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bulletin



Research team Professor Terry Dwyer, Dr Leigh Blizzard and Associate Professor Anne-Louise Ponsonby (standing), Dr Ingrid van der Mei and Dr Fotini Pittas (seated)

Infant siblings protect against Multiple Sclerosis

Adults who had more contact with younger brothers or sisters during their first six years of life have a reduced risk of Multiple Sclerosis (MS), a Menzies Research Institute study has found. Results from the study by a team of researchers at the Institute were recently published in the *Journal of the American Medical Association*.

The study found that increasing amounts of time spent in contact with a younger sibling aged less than two years in the first six years of life was associated with reduced risk of developing MS, possibly by altering childhood infection patterns and related immune responses. Associate Professor Anne-Louise Ponsonby said that participants who had had one to three years of contact with younger siblings had a 43 per cent reduced risk; three to five years of contact a 60 per cent decreased risk; and greater than five years of contact an 88 per cent reduced risk of MS. "Past work has shown that two major risk factors for developing MS are a history of glandular fever, and higher levels of antibodies to the Epstein-Barr virus (EBV), a common childhood infection," she said.

The study, conducted in Tasmania from 1999 to 2001, involved over 400 participants. Researchers surveyed 136 patients with MS and a control group of 272 people without MS about their number of siblings and dates of birth, whether the sibling lived in the same house as the participant, and other factors thought to be associated with MS. Blood samples were taken to measure levels of antibodies to EBV. Associate Professor Ponsonby said healthy participants in this new study who had contact with younger siblings aged from birth to two years were less likely to have a history of glandular fever or higher EBV antibodies. That is, they were less likely to have these risk factors. "It has been proposed that early life

infections may reduce the risk for allergic and also autoimmune disorders such as MS, by influencing the developing immune system. Having siblings may increase the number of early-life infections, and a lack of contact with siblings has been associated with several immune disorders. "Younger siblings may be important because they are a source of common infant viral infections. Re-exposure to active viral infection is known to cause immune boosting and train immune responses", she said.

The possible protective role of early life infection in the development of MS is in line with increasing prevalence of the disease, which has accompanied a decline in childhood infection rates over time. "Further work is required to confirm these findings and understand the underlying mechanisms. This is another piece of the jigsaw in the understanding and work towards future prevention of MS", said Associate Professor Ponsonby.

The project was supported with funding from the National Health and Medical Research Council, the Australian Rotary Health Research Fund, and MS Australia.



Postgraduate student success

Congratulations to Dr Ingrid van der Mei, who graduated with a PhD from the University of Tasmania in late 2004. Dr van der Mei coordinates the Menzies Research Institute's investigations into Multiple Sclerosis (MS).

During the course of her PhD study, Dr van der Mei made several important discoveries about factors which may influence the development of MS.

In particular, she found that higher past sun exposure, particularly during childhood and early adolescence, was associated with a reduced risk of MS; having younger siblings was also associated with a reduced risk of MS; and having had glandular fever or having high levels of antibodies against the Epstein-Barr virus (a common childhood infection) was associated with an increased risk of MS (see article on page 1).

Postgraduate students have traditionally made a significant contribution to the research activities, research output and income of the Menzies Research Institute. A priority of the Institute is to increase student numbers.

To help achieve this goal, the Institute has allocated funds from a generous bequest from the late Ruby Menzie to a scholarship program – the Ruby Menzie Scholarship in Population Health Research. The University has recognised this substantial commitment and agreed to provide matching funds. This will provide funds for scholarships for at least six PhD students.

New Board for the Institute

The Council of the University of Tasmania has recently reviewed the governance structure for the Menzies Research Institute. The Council has determined that the Institute will operate as a corporate entity established within the legal framework of the University, rather than as a separate legal entity, as would be the case if the Institute became an incorporated body. Nevertheless, it intends that the governance relationship between the Institute and the University should largely mimic what would occur if the Institute was a separate legal entity.

In light of these changes, the Council has appointed a new Board to oversee the coming period of growth and development. The Board is responsible for vision, strategy and general oversight of overall Institute performance, for which it is accountable. Directors appointed to the Board by the University Council are Professor Vicki Sara, Mr Damon Thomas, Sir Guy Green, Dr David Boadle and myself. An eminent research scientist in health science will be appointed to the Board in the near future. I am looking forward to leading the Board through this exciting time of expansion and redefinition.

With experienced researchers, a reputation for developing and applying novel techniques, comprehensive population-based disease registries, well developed genealogical resources, laboratory facilities, and the excellent reputation and links with the community that the Institute has established, the Institute will further develop its internationally competitive capacity to make use of new opportunities.

The Menzies Research Institute is an Institute of the University of Tasmania, therefore a priority of the Institute is to ensure that there is an excellent relationship with the University community by maintaining strong management and research links.



The main concern of the Board in 2005 will be to resolve the future structure, activities and direction of the Institute taking into consideration the Vice Chancellor's vision for the Institute, the objectives of the Institute, the University's EDGE agenda (excellence, distinctiveness, growth and engagement) and the views of stakeholders. Of particular importance is the Institute's relationship with the Faculty of Health Science. Whilst the Institute operates independently of the Faculty of Health Science, it is recognised that the two organisations have much to gain by increasing their collaborative work on research projects and the EDGE agenda. Examples where staff from the Faculty of Health Science have been chief or associate investigators of collaborative projects include the areas of multiple sclerosis, skin cancer, physical activity and chronic disease, and smoking and lung function.

We also have a commitment to cooperative engagement with peak bodies and research funding organisations and our many collaborators and supporters. We look forward to developing and strengthening these relationships over the coming years.

Dr Dan Norton
Chairman
Menzies Research Institute

Grant success

The Menzies Research Institute has received \$20,000 funding from the Cancer Council Tasmania and \$14,200 funding from ANZ Charitable Trustees towards its research into identifying the genes which are responsible for hereditary prostate cancer. The Tasmanian Prostate Cancer (TasPac) study attempts to identify the genes involved in prostate cancer so that we can better understand the way the disease develops and help identify those men who are more at risk of developing the disease.

It is unclear what causes or increases the risk of prostate cancer, but it is known that having a family history of the disease is important. Men who have a father, brother or uncle with prostate cancer are at a higher risk of developing prostate cancer than those who do not. The risk increases if more than one relative has been diagnosed with the disease.

Dr Jo Dickinson and PhD student Liesel Fitzgerald are using a number of cutting-edge technologies to discover which genetic abnormalities are common to family members with prostate cancer and rare in people who don't develop the disease. One method involves comparing normal and tumour tissue from the same patient, and regions of DNA which



Prostate cancer researchers; Liesel Fitzgerald (left) and Dr Jo Dickinson (photo courtesy of The Mercury).

are abnormal in affected patients can be identified. This procedure is called "comparative genomic hybridisation". Identification of these regions, and eventually discovering the genes involved, will assist in understanding how the disease develops. It will also contribute to new opportunities for early diagnosis and development of new therapies.

In other news, Dr James McKay has been awarded a CJ Martin Fellowship to work at the International Agency for Research on Cancer (IARC) in France, to expand his experience as a genetic epidemiologist. He is participating in the Breast and Prostate Cancer Cohort Consortium, a study which combines the resources of six large prospective

studies, allowing access to samples and data from 790,000 men and women across the USA and Europe. The project will investigate how genetic variation affects the risk of developing breast and prostate cancer. It brings together a wide range of geneticists, epidemiologists and bio-informaticians to collaborate and share information across borders and nationalities. Dr McKay will be responsible for genotyping a portion of the breast cancer component of the study, totalling approximately 2,500 cases and 2,500 controls.

Other researchers at the Menzies Research Institute have also been successful in obtaining grants recently. Associate Professor Anne-Louise Ponsonby and team received a grant from the Australian Research Council for their proposed study into the effect of binocular vision training on literacy among children with poor reading skills. Dr Velandai Srikanth received a grant from ANZ Charitable Trustees for his population-based study into cerebral white matter lesions and brain function in older people.

Grant and core funding does not cover all the costs associated with the Institute's many and varied research programs. With the support of the community we can expand our research areas, increase the number of study participants, fund clinical tests and purchase medical equipment.

Golfers tee off for cancer research

Over \$17,000 was raised for research into non-melanoma skin cancer at the Institute's 12th Annual Golf Classic on Friday 11 February. One hundred and thirty-six keen golfers competed for this year's Golf Classic Cup, presented by Corporate Express Office Equipment, at the Tasmania Golf Club. The event was a great success, with golfers having the chance to build and develop new relationships, increase their physical activity and raise funds to support the work of the Institute.

The winning team in the Ambrose format was Mansfield Builders, with the Bradman Award for the highest score going to Shadforth's Team II. The team from the

Tasmanian Labor Party took out best mixed team. Many teams enjoyed the inaugural silent caddy auction over the weeks leading up to the event, bidding fiercely for the services of a celebrity caddy for the day. Thirteen local personalities volunteered their time to locate lost balls, supply refreshments for the team and ensure that an enjoyable day was had by all.

Tony Cashmore, one of Australia's leading golf course architects, was a special guest caddy, and former AFL player and coach Stan Alves was Master of Ceremonies. Funds raised will benefit the Institute's research into the genetic and lifestyle factors that might be linked

to the risk of second and subsequent non-melanoma skin cancers.

Associate Professor Alison Venn, Acting Director of the Institute, said that non-melanoma skin cancer is the most common cancer in Australia. "More than half of the non-melanoma skin cancers diagnosed each year occur in people who have already had skin cancer in the past. While we know about some of the factors that cause skin cancer, such as sun exposure, we know very little about why only some people get multiple skin cancers.

"By improving our understanding of the risk factors for second non-melanoma skin cancers, we hope to be able to prevent them and to more accurately identify people who need to be closely monitored," Associate Professor Venn said.



Volunteer Profile - Irma Baumeler

Irma Baumeler has been a volunteer at the Menzies Research Institute for over 5 years. Irma previously worked in administration for a pharmaceutical company. After an early retirement, she was looking for volunteer work where she could use her work skills and keep herself active. During a Salt Skip consultation at the Institute, Dr Trevor Beard suggested to Irma the Institute's volunteer program.

Irma has worked in many areas at the Institute since she began volunteering. She started in the fundraising and donations area, and moved to work on data entry for the Institute's past study into the causes of sudden infant death syndrome. Currently Irma comes in every Monday to work on the Childhood Determinants of Adult Health (CDAH) project. In her current role she carries out a wide range of tasks, from searching for past study participants, to finding venues for interstate clinics, following up questionnaires and changes of address with study participants, scanning and verifying questionnaires and assisting with mail-outs.

Irma gets a great deal of satisfaction from her volunteer work with

the Institute. She loves working with an organisation that makes a real contribution to the health and wellbeing of people, and feels a sense of achievement through working closely with researchers and other volunteers on specific projects.

The Institute currently has over 70 volunteers. Often, the funding we receive at the Institute falls short of the full cost of conducting a project, and volunteer support assists Menzies Research Institute researchers to carry out work that may not otherwise be achievable. The Institute is fortunate to be able to call on the skills, knowledge and goodwill of volunteers, who take on many different roles to help the Institute conduct its research.

If you would like to find out more about the Institute's volunteer program, please contact Volunteer Coordinator Kathy Thomson on 6226 7718 or by email to Kathy.Thomson@utas.edu.au

Diary date

Wednesday 11 May 2005: NATIONAL VOLUNTEER WEEK - AFTERNOON DRINKS

The Institute will be celebrating the contributions of its volunteers with drinks at 4 pm on Wednesday 11 May during National Volunteer Week.



Scott Wilson from Corporate Express presents the cup to the captain of the winning team, Ian Mansfield.

The Institute thanks all the sponsors, caddies, supporters, volunteers and participants that made the day such a success. We are already looking forward to the 2006 event, with the promise that it will be even more enjoyable and worthwhile for participants!



The Direction by Design team with their celebrity caddy, WIN TV news presenter Penny Tame

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Thank you for your support.

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

Please post to:

Menzies Research Institute

Private Bag 23 Hobart TASMANIA 7001

Collex continues to support the Menzies Research Institute

Western Bulldogs' supporter Acting Director Associate Professor Alison Venn embraced the opportunity to talk with the team's coach Rodney Eade at the Collex Menzies Premiers' Lunch (below) on Friday 25 February in Launceston. The event marked the launch of AFL Live in Tasmania and featured a fundraising auction and raffle, with the proceeds supporting research at the Institute.



Ticketmaster7 National Business Development Manager Brent Skinner and State Manager Rob D'Orazio (below) generously donated to the auction a corporate box for an upcoming AFL match at the Telstra Dome. This auction item fetched \$4,000 for the Menzies Research Institute.



Agfest

Collex and the Menzies Research Institute will again share a site at Agfest this year from 5-7 May. Come and visit us on the corner of Main Street and Ninth Avenue!



Valued supporters: We thank our supporters for their generous contribution

2005 Golf Classic

The Menzies Research Institute wishes to acknowledge the following businesses for their support and commitment to the 2005 Golf Classic.

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In Memorium

Gifts of remembrance have been made in honour of:

Mr N Alberry
Mrs N Crisp
Mr H Dale
Mr M Geeves
Mr R Moles
Mr J Read
Mrs E Schmidt
Mr D Woods

Family Trees

The following donation of family trees to assist research at the Institute is greatly appreciated:

Mr C Pearce

Christmas Gifts

Donations to the Institute were received in the name of:

Mr G Griggs
Mrs J Clothier
Mr & Mrs Z Wedderburn
Ms C Keevill
Ms J Doke
Mr D Freeman

Publications

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

Begg CB, Hummer A, Mujumdar U, Armstrong BK, Krickler A, Marrett LD, Millikan RC, Gruber SB, Anton-Culver H, Klotz JB, Zanetti R, Gallagher RP, Dwyer T, Rebbeck TR, Berwick MR. Familial aggregation of melanoma risks in a large population-based sample of melanoma cases. Cancer Causes and Control 2004;15(9):957-965*

Melanoma has been shown in numerous studies to be associated with sun exposure, and with host phenotypic factors of genetic origin. In this study we use information from a large series of incident cases of melanoma from an international population-based study to examine the patterns of incidence of melanoma in the first-degree relatives of these cases. The study concluded that relatives of cases diagnosed with melanoma are at considerable lifetime risk of the disease, especially if the case is diagnosed at a young age.

Dunstan DW, Salmon J, Owen N, Armstrong T, Zimmet PZ, Welborn TA, Cameron AJ, Dwyer T, Jolley D, Shaw JE. Physical activity and television viewing in relation to risk of undiagnosed abnormal glucose metabolism in adults. Diabetes Care 2004;27:2603-2609*

The goal of this study was to assess the associations of physical activity time and television (TV) time with risk of "undiagnosed" abnormal glucose metabolism in Australian adults. This population-based cross-sectional study involved 8,299 adults aged 25 years or older who were free from new type 2 diabetes and self-reported ischemic disease and did not take lipid-lowering or antihypertensive drugs. The findings of the study suggest a protective effect of physical activity and a deleterious effect of TV time on the risk of abnormal glucose metabolism in adults. Population strategies to reduce risk of abnormal glucose metabolism should focus on reducing sedentary behaviors such as TV time, as well as increasing physical activity.

Dwyer T, Blizzard CL*. A discussion of some statistical methods for separating within pair associations among all twins in research on fetal origins of disease. Paediatric and Perinatal Epidemiology 2005;19 (s1): 48-53*

Twin data can be used to gain insights into the origin of associations between factors arising in fetal life and the risk of later disease. This is because twin data afford an opportunity to conduct paired analyses that take the influence of shared factors into account. There are several statistical approaches. The simplest involves comparing, for example, a coefficient from a regression of an outcome on a fetal factor for all subjects in a twin sample, with the coefficient obtained from regressing the within-pair difference in the outcome on the within-pair difference in the fetal factor. Alternative approaches involve simultaneously estimating regression parameters for between - and within - pair components.

Morley R, Carlin JB, Dwyer T*. Maternal calcium supplementation and cardiovascular risk factors in twin offspring. International Journal of Epidemiology 2004; 33 (6):1304 -1309*

There is evidence that maternal calcium supplementation may result in lower offspring blood pressure. We hypothesized that maternal calcium supplementation also influences other cardiovascular risk factors. In the Tasmanian Infant Health Study, supplements reportedly taken in pregnancy were recorded. Twin children of 147 participating mothers were seen at mean age 9 years. Blood pressure was measured in all 294 children and fasting blood samples taken from 230 for glucose and insulin, triacylglycerol and total cholesterol. Maternal calcium supplementation may confer health benefits on twin offspring, especially if they are relatively fat. Calcium availability could permanently programme lipid metabolism during fetal life, directly or by influencing maternal lipid profile. Our findings need to be replicated in other studies. If confirmed, our findings could have important implications for population health.

Morley R, Dwyer T. Studies of twins: what can they tell us about the fetal origins of adult disease? Paediatric and Perinatal Epidemiology 2005;19(s1):2-7*

There has been much interest in evidence that people with lower birthweight have higher risk of adult cardiovascular disease, but the causal pathways underlying such observations are uncertain. Study of twins offers an opportunity to shed light on the underlying causal pathways, in particular by investigating the role of 'shared' factors vs. factors affecting each individual fetus. Twins share many factors during gestation but difference in birthweight within a twin pair cannot be determined by these shared factors, and must relate to factors affecting growth of each individual fetus. If associations seen in a cohort of twins remain in within-pair analyses, then factors specific to each individual must be involved in the underlying causal pathways. Conversely, if the relationships disappear or substantially diminish in within-pair analyses, then factors common to the pair must be involved.

Ponsonby AL, van der Mei I*, Dwyer T*, Blizzard L*, Taylor B, Kemp A, Simmons R, Kilpatrick T. Exposure to infant siblings during early life and risk of Multiple Sclerosis. Journal of the American Medical Association 2005; 293(4):463-469*

Refer to article on page 1.

Zhai G, Cicuttini F, Ding C*, Jones G*. Optimal sampling of MRI slices for the assessment of knee cartilage volume for cross-sectional and longitudinal studies. BMC Musculoskeletal Disorders 2005; 6:10*

MRI slices of 1.5 mm thickness have been used in both cross sectional and longitudinal studies of osteoarthritis, but is difficult to apply to large studies as most techniques used in measuring knee cartilage volumes require substantial post-image processing. The aim of this study was to determine the optimal sampling of 1.5 mm thick slices of MRI scans to estimate knee cartilage volume in males and females for cross-sectional and longitudinal studies. The study found that sampling alternate 1.5 mm thick MRI slices is sufficient for knee cartilage volume measurement in cross-sectional and longitudinal epidemiological studies with little increase in measurement error. This approach will lead to a substantial decrease in post-scan processing time.

**Menzies researchers*