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bulletin



*Menzies Research Institute
Director, Professor Simon Foote
with Research Fellow
Dr Velandai Srikanth.*

NHMRC Grants Success

The Menzies Research Institute was recently awarded more than one million dollars in funding for new research from the National Health and Medical Research Council (NHMRC). The NHMRC awards annual grants to support Australia's world-leading health and medical research.

Research fellow Dr Velandai Srikanth was awarded \$518,400 to examine the role of age-related brain changes in causing problems with walking, balance and cognitive abilities. His research will provide a better understanding of how changes to the brain can impact on our ageing population and subsequently help identify treatments to prevent the occurrence of falls and dementia. This research will be conducted through the Tasmanian Study of Cognition and Gait (TASCOG), a pilot that has been running during 2005.

The Institute will take its epilepsy research in a new direction with a grant of \$475,500 awarded to the Director, Professor Simon Foote. Professor Foote's research will identify new biologic pathways which may be interrupted with drugs to prevent seizures in people with epilepsy.

There is a wide range of drugs available to treat epilepsy but 30-40% of patients do not respond well to any of these drugs and continue to have seizures. Genetic studies will identify genes which may be used as potential targets for new therapies. The identification of pathways should also expand the use of future anti-epileptic drugs.

Associate Professor Alison Venn was awarded \$89,050 to investigate the link between the sex hormone oestrogen in high doses during puberty,

and the risk of breast cancer in later life. Large doses of oestrogen were used as a treatment to reduce the adult height of tall adolescent girls. The treatment dates back to the 1950s.

It was believed that treatment would help prevent psychosocial disadvantages that were thought to be associated with being "too tall". However, high doses of oestrogen may also have long term effects on breast density, which is an established risk factor for breast cancer. If hormonal factors in adolescence are shown to influence breast density, this will have implications for our understanding of the biology of breast development and other research into breast cancer.

The NHMRC has awarded \$292 million to fund more than 600 research projects in Australian universities, hospitals and medical research institutes. This major funding round will support health and medical research in 52 institutions across the country.

Infant sleeping environment the key to childhood asthma

New research has found that the sleeping environment of infants, in particular the type of bedding with which a baby sleeps, is associated with wheezing and asthma in children at seven years of age.

The research, published in the American Journal of Public Health in November, also found that environmental conditions in the home such as heating and recent painting can influence this relationship between bedding and asthma.

The indoor environment, particularly exposure to house dust mite (HDM)

allergens, is one area which has been implicated in changing rates of childhood asthma over time. Bedding is a significant source of HDM allergens and infants spend large amounts of time in bed.

A link between HDM allergen levels in infancy and subsequent asthma has not been clearly established. However composite bedding effects, taking into account bedroom environment, have not been previously studied.

This report found that composite infant bedding, or the combination of materials with which an infant sleeps, was associated with recent wheezing. Sheepskins, cocoons, synthetic pillows and synthetic quilts are all known to harbour high dust mite concentrations. As the number of these HDM-rich items used in the infant sleeping environment increased, so too did the risk of childhood wheezing and asthma at age seven.

The report also found that other aspects of the bedroom environment, namely recent painting, all types of bedroom heating and the absence of carpet in the

bedroom, all exacerbated the adverse effect of HDM-rich bedding on asthma risk. Past work has indicated some possible mechanisms for these findings. Airborne toxins from recent painting may inflame airways and increase airway sensitivity to allergens. Heating in bedrooms is known to increase the HDM allergen load in bedding. The effect of the absence of carpet is more difficult to explain, but it is possible that the lack of carpet as a dust mite habitat may increase the relative importance of bedding as a HDM allergen source.

These findings emphasise the important role of the infant sleeping environment in the development of asthma. They indicate the need for a greater public health effort to ensure optimal infant sleeping environments that will assist in asthma prevention.

The findings also highlight the importance of studying different parts of the infant sleeping environment not in isolation but in combination with each other. They support current recommendations that low allergen bedding should be used for infants and that bulky items such as pillows and quilts should not be recommended for infants under 12 months because of the increased risk of sudden infant death.

For more information on infant bedding recommendations, visit these websites:

www.nationalasthma.org.au
www.sidsandkids.org



MS research o

Multiple sclerosis (MS) research carried out in Tasmania has been recognised as one of the highest quality projects funded by the National Health and Medical Research Council (NHMRC). The NHMRC has published a booklet called "10 of the Best", which recognises ten of the most successful health and medical research studies in the funding period from 1999 to 2003.

Research into multiple sclerosis, carried out by the Menzies Research Institute in collaboration with the Walter and Eliza Hall Institute, the Howard Florey Institute and the University of Melbourne, was included in the top ten.

One of Menzies first students now a Professor



Professor Anne-Louise Ponsonby

The head of the Menzies Research Institute's Immune Disorders and Neuro-Epidemiology unit, Anne-Louise Ponsonby, has been offered a personal chair at the Institute, which is a promotion to Professor. This is a 0.2 FTE appointment, which she will hold in conjunction with her position at the Murdoch Childrens' Research Institute and affiliation with the Australian National University.

Anne-Louise has worked with the Institute for the past seventeen years, starting as a PhD student when it opened its doors in 1988. She has received international recognition for her epidemiological research across a number of areas.

She took a lead role in three significant scientific achievements of the Institute, namely identifying the link between sleeping position, unsafe sleeping environments and sudden infant death syndrome; providing new knowledge on the link between infant bedding and asthma; and providing new knowledge on early life environment and susceptibility to multiple sclerosis.



Student profile – Charlotte McKercher

A new PhD student at the Menzies Research Institute is exploring the relationship between physical activity and mental health.

Charlotte McKercher will examine whether physical activity in childhood and adulthood protects against various mental health outcomes, such as depression, anxiety and substance abuse, as part of the Childhood Determinants of Adult Health (CDAH) study.

Charlotte has a Bachelor of Music and an honours degree in psychology. Her honours project looked at cognitive factors that influence performance anxiety in musicians.

"While I was working in the University's Discipline of Psychiatry I began to develop an interest in epidemiology. I was doing some population based research examining suicide so I enrolled in a course at the Menzies Research Institute to broaden my skills," she said.

Charlotte has a diverse background, including experience working as a musician, concert manager, editor and research assistant, and was previously employed at the Institute coordinating the Tasmanian Epilepsy Register Study. She currently assists with the T-Bone and TASCOG studies.

This PhD feels like a natural progression of my career as it will allow me to combine my research experience with my background in psychology and psychiatry. The study facilities provided by the Institute are first class and the support provided by my colleagues makes it a really enjoyable work environment," she said.

One of the best

This research, which was carried out in Tasmania, identified two gene regions that may be responsible for causing the disease, offering hope for the discovery of new treatments. Multiple sclerosis is a debilitating condition affecting around 15,000 Australians, including children and the elderly. It costs the community as much as \$660 million per annum.

Ongoing research aims to identify potential new therapies to prevent plaque formation in susceptible patients and to gain a greater understanding of how genes and the environment interact to cause this disease.





Research Australia CEO Dr Christine Bennett, speaking at "Thank You" Day 2005.

"Thank You" Day Celebration

One hundred researchers, volunteers, study participants and supporters gathered to be thanked and in turn show appreciation for the amazing achievements of Australia's health and medical researchers at a morning tea to celebrate Research Australia's "Thank You" Day 2005. The event was jointly hosted by the University of Tasmania's Faculty of Health Science and the Menzies Research Institute.

The Literacy Pathways study, which is examining the role vision coordination plays in low literacy among some children, was showcased at the event, which this year had the theme "Research today for a better future for our children". Children present signed a giant "Thank You" card by painting a handprint. The card has been travelling to Thank You Day events all over Australia.

Research Australia is a national alliance of over 160 members, supporters and donors standing together to make health and medical research a higher national priority.

Bride of the Year

Communities on the north-west coast of Tasmania again showed their support for the Menzies Research Institute at the 2005 Bride of the Year competition.

Mrs Bev Twibell of Devonport has been organising the contest for more than ten years. This year nine brides took to the stage to relive memories of their wedding day and raise money for research into childhood diseases. Over the past decade the event has raised more than \$68,000 for Infant Health research at the Institute.

Professor Simon Foote attended the event as guest speaker to update the

audience on new research at the Institute and personally thank them for their generosity. "The spirit and generosity of the north-west community and local businesses is to be commended. The money raised at this event will greatly assist us in our research into the causes and prevention of common diseases," Professor Foote said.

Mrs Twibell was this year added to the Tasmanian Honour Roll of Women in recognition of her significant contributions to the Tasmanian community, particularly her fundraising efforts for a variety of charitable causes.



Professor Simon Foote and Mrs Bev Twibell

Grants

The following grants have been awarded to the Menzies Research Institute since the last issue of the Bulletin.

Physiotherapy Research Foundation.
Callisaya M*, Srikanth V*, McGinley J, Schmidt M*, Blizzard L*.

Ageing, gait and falls risk – a population-based study. \$5,000

National Health and Medical Research Council. Foote S*, O'Brien T, McKinnon R.

Finding better targets for epilepsy treatment. \$457,500

National Health and Medical Research Council. Srikanth V*.

The Tasmanian Cognition and Gait Study (TASCOG). \$518,400

National Health and Medical Research Council. Venn A*, Kavanagh A, Gertig D, Jordan, H*.

Do hormones in adolescence affect adult breast density? \$89,050

Publications

The following papers from the Menzies Research Institute have been published since the last issue of the Bulletin.

Charlesworth J, Dyer TD, Stankovich J, Blangero J, Mackey D, Craig JE, Green CM, Foote S*, Baird PN, Sale MM.* [Linkage to 10q22 for maximum intraocular pressure and 1p32 for maximum cup-to-disc ratio in an extended primary open-angle glaucoma pedigree.](#) *Investigative Ophthalmology and Visual Science* 2005;46:3723-3729.

The purpose of this study was to identify genetic contributions to primary open-angle glaucoma (POAG) through investigations of two quantitative components of the POAG phenotype. Significant linkage has been identified for maximum intraocular pressure and suggestive linkage for vertical cup-to-disc ratio. Identification of genes contributing to the variance of these traits will enhance understanding of the pathophysiology of POAG as a whole.

Ding C, Cicuttini F, Scott F, Stankovich J, Cooley H, Jones G*.* [The genetic contribution and relevance of knee cartilage defects: case control and sib pair studies.](#) *Journal of Rheumatology* 2005;32(10):1937-1942.

This study aimed to describe the differences in knee cartilage defects between offspring of subjects with at least one parent with a total knee replacement for severe primary knee osteoarthritis (OA) and controls; and to estimate the heritability of knee cartilage defects in sib-pairs. It was a case-control study of 186 matched pairs and sib-pair study of 128 subjects from 51 families within the case-control study. It was found that knee cartilage defects are common, have a genetic component that is linked to the genetic contribution to knee pain and bone size, and may have a role in the genetic pathogenesis of knee OA.

Jones G, Dwyer T*, Hynes KL*, Parameswaran V, Greenaway T.* [Vitamin D insufficiency in adolescent boys in Northwest Tasmania: prevalence, determinants and relationship to bone turnover markers.](#) *Osteoporosis International* 2005;16:636-641.

There are limited data on vitamin D insufficiency in healthy children. The aim of this study was to describe the prevalence and determinants of vitamin D insufficiency and its association with bone turnover in adolescent boys. Sun exposure, physical activity, vitamin D stores and bone turnover were assessed. It was found that vitamin D insufficiency is common in healthy adolescent boys in winter, is primarily derived from sports-related sun exposure, and is associated with bone turnover markers.

Pyett P, Rayner J, Venn A, Bruinsma F, Werther G, Lumley J.* [Using hormone treatment to reduce the adult height of tall girls: are women satisfied with the decision in later years?](#) *Social Science in Medicine* 2005;61:1629-1639.

Treatment with synthetic oestrogens to reduce adult height in order to reduce psychosocial problems associated with tall stature has been available for tall girls since the 1950s. Little is known about the long-term outcomes. This retrospective cohort study found that while untreated women were almost unanimously glad they were not treated (99.1%), no matter how tall they became, 42.1% of the treated women expressed dissatisfaction with the decision that was made. Dissatisfaction was related to whether or not the girls had an active say in the decision-making, negative experiences of the assessment or treatment procedures, side effects experienced during the treatment period or later side effects women believed were associated with the treatment.

Sakthianandeswaren, A, Elso CM, Simpson K, Curtis JM, Kumar B, Speed T, Handman E, Foote S.* [The wound repair response controls outcome to cutaneous leishmaniasis.](#) *Proceedings of the Academy of Natural Sciences of Philadelphia* 2005;102(43):15551-15556.

Chronic microbial infections are associated with fibrotic and inflammatory reactions known as granulomas showing similarities to wound-healing and tissue repair processes. Three leishmaniasis susceptibility loci which exert their effect independently of T cell immune responses have been previously mapped. This paper shows that the wound repair response is critically important for the rapid cure in murine cutaneous leishmaniasis caused by *Leishmania major*. It is concluded that the rate of wound healing is likely to be an important component of innate immunity involved in resistance to cutaneous leishmaniasis.

Salmon J, Timperio A, Cleland V, Venn A*.* [Trends in children's physical activity and weight status in high and low socioeconomic areas in Melbourne, Victoria: 1985-2001.](#) *Australian & New Zealand Journal of Public Health* 2005;61:337-342.

This study aimed to examine trends in active transport to and from school, in school sport and physical education (PE), and in weight status among children from high and low socio-economic status (SES) areas in Melbourne, Victoria, between 1985 and 2001. Cross-sectional survey data and measured height and weight from 1985 and 2001 were compared for children aged between 9-13 years within high and low SES areas. It was found that declines in active school transport and PE have

occurred at the same time as increases in overweight and obesity among Australian children. This highlights the importance of these activities as public health priorities in Australia. Current inequities in school sport and PE and in prevalence of overweight and obesity by area-level SES also need to be addressed.

Trevillian L, Ponsonby AL, Dwyer T*, Kemp A, Cochrane J*, Lim LL-Y, Carmichael A.* [Infant Sleeping Environment and Asthma at 7 Years: A Prospective Cohort Study.](#) *American Journal of Public Health* 2005;95(12).

Refer to article on page 2.

Wluka A, Ding C, Jones G*, Cicuttini F.* [The clinical correlates of articular cartilage defects in symptomatic knee osteoarthritis: a prospective study.](#) *Rheumatology* 2005;44(10):1311-1316.

The objective of this study was to determine whether articular cartilage defects are associated with cartilage loss and joint replacement in subjects with symptomatic knee osteoarthritis (OA). One hundred and seventeen subjects with symptomatic knee OA underwent magnetic resonance imaging of their dominant knee at baseline and 2 years later. Cartilage defects were identified as prevalent in each knee compartment. Occurrence of joint replacement by 4 years was documented. It was concluded that articular cartilage defects are associated with disease severity in knee OA and predict patellar cartilage loss and knee replacement.

Zhai G, Ding C*, Stankovich J, Cicuttini F, Jones G*.* [The genetic contribution to longitudinal changes in knee structure and muscle strength: A Sibpair Study.](#) *Arthritis and Rheumatism* 2005; 52(9):2830-2834.

This paper discusses the heritability of longitudinal changes in knee cartilage volume, chondral defects, subchondral bone size, and lower limb muscle strength. Early longitudinal changes in knee structures of relevance to later OA, such as changes in medial tibial cartilage volume, lateral tibial bone size, progression of chondral defects, and muscle strength, were found to have high heritability, most likely reflecting a strong genetic component and suggesting their potential to be studied in quantitative trait linkage and association analysis.

This publication was incorrectly cited in the last edition of The Bulletin:

Stankovich J, Bahlo M, Rubio J, Wilkinson C, Thomson R, Banks A*, Ring M, Foote S*, Speed T.* [Identifying nineteenth century genealogical links from genotypes.](#) *Human Genetics* 2005;117(2-3):188-99.

* *Menzies researchers.*

2006 Menzies Research Institute Golf Classic

On Friday 3 March, the Tasmania Golf Club will host more than 170 participants for the 2006 Menzies Research Institute Golf Classic. The 2006 Golf Classic is again presented by Corporate Express Office Equipment and is raising funds to support the Institute's research into the prevention of osteoarthritis through the Tasmanian Older Adult Cohort (TasOAC) study.

During the day each Golf Classic participant will be treated to 18 holes of golf on one of Australia's most spectacular courses and can enjoy the company of a celebrity caddy (see below), indulge in quality food and beverages, and relax with colleagues and friends.

The golfing event provides businesspeople with a variety of unique networking, marketing and hospitality opportunities, ensuring everyone involved in the day walks away feeling a winner.

Players will also have the privilege of meeting prominent sports physician and media personality, Dr Peter Larkins, who will be special guest at the event. Dr Larkins has been practicing in sports and exercise medicine for over 20 years and has been team doctor for many professional teams including the Australian Track and Field, Australian Cricket and Triathlon teams and both Geelong and Adelaide in the Australian Football League (AFL). His insightful injury commentaries can be seen on Channel Nine's AFL coverage.



The Master of Ceremonies on the day will be award winning journalist and sports presenter Tony Jones. Over the past 18 years, Tony has covered all of Australia's major sporting events on Channel Nine. Tony has received numerous awards for his sports reporting and news-breaking columns. Over the years Tony has met many sporting heroes and continues to provide an interesting insight into the personalities and influences in professional sport.

The 2006 Menzies Research Institute Golf Classic is proudly sponsored by:



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For more information, event details and to register your interest in attending, visit the Institute's website www.menzies.utas.edu.au or contact Bill Avery, Community Relations Officer, on 6226 7707.

Menzies Research Institute

golf Classic

DATE: Friday 3 March 2006
CLUB: Tasmania Golf Club
TEE OFF: 9.30am shot gun start
Regular updates @ www.menzies.utas.edu.au

Celebrity Caddy Auction

Have you ever thought you would like to meet a particular Tasmanian personality or local business leader? Maybe you have wondered what it is like being in the media or admire someone's efforts as a leading Tasmanian.

You now have the opportunity to meet such a person and have them support your team at the 2006 Golf Classic! Conversation, fun and a picturesque stroll around the golf course with your team members is the caddy's role at the event and by simply registering a silent bid online, you have the chance to secure a celebrity caddy to cheer your team on.

Go to www.menzies.utas.edu.au today to register your team and place a bid for a caddy!

Valued supporters (August - October 2005): We thank our supporters for their generous contribution

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