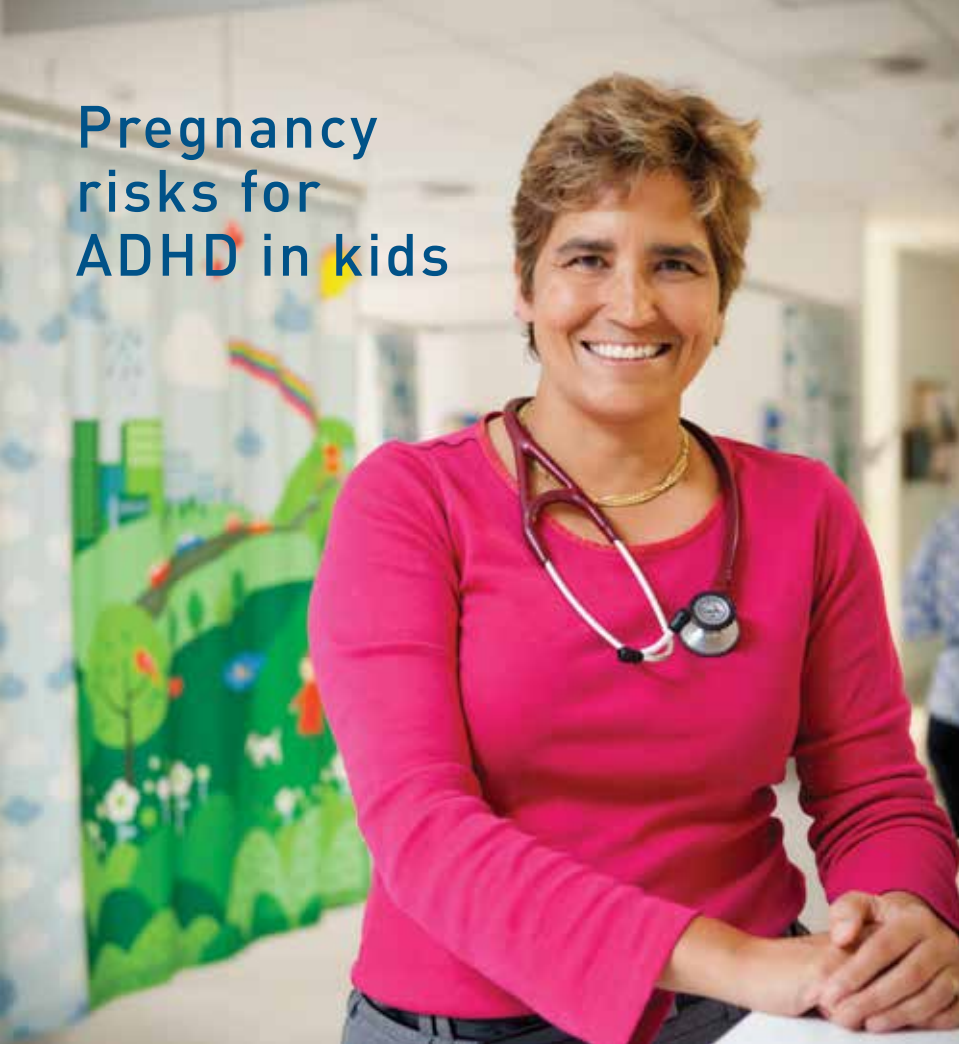
www.ethandaviesscholarship.com.au

or through the Ethan Davies facebook page

www.facebook.com/ethandaviesscholarship



Pregnancy risks for ADHD in kids



One of the largest population studies of Attention Deficit/Hyperactivity Disorder (ADHD) in children has revealed maternal smoking during pregnancy to be an important risk factor.

The research findings have been published in the latest edition of prestigious international journal *Pediatrics*.

The Institute's Dr Desiree Silva says the study looked at more than 12,000 West Australian children diagnosed with ADHD.

"Our study showed that, compared with mothers whose children did not have ADHD, mothers of children with ADHD were significantly more likely to be younger, single, smoked in pregnancy, had some complications of pregnancy and labour and were more likely to have given birth slightly earlier. It did not make any difference if the child was a girl or a boy," said Dr Silva.

She said there is a strong genetic link to ADHD, as well as some evidence of early environmental and maternal factors playing a part.

"We found that certain maternal factors did increase the risk of ADHD in the child with smoking during pregnancy being a significant one."

Dr Silva said smoking in pregnancy is an important risk factor for many health outcomes for the mother and the baby and women should be encouraged not to smoke during pregnancy.

"It's important that mothers recognise the risk of ADHD associated with smoking in pregnancy and take steps to reduce that risk," she said.

Dr Silva cautioned that the study had identified broad risk factors rather than causes and that the information could not be used to identify the factors associated with any particular child's disorder. She said further studies are needed to better understand the genetic and environmental risk factors of ADHD.

Congratulations

The Institute's Dr **Hannah Moore** and Associate Professor **Graeme Zosky** were awarded prestigious 2013 Young Tall Poppy Science Awards.

The Awards are presented by the Australian Institute of Policy and Science to recognise the achievements of Australia's outstanding young scientific researchers and communicators.

Congratulations Hannah and Graeme.

Dr **Hayley Christian** was a finalist in the Woodside Early Career Scientist of the Year category of the 2013 Western Australian Science Awards.

The awards recognise the outstanding work of the state's best scientists and science communicators in five categories.

Hayley is a public health researcher who focuses on developing, evaluating and translating strategies for increasing physical activity and wellbeing in adults and children, through built environment interventions.

Dr **Juli Coffin** was awarded the 2013 Dr Bob Elphick Medal for outstanding contributions to tobacco control.

Juli is an Associate Professor in the Institute's Centre for Research Excellence in Aboriginal Health and Wellbeing and Research Coordinator at Geraldton Regional Aboriginal Medical Services (GRAMS).

The award recognises Juli's contributions to tobacco control through research, teaching, policy development in WA and nationally, and leading important tobacco control projects within the Aboriginal community.

[JULI RECEIVING HER AWARD FROM WA DIRECTOR GENERAL OF HEALTH, PROFESSOR BRYANT STOKES.](#)



New hope for neglected disease

Our Director Professor Jonathan Carapetis has made an international contribution and commitment to the reduction of rheumatic heart disease. While rare in most developed countries, Australia has one of the highest rates in the world due to its prevalence within Aboriginal and Torres Strait Islander communities. He writes about rheumatic heart disease and the hope for the future of research into this neglected disease.

Rheumatic fever. A disease that means nothing to most Australians younger than 50 years. Older Australians, however, will either have suffered it themselves as a

child, or know someone else who did. Our recently retired two-time Prime Minister, Kevin Rudd, has the permanent damage resulting from childhood rheumatic fever, known as rheumatic heart disease, and has an artificial heart valve in his chest to prove it.

Alas, for young Indigenous people in this country, and young people in low and middle income countries around the world, there is no talk of rheumatic fever as something of the past. Just a few weeks ago, I encountered a 6 year old girl from a remote community in northern Western Australia whose story is all too typical. She went to bed several months ago with an aching ankle. By morning, she was in agony, her ankle hot, red, angry and swollen, a high fever raking through her body, early signs of pain and swelling appearing in the knee on her other leg and, worryingly, increasing difficulty breathing.

Within 24 hours, she had been flown thousands of kilometres south to

hospital in Perth, been subject to a barrage of tests, and started on treatment to control her pain, fever and failing heart. Over the next two weeks in hospital, her family was told that rheumatic fever had damaged the valves in her heart, so that instead of allowing blood to pump only one way, they leaked, placing heavy strain on the heart. It was touch and go as to whether she would need an urgent operation to repair the valves, but she made it through thanks to strong medical treatment and lots more tests. She was discharged back to the care of her family and the local health staff in her community, with instructions to return regularly for checkups and to make sure she received an injection of penicillin in her thigh every 4 weeks for at least the next 15 years, possibly longer.

Over the next 12 months, she felt better and better. The need to turn up for the regular penicillin injections seemed less urgent and when the paediatrician came



Good governance for good research

Flowing from our Strategic Plan, we have commenced a major project looking at governance structures around employee relations and policy development.

The Institute has been working with the Employee Relations team at Allens led by Eleanor Jewell, who have been providing quality pro-bono legal advice in these areas.

We extend our thanks to Allens for your valuable input to this project.



visiting for the checkups she could not be located. The result? Within 12 months she had another attack of fever, swollen, painful joints and breathlessness, and was flown urgently to Perth again. This time, the writing was on the wall, and she went for open heart surgery to repair the damaged heart valves. The outcome so far has been good – she feels well again, has been able to reduce her medication for heart failure. But she is not cured. The disease can come back again, so it is more important than ever that she gets those penicillin injections every month for many years.

But she, like Kevin Rudd, is one of the lucky few. Most children with rheumatic heart disease in the world do not have access to sophisticated, expensive cardiac surgery, and in a typical African country, a girl like her would be dead by now. This is the reality of a disease that has disappeared for most people reading this article, because it is one that goes hand in hand with poverty, poor living conditions and social injustice.

A few weeks ago, I delivered the 27th T Duckett Jones Memorial Lecture on rheumatic fever at the American Heart Association Conference in Dallas, commemorating a prominent 20th century American cardiologist who devoted his career to the diagnosis and management of rheumatic fever and rheumatic heart disease.

Dr Jones practiced in the United States in the 1940s when living a

standards put almost all children at risk of rheumatic fever. This widespread toll of death and disability drove efforts to cure and control the disease. Scientists identified the cause of disease (an immune reaction to infection with the common streptococcus bacterium), clinicians pioneered the use of penicillin to halt heart damage and public health practitioners determined the social determinants of rheumatic fever. By the 1970s economic growth, changing lifestyles and availability of penicillin had successfully reduced hospitalisation and death in developed countries. The 1992 Jones Memorial Lecture reflected a sense of triumph as rheumatic heart disease headed towards elimination.

We understand better now how tragically incomplete those successes in disease control were. Though rheumatic heart disease had disappeared from wards and research budgets in the developed world, the disease persists unabated in low resources settings. Throughout Northern Australia, Sub-Saharan Africa and Asia young people continue to live with, and die from, the devastating effects of heart valve damage.

It has been twenty years since the Duckett Jones lecture was devoted to rheumatic heart disease, reflecting relative scientific neglect. Happily, a vibrant new community of clinicians and researchers from low income countries warrant a

hopeful tone: new advocacy efforts, improved diagnostic guidelines for echocardiography and newly improved data about the global burden of disease.

And our part of the world is seen as a beacon of hope. Major research projects, national approaches to rheumatic heart disease control, and a new partnership between Australia and New Zealand to accelerate vaccine development provide a catalyst for local and international momentum to control rheumatic heart disease that is stronger now than any time in the last half century.

Our enthusiasm for renewed efforts must be tempered with reality of Australia's 897 deaths from rheumatic heart disease between 2007 and 2009. This is a preventable disease of poverty, inequality and social injustice. Nevertheless, new cases of rheumatic fever continue to occur, the overwhelming majority in Aboriginal and Torres Strait Islander children. The perilous social conditions which foster this disease – along with many others – are too common, too entrenched and too overlooked.

Find out more about our global collaborations for the control of rheumatic fever and rheumatic heart disease.

www.rheach.org



Raine's next generation

For more than 23 years, we've been closely following the health and wellbeing of the Raine Study participants. Now the next generation is coming to see us, as we host playgroups for the kids of the Raine participants.

Over 150 children have been born to Raine participants and the playgroups are a great opportunity for them to catch up with other Raine Study mums and dads as well as some of the Raine Study researchers.

The kids enjoy play dough, face painting from Fairy Rose and other fun activities - it's the Raine Study's way of giving something back to our participants.

Vitamin D levels linked to depression in young men

New research from the Telethon Institute shows that symptoms of depression in young men may be associated with low vitamin D levels.

The research findings have been published in the *Australian and New Zealand Journal of Psychiatry* and supports previous studies that identified the link between vitamin D levels and brain activity.

Vitamin D appears to be involved in brain function and it is thought to help to control symptoms of depression by altering chemical balances.

Lead researcher Dr Lucinda Black said the study examined the link between vitamin D levels and mental health in young adults from the long-term Raine Study.

“We asked participants to fill out a questionnaire designed to assess depression, anxiety and stress and we measured concentrations of vitamin D in their blood,” said Dr Black.

“We found that low vitamin D levels were associated with increased symptoms of depression in men.”

The study showed no such association with anxiety and stress nor did the study show a link between vitamin D and depression in the females tested.

Researchers at the Institute say they don't know exactly why the link exists between depression and vitamin D levels in young men but not young women and that further research is needed to examine the relationships further.



Will Mozart Make My Baby Smart? and other myth-busting tales of pregnancy and childhood by Andrew Whitehouse

Have you ever wondered if pregnant women really suffer from baby brain? Whether or not violent video games cause aggression? If sugar make kids hyper?

The Institute's Professor Andrew Whitehouse has released a light-hearted and entertaining book that delves into thirteen myths of pregnancy and childhood. Combining stories from modern parenting, tales from history, and scientific research, the book provides reassurance and light relief from the challenges of parenthood, and for people simply fascinated by the wonders of life, clear-eyed science and curious history.

The book is available from UWA Publishing at www.uwap.uwa.edu.au



PROFESSOR ANDREW WHITEHOUSE (LEFT) WITH HIS MUM NICCI AND TWIN BEN AT THE BOOK LAUNCH