



Oestrogen linked to Obsessive Compulsive Disorder

Scientists at Prince Henry's Institute have discovered that a lack of oestrogen is linked to obsessive compulsive disorder in male mice.

"This is a significant finding as it shows that hormones play an important role in the development of OCD in males. Our research could be influential in the treatment and relief of the disorder," said Dr Wah Chin Boon, Senior Research Officer with the Sex Hormones in Action Group at PHI.

One in 40 people worldwide are affected by OCD and the exact cause is unknown. Symptoms include repetitive and impulsive behaviours, such as excessive hand washing, checking or counting. Men tend to develop the disorder at an earlier age and suffer more severe symptoms than women.

Research presented by Rachel Hill, a post graduate student at PHI, at the prestigious US Endocrine Society conference in 2005 showed that oestrogen-deficient male mice displayed obsessive compulsive behaviours, such as excessive grooming and activity on the treadmill.

However oestrogen replacement therapy returned this OCD behaviour to normal.

Male sufferers of OCD have been shown to have lower levels of a specific gene called COMT. Low levels of COMT affects the breakdown of chemical signals in the brain, causing compulsive behaviour. Studies at Prince Henry's found that COMT levels were halved in the oestrogen-deficient male mice. Treatment of these animals with oestrogen restored COMT expression levels and behavioural levels to normal.

"Prince Henry's research could shed light on the phenomena as to why male OCD patients develop the disorder earlier and suffer a worse fate than women. New treatments for men with OCD may not be too far away, with drugs that mimic specific effects of oestrogen on the brain without 'feminising' the body becoming available," said Dr Boon.

The impact of oestrogen deficiency in men is a constant source of new discovery for scientists at Prince Henry's Institute. Our previous



Senior Research Officer Wah Chin Boon with PhD Student Rachel Hill

research has shown that oestrogen deficiency in male mice was linked to a lack of sex drive as well as the development of fatty liver.

For more information on INSIGHT articles, email Alison.Noonan@princehenrys.org or telephone (03) 9594 4391

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Male gene provides clue to Parkinson's Disease

Scientists at Prince Henry's Institute and the University of California (UCLA) have discovered that SRY, the male protein that forms the testes, is also produced in the brain region affected in Parkinson's disease.

This finding may explain why men are more likely than women to develop this degenerative disorder. "Our research has shown that a gene only present in males contributes to the control of physical movement, a fundamental brain function," said Associate Professor Vincent Harley,

Head of the Human Molecular Genetics Group at Prince Henry's.

Parkinson's disease is a chronic movement disorder that affects around 40,000 Australians. Symptoms include shaking, slowness of movement, rigidity and difficulty with balance. Men are 1.5 times more likely to develop the disease than women.

SRY, the protein that determines male gender, is passed from father to son on the Y chromosome. Co-investigators Dr Harley and Dr Eric Vilain of UCLA have

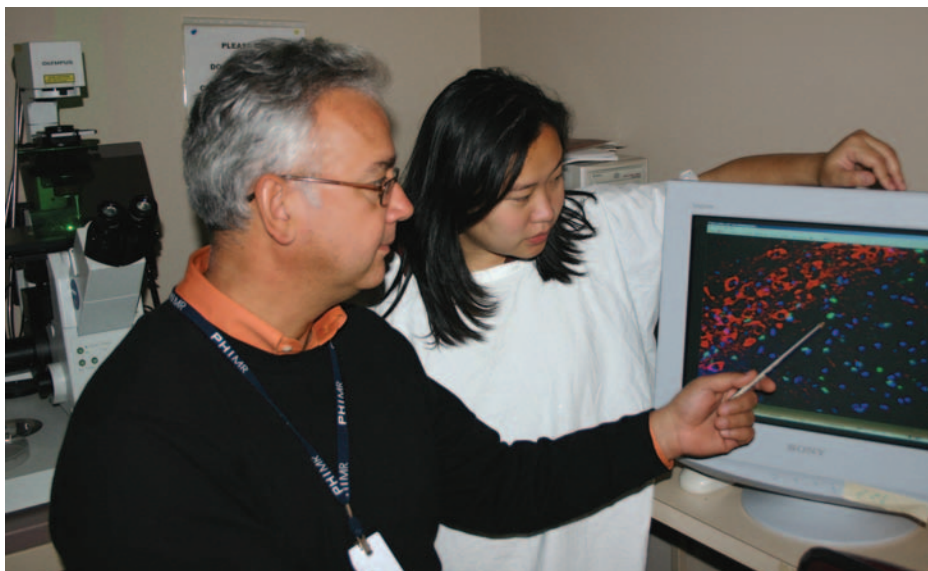
now traced SRY to the substantia nigra, a part of the brain that deteriorates in Parkinson's disease.

The Prince Henry's team, including Dr Helena Sim and PhD student Sabine Kelly, developed sensitive new tools to detect SRY protein in the brain. By using injections to block the expression of SRY in the substantia nigra of male mice, UCLA scientists found that the mice developed movement problems similar to Parkinson's. When they stopped the injections, the mice recovered.

Dr Harley believes that the variations in genes that control SRY, or in the SRY gene itself, may be linked to the onset of Parkinson's disease. Men with low levels of SRY may be at greater risk of developing the disorder.

Scientists at Prince Henry's are collaborating with Associate Professor Catriona McLean, Director of the National Neural Tissue Resource Centre at the Alfred Hospital, Melbourne, to investigate SRY levels in the brains of men with Parkinson's disease.

The work was published in the February 21 edition of *Current Biology* and received extensive commentary in *Nature* and *Science*.



Associate Professor Vincent Harley and Dr Helena Sim are investigating the role of male gene SRY in the brain

PHI professors leading the way



Director acknowledged for world leading research

Director of Prince Henry's Institute, Professor Evan Simpson, has been elected a Fellow of the Australian Academy of Science for his achievements in the field of hormone research.

Appointment to the Academy honours a career that has significantly advanced, and continues to advance, medical research.

Professor Simpson was one of 18 new Fellows elected to the Academy, including researchers from Australian universities, CSIRO and medical research institutions.

Professor Simpson is recognised as the world leader in the area of oestrogen biosynthesis. Over the last 25 years, his research has had a major impact in a variety of fields, including embryology, endocrinology, reproduction, tumour biology, and human physiology and pathophysiology.



Deputy Director presents at prestigious UK conference

Deputy Director Professor Jock Findlay AM addressed The UK

Society for Endocrinology's annual conference in April as the 2006 recipient of The Dale Medal.

The Dale Medal is awarded in recognition of outstanding studies which have changed our understanding of endocrinology in a fundamental way. It is the highest accolade bestowed by the Society.

Gandel family launch DNA Sequencing Centre

John and Pauline Gandel and Laurence and Stephanie Joseph from the Gandel Charitable Trust joined members of the Monash Health Research Precinct Sequencing Committee to celebrate the launch of the Gandel Charitable Trust Sequencing Centre recently.

The event was held in recognition of a significant gift from the Gandel Foundation to purchase a new DNA sequencer for the Precinct. The DNA Sequencing Centre is a core facility for Precinct members, including Prince Henry's Institute, Monash Institute of Medical Research and Southern Health.

Researchers use DNA sequencing to determine the exact order of the 3 billion bases that make up the genes in the 24 chromosomes in the human genome. This process is crucial to understanding conditions such as ovarian cancer, male infertility, diabetes, Down's Syndrome infection and inflammation.

In addition to processing DNA sequencing for the Precinct, the Gandel Charitable Trust Sequencing Centre is used for research by Monash University and external organisations, including the Ludwig Institute, University of Melbourne and CSL. Centre Manager Vivien Vasic said the new equipment utilised

Head of the Female Reproductive Group at Prince Henry's Institute, Professor Findlay presented a lecture on the central role of inhibin in endocrine tissues and its interaction with the binding protein betaglycan. Studies at PHI have shown that research into this complex interaction could be beneficial in the treatment of infertility.



Emeritus Director selected for Honorary Membership

Emeritus Director at Prince Henry's Institute, Professor Henry Burger AO,



PHI Director Professor Evan Simpson with MIMR Director Professor Bryan Williams and Mr John Gandel at the launch of the Gandel Charitable Trust Sequencing Centre

the latest technology to offer a more accurate, reliable and efficient service to researchers.

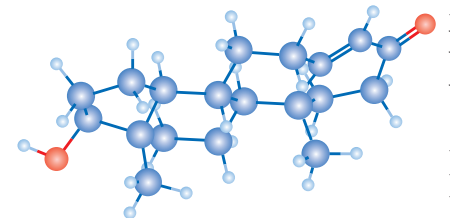
"Researchers and clinicians can gain a greater understanding of the genes they're studying as the new sequencer provides information on 30 percent more bases than the original. This means we can obtain more information from each DNA sample," said Ms Vasic.

Prince Henry's is grateful to the Gandel family for their generosity.

has been elected to Honorary Membership of the prestigious UK Society for Endocrinology. Professor Burger, a past winner of the Society's highest accolade The Dale Medal, was selected in recognition of his world leading studies in endocrinology.

A pioneer in reproductive endocrinology, Professor Burger has worked in the field for more than 30 years. He has received countless accolades for his research, which includes the management of menopause, female and male infertility and the role of the inhibins in ovarian cancer.

Volunteers needed for testosterone study



testosterone: chemical structure

Prince Henry's Institute is seeking healthy but overweight men to take part in a study on the effects of testosterone treatment on body fat and heart disease.

Non-smokers, aged 40-70 years, are needed for a series of clinical trials to investigate the link between testosterone levels, fat and the risk of heart disease in ageing men. Scientists at PHI believe testosterone treatment may be beneficial for men who are at greatest risk of heart attack – those over the age of 55 with low testosterone and carrying extra abdominal fat.

For more information contact Anna Zamojska or Elise Forbes at Prince Henry's Institute on (03) 9594 3087 or 9594 3554

Ride for Reproduction a roaring success

Congratulations to the Prince Henry's Institute cycling team who participated in the Murray to Moyne Cycle Relay on 1 & 2 April to raise money for reproduction and fertility research.

The team, led by Director Professor Evan Simpson and Chairman Mr John Robinson, endured a gruelling 24 hour 520km challenge from Echuca to Port Fairy. Their commitment to the Institute and to raising money for fertility research was outstanding, with more than \$30,000 generated through donations and sponsorships.

The annual Murray to Moyne attracts 1600 cyclists, representing over 150 organisations, to raise money for a designated health charity. PHI was fortunate on its inaugural ride to partner with the experienced Lorne Community Hospital team, under the expert guidance of CEO Mr Ross Waddington.

The support crew also played a vital role over the weekend, boosting morale, ensuring smooth logistics for the team and driving the support vehicles. Special thanks to Mr Terry Haining, Ms Anne Bruce and Miss Inge Jones.

The highlight of the cycling team's fundraising activities was the Trivia Night and Auction held on 28 March at the Melbourne Bowling Club in Windsor. Thank you to our host Mr Sam Gamon, of Chisholm & Gamon Property, who



PHI Cycling team: (from top left clockwise) Mr John Robinson, Miss Natalie Hannan, Dr Morag Young, Dr Sarah Meachem, Mr Andrew McCallum, Prof. Evan Simpson, Dr Michael Clarkson, Mr Bruce Watson

entertained the 155 guests with challenging rounds of trivia and a lively auction.

The Ride for Reproduction brought a number of people together for a common cause – reproduction. Infertility affects around one in eight couples and is shared equally among men and women. PHI scientists are researching reproduction in the hope of identifying the causes of infertility, improving diagnosis and developing new treatments. Through the support of our sponsors and donors PHI is committed to continuing this important research.

Thank you to our major sponsors, Boom Logistics and Wilson HTM. Other sponsors included KPMG, PKF Melbourne, PKF Perth and Phillips Fox.

Special thanks to: Mr Ross Waddington and Lorne Community Hospital; Mr Sam Gamon, Chisholm and Gamon Property; Melbourne Bowling Club; Mr Fraser Gehrig and the St. Kilda Football Club; My Wellbeing; Hills; Readings; Bike Life; Dr Belinda Owen - Holden Chiropractic; Mr John Robinson Professor John Funder; Ms Maria Alexiadis.

Tennis fans support medical research

More than 100 Institute supporters enjoyed a wonderful day at the Kooyong Classic PHI fundraiser on 11 January 2006.

The crowd saw four excellent matches between some of the world's top tennis players, including Roger Federer, Andy Roddick, David Nalbandian and Guillermo Coria.

Thank you to everyone who attended the fundraiser,

Tennis fans and PHI supporters: (L to R) Joy & Graham Fair, Janet Hibbins & Kirsty Stewart; Inge Jones, Maria Alexiadis & Sarah Meachem



which raised almost \$2,000 for our research. Thank you also to Colin Stubs, organiser of the Kooyong Classic, for his generous support. A day at the Kooyong Classic looks set to be an annual PHI event, with next year's fundraiser promising to be even bigger and better!

Details about the 2007 event will be available later in the year.



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