



Mr Paul Burton uses his research to further treatment for diseases costing millions

A very real disease

Upper GI Surgeon Mr Paul Burton is using the funds attached to the RACS' prestigious Foundation for Surgery Research Fellowship to further his PhD research which redefined much of the physiology and pathophysiology of adjustable gastric banding, including demonstrating that the procedure works by switching off appetite rather than mechanically restricting food intake.

Working as a Senior Research Fellow in the Centre for Obesity Research Education (CORE) at Monash University, Mr Burton is conducting trials to discover how the bands affect the peripheral satiety mechanism in an endeavour to

improve both the devices and surgical or endoscopic intervention.

He said that with obesity now the biggest and most costly health issue confronting first world countries such as Australia, the need to understand the physiology of appetite was vital.

"Obesity has now become one of the worst diseases confronting first world countries and is a rapidly increasing problem throughout the developing world," he said.

"It underlies the development of Type 2 diabetes, it is a known driver of cancer, particularly oesophageal cancer which has had an incident rate rise of 400 per

cent in the last 25 years, and on a practical level makes every other surgery more technically difficult and risky.

"Bariatric surgery has now been proven to be the only effective long term treatment for obesity with studies now providing incontrovertible evidence that it not only prolongs life, but induces remission in a multitude of diseases, as well as translating to savings in health care costs.

"It is essential therefore to devise treatments that are more specific to a particular patient and more widely accessible for now we don't even come close to operating on one per cent of patients with the disease."

Better obesity care

Mr Burton said that while his initial PhD research found that adjustable gastric bands work to switch off the appetite, the neural and endocrine pathways that create the effect were still unknown.

"We know that the physiology of the bands work as a satiety reducing procedure not a mechanically restrictive procedure, but we don't know why," he said.

"We need to know how the band could be stimulating nerves so that we can see if that can be achieved a better way or through a less invasive process.

"This in turn will mean an improvement in the care of the obese patient, a better selection process to determine those candidates who are likely to gain the most benefit, and hopefully allow us to link the surgery to improved future therapies."

Mr Burton completed his original PhD research with the support of a RACS' Surgeon Scientist Scholarship in 2008-2009 along with a NHMRC postgraduate scholarship and his work has been published in 13 journals.

He was the recipient of the Monash University Vice Chancellor's Commendation for Doctoral Thesis Excellence and the Monash University School of Public Health Doctoral thesis award and was a dual winner of the Young Investigator Award as chosen by the Obesity Surgery Society of Australia and New Zealand. His work was included in the best of DDW. Importantly, discoveries have been translated to several new diagnostic tests and the production of educational videos and literature for clinicians and patients.

Mr Burton's training included a Fellowship and Consultant position in the oesophago-gastric centre at Addenbrooke's Hospital in the UK in 2009/10 and in 2010 he was invited to give a 45 minute presentation of his work at the 13th annual Obesity Annual Symposium at the Laval in Quebec.

He is conducting his research in collaboration with his PhD supervisors, Associate Professor Wendy Brown and Professor Paul O'Brien, work which combines with his clinical practice in which he conducts almost 150 bariatric surgeries each year.

He is also involved in randomised

control trials looking at better defining the role of surgically induced weight loss in disease states such as Type 2 diabetes as well as focussing on the triangle of the inter-related diseases of obesity, reflux and oesophago-gastric cancer.

Mr Burton said the College's support of academic surgeons was of great importance to the profession given that the NHMRC remains biased towards the basic sciences with the clinical sciences such as surgery being greatly under-represented in funds distributed.

He said that with surgical research receiving less than one per cent of the total NHMRC budget, many gifted

surgeons were forced to disengage from their research interests.

"Australia has some of the best surgical clinicians in the world, but there is little support for surgical research and I think the challenge facing our health and medical authorities is to find a way to keep surgeons involved in research after completion of a higher degree as well as ensuring clinicians have the opportunity to contribute to research efforts; which they are almost all prepared to do" Mr Burton said.

"In the UK, for example, there are more formal combined clinical and research pathways where trainees undertake a PhD during training while maintaining their clinical commitments within the hospital structure.

"Both the US and UK also have funded hospital departments which have a research focus yet in Australia we have no integrated hospital-based system wherein clinicians can contribute to research and a combined scientific effort without being forced to lose their clinical focus."

Mr Burton also said his research could not have been undertaken without the on-going support of the College given the entrenched discrimination still directed towards obese patients with many people both within and outside medicine and research-funding organisations still believing it to be a character-based issue rather than a disease.

"There still appears to be a uniformly held view that obesity is entirely the patient's fault, which is why the support of the College has been so crucial to my ability to undertake this research," he said.

"The disease has now been estimated to be costing up to \$4 billion per year in Australia and while there is very powerful data to prove that bariatric surgery saves money and extends life, there are still a great number of health professionals who do not believe surgery to be the solution.

"I don't think there would be another group of patients who face as much discrimination as those suffering obesity, but with statistics showing that up to 25 per cent of the Australian population is now in the obese weight range, with more than 60 per cent being overweight, we need to dismantle that discrimination if we are going to have any hope of tackling this disease."

-With Karen Murphy



profile

More research into banding

> Awarded Vice Chancellor's Commendation for doctoral thesis excellence

> Awarded Monash University School of public health

> Dual winner of OSSANZ

> Work presented in the distinguished abstracts plenary at Digestive Diseases week and included in the best of DDW

> Practical perspective: developed several new diagnostics tests, and developed educational tools and animations for patients and clinicians