

# News Release



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## **Winner of the Health Research Council of New Zealand's 2009 Liley Medal holds the key to fertility**

The Health Research Council of New Zealand's (HRC) Liley Medal was last night (*Wednesday 18 November 2009*) awarded to Professor Allan Herbison at the Science Honours Dinner in Auckland.

Professor Herbison, of the Department of Physiology at the University of Otago in Dunedin, has been honoured for his outstanding work, which has made a breakthrough that may lead to new treatments for infertility. His research has made significant findings which show that a protein molecule called kisspeptin plays a crucial role in triggering ovulation.

Professor Herbison said he was honoured to be awarded the Liley Medal for an outstanding contribution to the health and medical sciences in the field of neuroscience and neuroendocrinology.

His research, published in 2008 described the process by which a small group of nerve cells in the brain, called gonadotropin-releasing hormone neurons, are activated, thereby triggering the hormone surge that leads to ovulation.

This study, involving his laboratory in Dunedin and collaborators in Cambridge, used an elegant experimental design to show an essential role for a small protein called kisspeptin and its receptor, GPR54 in the process.

While kisspeptin was known to be involved in the initiation of puberty, its newly discovered role in the brain's control of ovulation suggests new targets for therapeutic intervention in the treatment of infertility and in contraception.

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“This is an exciting finding, as people have been trying to find out precisely how the brain controls ovulation for more than 30 years. This work now reveals a crucial link in the brain circuitry responsible.”

The study indicates that disorders affecting the signalling between kisspeptin and the GPR54 receptors will result in women being unable to ovulate.

“Targeting drugs to this chemical switch to make it work properly may help some people who are infertile, while finding compounds that can block this switch could lead to new contraceptives,” said Professor Herbison.

It could also allow for ovulation to be induced in a more natural way than current therapies available to infertile women.

“Kisspeptin activity in the brain occurs at the top level of the cascade of neural and hormonal processes that eventually lead to ovaries releasing eggs,” he said.

“By targeting this switch, the subsequent processes could proceed normally, avoiding the need to induce ovulation by injection of large doses of hormones themselves.”

Infertility is an increasing problem for couples in western societies. Up to 20 per cent of couples in New Zealand suffer from infertility and the research team is looking at new avenues of treatment.

Kisspeptin was named in honour of Hershey Kisses, as the scientists who originally discovered the molecule were based in Hershey in the US.

HRC Chief Executive Dr Robin Olds said: “Professor Herbison had an excellent paper and his findings are important because they show that kisspeptin may be a promising area to focus future research efforts aimed at regulating human fertility.”

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**About the Liley Medal**

The Liley Medal is awarded annually by the Health Research Council of New Zealand (HRC) for an outstanding contribution through research in the health and medical sciences. The Medal recognises the individual who lead a piece of work that is a genuine breakthrough in research and which has gained international recognition.

**About Sir William Liley**

**Sir William Liley** KCMG, BMedSc, MB, ChB, PhD (ANU), Hon. DSc (VUW), Dip Obs, FRSNZ, FRCOG, Hon. FACOG (1929 – 1983)

Although it is more than 20 years since his passing Sir William Liley's contribution to medical science, particularly in the area of obstetrics, is still celebrated.

Born in Auckland in 1929 Albert William Liley – who always preferred to be known as Bill – was educated at Royal Oak Primary School before moving on to Auckland Grammar where his intellectual capacity began to blossom.

Awarded a University National Scholarship in 1947 Bill Liley distinguished himself at both Auckland and Otago Universities. He was gold medallist in anatomy in 1950, secured a Senior Scholarship in medicine and was awarded the Travelling Scholarship in medicine in 1954.

Instead of taking up the scholarship he headed for the Australian National University where he took up a research scholarship in physiology, working on various aspects of synaptic transmission. Despite being a recently qualified medical graduate he had four papers published in the *Journal of Physiology*.

Bill Liley returned to Auckland as a Sandoz Research Fellow and in 1958 was awarded a Research Fellowship in obstetrics by the Medical Research Council of New Zealand, the HRC's predecessor. From that time until his premature death in 1983 he held a series of appointments with the MRC, including being a council member between 1972 and 1978, and Chairman of the South Pacific Health Committee between 1973 and 1978.

In 1968 Bill Liley was appointed to a personal Chair in Perinatal Physiology at The University of Auckland's Postgraduate School of Obstetrics and Gynaecology. He was particularly attracted to the problems of unborn and newly born children and his major focus became Rh haemolytic disease of the newborn – a major issue in obstetrics. At the time he entered the field perinatal mortality was about 25 per cent.

One of his great contributions lay in extending the use of spectrophotometry of amniotic fluid to a much wider range of potentially affected pregnancies – work that gained him an international reputation. The technique he developed made it possible to identify which baby could be retained safely in utero for a normal gestation period and which should be delivered. As a result of his work perinatal mortality from haemolytic disease at National Women's Hospital fell to eight per cent.

A CMG in 1967 was followed in 1973 by a knighthood (KCMG). Sir William's work was also internationally recognised by a variety of organisations. He served as a member of the WHO Expert Advisory Panel on maternal and child health from 1968 until his death. He was an Honorary fellow of the American College of Obstetricians and Gynaecologists and was appointed a member of the International Association for Advice and Research on Mental Deficiency. He also held several other honorary fellowships and memberships of prestigious societies overseas.

An extended biography prepared by Sir John Scott sums up his life in this way:

“Sir William Liley embodied many characteristics which have typified the leaders and giants of scientific endeavour in New Zealand. He combined top-flight intellectual ability with practical skills, humanity and humility. His accomplishments indicated to his generation and those coming after, that achievement on a world scale was very much within the grasp of dedicated scientists who chose to return or remain in New Zealand.”

### **About the Health Research Council of New Zealand (HRC)**

The HRC is the Crown agency responsible for the management of the Government's investment in public good health research. Ownership of the HRC resides with the Minister of Health, with funding being primarily provided from Vote Research, Science and Technology. A Memorandum of Understanding between the two Ministers sets out this relationship.

Established under the Health Research Council Act 1990, the HRC's statutory functions include:

- advising the Minister and administering funds in relation to national health research policy
- fostering the recruitment, education, training, and retention of those engaged in health research in New Zealand
- initiating and supporting health research
- undertaking consultation to establish priorities in health research
- promoting and disseminating the results of health research to encourage their contribution to health science, policy and delivery
- ensuring the development and application of appropriate assessment standards by committees or subcommittees that assess health research proposals.