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bulletin



Menzies Research Institute welcomes new Director

University of Tasmania Vice-Chancellor Professor Daryl Le Grew joined with Menzies Research Institute Chairman Dr Dan Norton in early May to announce the appointment of Professor Simon Foote as the new Director of the Menzies Research Institute.

Professor Foote has come from the Genetics and Bioinformatics Division at the Walter and Eliza Hall Institute of Medical Research in Victoria and has a strong track record in genetics and the susceptibility to disease. He has collaborated with the Institute's genetic staff in the past on the successful research regarding genes that influence Multiple Sclerosis.

The appointment of an eminent researcher like Professor Foote is an important step for the continuing growth and development of the Menzies Research Institute.

I am now in my first month as Director of the Menzies Research Institute. It gives me considerable pleasure in being appointed to this position as I have had a long association with the Institute. The Institute is one of Australia's foremost epidemiological research organisations and has carried out an impressive body of work under the leadership of Professor Terry Dwyer.

My expertise lies in a slightly different field. I am a geneticist and I work on the response that people mount to combat infectious disease. I also work on the genes that predispose people to Multiple Sclerosis. This work has been done in collaboration with the Menzies Research Institute.

The Menzies Research Institute faces a bright future. There is a new building being planned which will house the Institute and there are plans for broadening the breadth of the research being done here. I would like to see a strengthening of population health research and the addition of a larger clinical component to the already strong clinical research conducted by the Institute.

Of course, being a geneticist I would also like to see an expansion of the genetics program. Both the Institute and Tasmania as a whole offer exciting opportunities to find genes underlying some of the common diseases that beset our community. The Tasmanian population is ideal for genetic studies because changes in genes giving rise to disease tend to be concentrated in extended families. As many amateur genealogists will attest, it is easier to generate large pedigree trees in Tasmania than in other places.

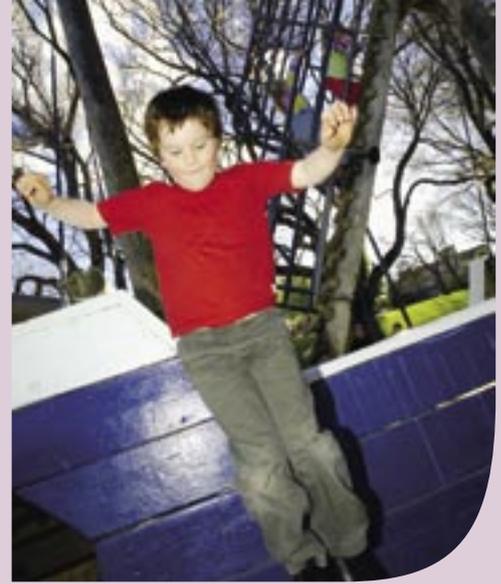
Recently we thanked our volunteers for all the work they have donated to the Institute. This was a remarkable experience for me as I have never worked in a research institute where the community is so generous with their time in supporting research. I thank all of you who offer your time to the Institute.

Professor Simon Foote, *Director*

Physical Activity Feature

Physical activity is important in the prevention of obesity, cardiovascular disease, diabetes and some cancers. Health authorities in Australia have identified that many Australians are not getting enough physical activity for their health needs.

Much of the Menzies Research Institute's research demonstrates that physical activity is an essential ingredient to assist in the development of a healthy lifestyle. This special edition features just some of the activities involving physical activity currently underway at the Institute.



New technology measures physical activity

The Menzies Research Institute will receive exciting new equipment thanks to a grant from the NHMRC's Equipment Grants program.

The Institute successfully collaborated with the University of Tasmania's Discipline of General Practice, Public Health and the Northwest Clinical School to obtain a grant to purchase accelerometers for use in studies to measure physical activity.

Accelerometers give more detailed data than pedometers and provide an objective measure of physical activity. Frequency, intensity and duration of activity can be measured, and patterns of activity can be assessed minute by minute through the day. Importantly, accelerometers are capable of detecting the intermittent activity patterns characteristic of small children.

The memory capacity of the accelerometer is much larger than that of pedometers. One model can record activity for 22 consecutive days, so the device does not need to be reset each day and there is no risk of measurement error through a subject's activity levels exceeding available memory. The device cannot be reset accidentally by participants, which is particularly important for use with children.

As far as we know, there are currently no accelerometers being used in research in Tasmania. The ability to access this equipment will greatly increase the

capacity of the University to produce high quality physical activity research.

At the Institute, we plan to use the accelerometers in an intervention study using individualised bone density feedback to mothers to improve diet and physical activity behaviours in their children, and also in a longitudinal study of bone development in children. This grant will allow us to gain experience in the use of this technology and will provide feasibility data to aid access to other funding opportunities.

Menzies staff walking the talk

Much of the Menzies Research Institute's research demonstrates that physical activity is an essential ingredient to assist in the development of a healthy lifestyle. In response, the Institute's Executive Management Group encourages all

staff to engage in physical activity during their working week.

Workplace physical activity initiatives at the Menzies Research Institute include:

- The Menzies Movers netball team competes weekly in an indoor netball roster. This team of women have been playing for more than a year and won last season's grand final!
- Staff entered three teams in the Premier's Physical Activity Council Triathlon in March. There was fierce competition between the Menzies teams, with Menzies Maulers coming in before the Menzies Outliers and Magnificent Menzies.
- The Menzies Mermaids are a group of staff who regularly swim at the Hobart Aquatic Centre during their lunch hour.
- There is a lunchtime walking group who pound the streets of Hobart to



Menzies Research Institute staff participated in the Premier's Physical Activity Council Triathlon

nudge their daily step count towards 10,000 steps.

- There is also a dedicated group of staff who gather for friendly and frequent games of squash.

What initiative could you take in your workplace to increase your physical activity and wellbeing?



Tasmania Police put through their paces

Around 200 Department of Police and Public Safety (DPPS) employees have now completed phase one of the *Pacing the Police* program, in partnership with the Menzies Research Institute.

Launched in July last year, *Pacing the Police* focuses on promoting physical activity within the DPPS and the general community. Between December 2004 and March 2005, participating staff from the DPPS underwent a consultation with a research nurse from the Institute and completed a range of questionnaires about their usual physical activity.

Associate Professor Alison Venn said: "Factors such as high blood pressure, high body mass index (BMI) and insufficient physical activity are known risk factors for coronary heart disease and diabetes. After their consultation, participants were sent a feedback letter explaining their results. Where participant values were categorised as

higher than normal, we advised that they consult with their general practitioner," she said.

Participant and DPPS Director of Corporate Services, Frank Ogle, says his feedback indicated that he had higher than normal blood pressure and needed to reduce his weight.

"I really value this feedback provided to me by the Menzies Research Institute. It made me assess my current lifestyle and how I may be able to make some simple changes to improve my health," Mr Ogle said.

"Wearing my pedometer and reading the 'Steps to Better Health' booklet has helped me to increase and monitor my physical activity at work and home. I've also been more careful with my diet and have changed what I am eating. I feel more alert at work and seem to be sleeping better at night," he said.

Phase two of *Pacing the Police* will begin 12 months after original consultations, in December 2005. Researchers at the Institute will assess whether there have been any significant changes in weight, girth and blood pressure since the first consultation. They will also assess whether the program has resulted in a significant increase in physical activity levels.



Stepping in the right direction

There are many steps to better health such as improving your diet, managing your stress, and maintaining a healthy weight. But the single most important step you can take for better health, besides to quit smoking, is to get physically active. Research shows that low fitness is just as detrimental to your health as cigarette smoking.

Did you know?

Research suggests that healthy young adults usually take an average 7,000 to 13,000 steps per day and healthy older adults 6,000 to 8,500 steps per day. Approximately 3,500 to 5,000 steps per day is common for those with disabilities or chronic illnesses. In summary, current evidence suggests that a good target to aim for is at least 10,000 steps a day.

What benefits can you get from being active?

- Reduced risk of heart disease, high blood pressure and diabetes
- More energy
- Better weight control
- Brighter mental outlook
- Less chance of colds or flu
- Better quality of life
- Increased self-esteem
- Less stress
- Reduced risk of colon and breast cancer
- Better sleep
- Healthy and strong bones, joints and muscles



Are you doing enough physical activity each day?

The key to adding more physical activity to your life may be as easy as wearing a pedometer. The pedometer is a simple device that measures your physical activity by counting the number of steps you take. Even though the pedometer is simple in design and use, it can be a powerful exercise motivator.

Pedometers are available for sale from the Menzies Research Institute. The Yamax pedometer is currently the most accurate on the market. There are two models – the standard measures steps only (\$40) and the executive measures steps, calories and distance (\$49).

The 'Steps to Better Health' booklet used by Pacing the Police participants, which offers suggestions and motivational strategies designed to assist participants in increasing their physical activity, is also available for purchase (\$8.50). All proceeds support research at the Institute.

Controlling non-communicable diseases in Viet Nam

Researchers from the Menzies Research Institute have received a US\$100,000 grant from the Atlantic Philanthropies to cooperate with Vietnamese health institutions in building their capacity in the area of non-communicable disease (NCD) surveillance.

Viet Nam is located in the Western Pacific Region of the World Health Organization (WHO), and this region has experienced a rapid increase in NCDs such as cardiovascular disease, cancer, respiratory disease and diabetes. This increase has reached the stage where the burden of these diseases now outweighs that of communicable diseases.

NCDs that were primarily disorders of elderly and wealthy societies have developed into pandemics affecting millions of disadvantaged and increasingly younger people. The Prime Minister of Viet Nam provided the needed impetus for action by issuing a report in 2002 calling for a reduction in the prevalence of key NCD indicators.

The Institute has excellent relationships with many health institutions in Viet Nam



and across the Western Pacific Region, including WHO. A study conducted by the Institute in 2004 confirmed WHO's perception that a more unified and integrated system of non-communicable disease surveillance is needed in Viet Nam in order to control the epidemic of NCDs.

To address this issue and the Prime Minister's mandate, the Vietnamese

Ministry of Health, in conjunction with the Institute and WHO, conducted a 2-day workshop that brought together key persons from various institutions that are involved in NCD surveillance, control and/or prevention in Viet Nam. Representatives attended from the Ministry of Health, medical universities, schools of public health, national health institutes (such as heart, endocrinology, cancer, nutrition) and other institutions.

The Institute is also working with Can Tho University of Medicine and Pharmacy to improve its capacity in NCD surveillance. Staff from the medical university are conducting a WHO-endorsed NCD survey known as STEPS. As a designated WHO collaborating centre, the Institute has assisted with the development of the STEPS protocols and methods.

The immediate outcome from the workshop was a document that listed key recommendations for the establishment of an integrated and sustainable NCD surveillance system. Recommendations which include specific NCD measures and indicators, sources of data, responsible agencies, and periodicity of reporting, were submitted to the Ministry of Health in early 2005 for approval. A follow-up workshop is planned, and will ensure that all the elements of the surveillance system are in place.

Parkinson's disease focus of new Tasmanian study

New research at the Menzies Research Institute and the Howard Florey Institute in Melbourne will examine the genes that cause Parkinson's disease in Tasmanian families.

The Tasmanian Parkinson's Disease Research Project hopes to examine the contribution of known Parkinson's disease-causing genes in families who have two or more living members with the disease, and to discover other genes that have not been linked to the disease before.

Parkinson's disease is a common brain disease, second in frequency only to Alzheimer's disease in people over

the age of 60. It is estimated that at least 100,000 Australians suffer from Parkinson's disease. Associate Professor Alison Venn says it is caused by a combination of a person's genetic make-up and environmental factors.

"Parkinson's disease sometimes occurs in a familial form, that is, it runs in a family. Identifying inherited risk factors will provide a better understanding of the way that Parkinson's disease develops," she said.

Because of the age-related prevalence of Parkinson's disease and the population demographics of Tasmania, it is a significant disease within the state. Tasmania is an ideal place to carry out this research, as genealogical records are extensive and the family trees of people with the disease can be identified.

Specialist Neurologist Professor Mal

Horne of the Howard Florey Institute and St Vincent's Hospital in Melbourne said: "Parkinson's disease was once thought to be the classic non-hereditary disease. However nine genes that play a part in its development have now been identified.

"Family-based linkage studies such as this are of great value. Confirming the genes involved is an important step towards preventing and treating this debilitating disease," he said.

The project is currently recruiting Tasmanian families that have at least two living members affected with Parkinson's disease. Participants complete a telephone interview about their health in relation to Parkinson's disease, and may be invited to participate further in the study by filling out a questionnaire and attending a specialist clinic.

Publications

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

*Barnes C, Newall F, Ignjatovic V, Wong P, Cameron F, *Jones G, Monagle P. Reduced bone density in children on long-term warfarin. Pediatric Research 2005;57(4):578-81.*

The long-term effect of warfarin on bone density of children is not known. We performed a case control study survey of bone density in children on long-term warfarin compared with randomly selected controls. There was a marked reduction in bone mineral apparent density of lumbar spine between patients and controls. The etiology for the reduced bone density is likely to be multifactorial, however, screening of children on long-term warfarin for reduced bone density should be considered.

**Ding C, Cicuttini F, Scott F, Cooley H, *Jones G. Knee structural alteration and body mass index: a cross-sectional study. Obesity Research 2005; 13(2):350-61.*

This study aimed to describe the associations among BMI, knee cartilage morphology, and bone size in adults. BMI was found to be significantly associated with knee cartilage defect scores and prevalence. This study suggests that knee cartilage defects and tibial bone enlargement are the main structural changes associated with increasing BMI particularly in women. Preventing these changes may prevent knee osteoarthritis (OA) in overweight and obese subjects.

**Ding C, Cicuttini F, Scott F, Cooley H, *Jones G. Association between age and knee structural change: a cross-sectional MRI-based study. Annals of the Rheumatic Diseases 2005;64(4):549-55.*

This study aimed to describe the associations between age, knee cartilage morphology, and bone size in adults. It concluded that the most consistent knee structural changes with increasing age are increase in cartilage defect severity and prevalence, cartilage thinning, and increase in bone size with inconsistent change in cartilage volume. Longitudinal studies are needed to determine which of these changes are primary and confirm their relevance to knee OA.

**Ding C, Garner P, Cicuttini F, Scott F, Cooley H, *Jones G. Knee cartilage defects: associations with radiographic osteoarthritis, joint surface area,*

cartilage volume and collagen breakdown. Osteoarthritis and Cartilage 2005;13(3):198-205.

The objective of this study was to generate hypotheses regarding the associations between knee cartilage defects and knee radiographic osteoarthritis (ROA), cartilage volume, bone size and type II collagen breakdown in adults. It was concluded that osteophytes and increasing knee bone size may be causally related to knee cartilage defects. Furthermore, knee cartilage defects may result in increased cartilage breakdown leading to decreased cartilage volume and joint space narrowing suggesting an important role for knee cartilage defects in early knee OA.

**Jones G, Ma D. Skeletal age deviation assessed by the Tanner Whitehouse 2 method is associated with bone mass and fracture risk in children. Bone 2005;36:352-7.*

The aim of this population-based case-control study was to describe the association among skeletal age deviation (SAD), bone density, and upper limb fracture risk in male and female children aged 9-16 years. SAD is positively associated with measures of bone strength and negatively associated with upper limb fracture risk (especially those of the hand) in children. SAD is simple to measure and gives additional information regarding bone health and fracture risk in children.

**Winzenberg T, Oldenburg B, Frendin S, *Jones G. Effects of bone density feedback and small group education on osteoporosis knowledge and self-efficacy in premenopausal women. Journal of Clinical Densitometry 2005;8(1):95-103.*

In this 2 year randomized controlled trial, we examined the effect of bone mineral density feedback and two different educational interventions on osteoporosis knowledge and self-efficacy in 470 women aged 25-44 years. Both the educational interventions and bone density feedback increased osteoporosis knowledge but not self-efficacy over 2 years. Women with children or who worked full time have decreased osteoporosis self-efficacy, suggesting that this group should be a specific target for future interventional strategies.

**Winzenberg T, Riley M, Oldenburg B, Frendin S, *Jones G. Sociodemographic factors associated with calcium intake in premenopausal women: a cross-sectional study. European Journal of Clinical Nutrition 2005;59(3).*

It was found that education level, calcium-specific osteoporosis knowledge and self-efficacy were all independently associated with calcium intake. Women

who have lower levels of education, who are in households where the main financial provider is unemployed, who are smokers, and those with low levels of calcium-specific self-efficacy and knowledge are at risk of not achieving adequate calcium intake. This information will assist targeting of public health strategies aimed at improving the calcium intake of premenopausal women.

**Zhai G, Cicuttini F, *Srikanth V, Cooley H, *Ding C, *Jones G. Factors associated with femoral head cartilage volume as measured by magnetic resonance imaging (MRI): Tasmanian Older Adult Cohort Study (TASOAC). Arthritis and Rheumatism 2005; 52(4):1069-76.*

We studied a cross-sectional sample of 151 randomly selected subjects from the Tasmanian Older Adult Cohort Study. A MRI scan of the right hip was performed to determine femoral head cartilage volume, cartilage thickness, and size. An radiograph of the pelvis was performed and scored for evidence of osteoarthritis OA in the right hip. The study concluded that femoral head cartilage volume and thickness have modest but significant construct validity when correlated with radiographic findings. Furthermore, the generally stronger associations with volume compared with radiographic OA suggest that MRI may be superior at identifying risk factors for hip OA decrease in post-scan processing time.

Grants

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

Royal Hobart Hospital Research Foundation
**Srikanth V, Reutens D, Phan T.*

Evaluating the effects of cerebral white matter lesions on cognition, gait and balance in a population-based sample of older Tasmanians. \$17,093

Royal Hobart Hospital Research Foundation
**Venn A, *Dickinson J, *Srikanth V, Rubio J.*

The Tasmanian Parkinson's Disease Research Project: a feasibility study. \$16,216

UTAS – NHMRC Equipment Grant
**Jones G, Nelson M, Walker J, Taylor R, *Venn A, Shaw K, *Winzenberg T.*

Accelerometers for Measurement of Physical Activity. \$25,000

Mazda Foundation *Dickinson, J. Tasmanian Prostate Cancer Study. \$18,500

**Menzies researchers*

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*Gifts of remembrance
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honour of:*

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 Mrs M Mundy
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Volunteer thankyou

The Institute celebrated the contributions of its volunteers with a special gathering during National Volunteer Week in May. Board Director Sir Guy Green and Lord Mayor of Hobart Rob Valentine (below left) were special guests at the function. Jean Keil (below right) volunteers for one afternoon per week in the genealogy office. Volunteers were presented with a gerbera in acknowledgement of their contributions.



Agfest success

Collex and the Menzies Research Institute again teamed up to present a successful display at Agfest in early May. The free blood pressure and body mass index checks offered by Institute staff were very popular, as was the school competition to "guess how many steps it is to the top of Mt Everest?" (below). Hundreds of "stress balls" in the shape of the Collex mascot, Hillary the Hippo, were sold during the three day event, with all proceeds going to diabetes research at the Institute.



Menzies
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Menzies Research Institute, University of Tasmania
17 Liverpool Street, Hobart, Tasmania 7000

Phone: 03 6226 7700 Fax: 03 6226 7704 www.menzies.utas.edu.au



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All donations are directed to the Institute's research projects. All donations over \$2 are tax deductible.

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Student Profile – Stella Foley

When studying Honours in Human Movement at the University of Tasmania, Stella Foley discovered an unexpected enthusiasm and excitement for research, and decided that a “standard” job at the end of her degree was not for her. A fellow sport science graduate had gone on to postgraduate study at the Menzies Research Institute and she soon became very keen to follow a similar path.

Stella said: “I studied a Bachelor of Human Movement, and majored in sport science. In my final year I completed my Honours in the theme area of population health. Choosing an area to become involved with at the Institute was a difficult decision! The musculoskeletal area is now where I feel I can best apply my knowledge,” she said.

“My Honours project was about promoting physical activity as a habitual behaviour. In the musculoskeletal area, and specifically in radiographic arthritis (ROA) there has been little research on habitual physical activity and its association with ROA, so this is just one issue I am keen to investigate further.”

The Menzies Research Institute has produced many successful researchers from its postgraduate student program. Stella said: “The work environment here at the Institute is really supportive with an extremely large knowledge base. I know that here at the Institute, I will produce my best work.”

The postgraduate program at the Institute has recently expanded to welcome four new PhD students. We hope to regularly feature the Institute's students and their work in coming editions of the Bulletin.