

# Research Update



Photo credit: Colin Dunn

## Observing Vitamin D levels in severely obese patients after sleeve gastrectomy

Severely obese patients undergoing sleeve gastrectomy will benefit from rapid weight loss, comorbidity reduction and avoidance of complications from bypass procedures. However, this type of surgery also leads to malabsorption of micronutrients with Vitamin D deficiency reported in 21 to 80 percent of patients one year after surgery.

Inadequate Vitamin D levels have been associated with disruptions to calcium homeostasis, impaired bone metabolism and osteoporosis, cancer, insulin resistance, diabetes, cognitive dysfunction, depression and cardiovascular disease.

With no current consensus on recommendations for Vitamin D supplementation dosage and duration for gastric sleeve or any other bariatric surgeries, patients are predisposed to poorer health outcomes.

Bariatric surgeon, Dr Ian Martin, together with Mrs Clare Dix, Dr Olivia Wright, Ms Sharon Rochester, A/Prof Judith Bauer and Prof John Prins, will examine whether achieving an adequate and sustained level of Vitamin D through individual supplementation can optimise patient outcomes after gastric sleeve surgery.

Results of this research will bring a broader understanding of the cause for deficient Vitamin D levels in this specific patient group and provide pilot data on the variation of customisation required for future Vitamin D usual care supplementation practice.



## First research project conducted between St. Andrew's and The Wesley Hospital campuses now complete

This three-year research project funded by AusHSI investigating the safety and efficacy of the anti-fibrinolytic drug tranexamic acid (TXA) in optimising blood management during cardiac surgery has been completed.

Surgeons and patients now benefit from a better understanding of the optimum TXA dosage for maximum benefits and have clearer guidelines on when the blood-clot promoting agent TXA should be used and recommended to patients.

The successful completion of this project indicates a significant step forward for the Wesley-St. Andrew's Research Institute. This is the first research project conducted between St Andrew's War Memorial Hospital and The Wesley Hospital campuses since the merger between Wesley Research Institute and St. Andrew's Medical Institute.

Dr Bruce Garlick, together with Prof John Fraser, Dr Ian Smith, Dr James McGree and Dr Shen Liu, explored the clinical consequences of using TXA, the optimum dosage of the drug, and offered an algorithm for identifying patients who can best reap the benefits of TXA usage.

Research results showed significantly fewer bleeding related complications with no major detrimental consequence in patients receiving TXA. Researchers also discovered that patients

do not benefit equally from the use of TXA and should be evaluated on a case-by-case basis.

To aid this evaluation, the team of researchers constructed a simple algorithm to help key decision makers, such as cardiac surgeons, anaesthetists and intensivists, to determine whether a patient will benefit from the use of TXA in surgery.

TXA has been the blood-clotting drug of choice since 2008 with demonstrated abilities to reduce bleeding in cardiac surgery by decreasing the use of blood products and reoperations for bleeding. However, with anecdotal experience and suspected neurological complications associated with TXA, the rate of TXA usage has declined due to debates and concerns surrounding the safety and effectiveness of the drug.

The findings of this research project shed positive light and affirmation on the safety and effectiveness of anti-fibrinolytic drugs, like TXA, in cardiac surgery and provided important guidelines for identifying patients who can benefit from the use of TXA.

## Welcome to the Spring 2015 edition of Research Update.

This edition highlights one of our very first research projects conducted between the Wesley and St. Andrew's hospital campuses which investigated the use of tranexamic acid (TXA) in cardiac surgery. The project came to completion in June, demonstrating the increased opportunities and outcomes WSARI can now bring to doctors, researchers and patients across all four UnitingCare Health hospital campuses following the merger with St. Andrew's Medical Institute one year ago.

A pilot study evaluating the predictive abilities of biomarkers for adverse cardiac outcomes in patients who have undergone major non-cardiac surgery is featured in this newsletter. This project currently requires funding to commence to make an immediate impact on patient outcomes.

Many exciting collaborations have been gaining momentum in the past few months, including a joint venture between ABB WSARI Tissue Bank and the Skin Cancer College Australasia to accelerate skin cancer research. Another research project also sees medical researchers working together with dieticians to improve patients' quality of life after sleeve gastrectomy surgery.

Finally, with the commencement of a new financial year, we would like to thank all our donors for their ongoing support and generosity. Many research projects would not have been possible without generous donations. Your support has allowed vital medical research to continue, improving patient outcomes and treatment options to make a lasting difference in the care for patients and their quality of life.

## Maintaining and expanding capabilities of ABB WSARI Tissue Bank

The ABB WSARI Tissue Bank has been operating since 2007 and has supported over 30 research projects within the last eight years.

Without the vital funds ABB has committed to in support of the WSARI Tissue Bank in the past 5 years, the growth and expansion of the Tissue Bank would have been a slow and difficult process.

This year, we are pleased to announce the establishment of the Australasian Skin Cancer Tissue Bank – the first comprehensive tissue bank in Australia and New Zealand.

This tissue bank between the ABB WSARI Tissue Bank and Skin Cancer College Australasia will have significant impact on skin cancer research as it is the only tissue bank to collect biological samples from non-melanoma skin cancer, the most common form of cancer in Australia.

In order to maintain capabilities and continue operating as an important resource for medical researchers, the WSARI Tissue Bank is currently seeking further funding opportunities.

To support the WSARI Tissue Bank, please contact Rod Knapp on 3721 1510

**For a list of research projects supported by the ABB WSARI Tissue Bank, visit:**  
<http://www.wesleyresearch.org.au/tissuebankresearch/>



Clinical research is a term often used to define the work of the Institute, but what does it mean? Like the elephant, you know one when you see it but it's not so easy to describe!

This edition of Research Update shows clearly how donors' funds are applied in the search for ways to improve patient care effectively and as quickly as possible.

There's particular emphasis on the heart, absolutely crucial to sustain life. Take the major project described on the front page. It's hard to imagine anything more important during heart surgery than the management of blood and reducing the complications of bleeding. Another project aims to reduce the risk to the heart from non-cardiac surgery.

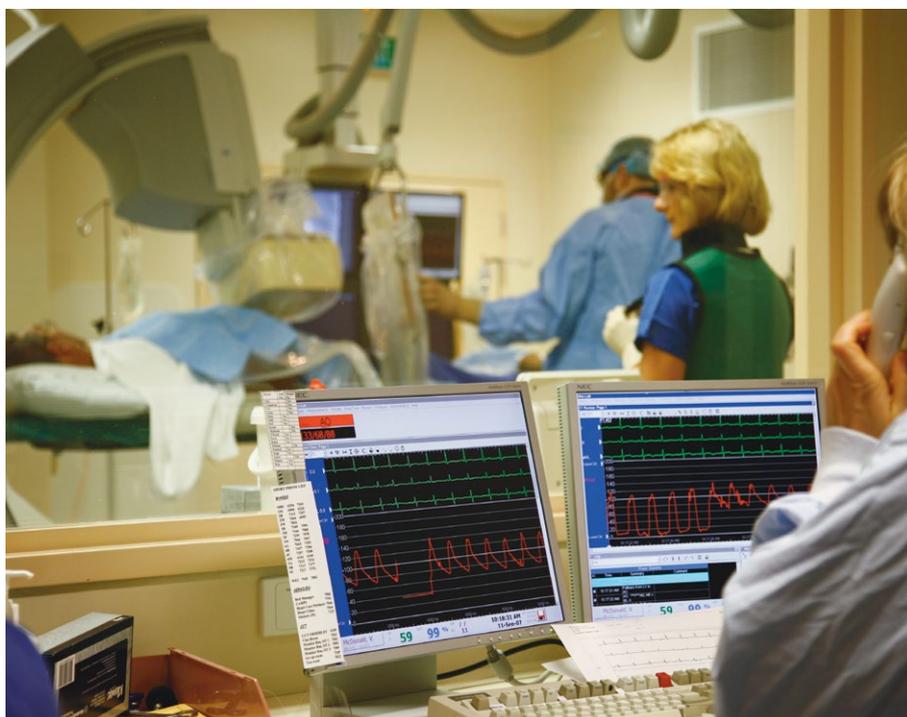
Skin cancer is a huge problem in Queensland, and Australia generally, and now the Australasian Skin Cancer Tissue Bank is being established within our own ABB Tissue Bank at the Institute. It's exciting to see the continuing expansion of this facility to help researchers obtain an ever widening range of tissue. It certainly justifies the long term sponsorship of ABB and its predecessor companies Mincom and Ventyx.

Clinical research is perhaps best described by way of examples like these. They help to explain the immediate benefits of donations to our Institute whose researchers are overwhelmingly reliant on private funding.



From the  
Chairman

Peter Allen, Chairman



## Predicting major adverse cardiac events in non-cardiac surgical patients

Every year, over 200 million adults worldwide undergo major non-cardiac surgery. 10 million of these patients are estimated to suffer from significant myocardial injury post-operation, and more than one million will die within 30 days after surgery.

As surgery puts additional stress on the body, some patients will suffer from adverse cardiac events after undergoing major non-cardiac surgery, which can result in serious outcomes including heart attack and death. On a global scale, cardiac events are estimated to account for one third of perioperative deaths and are associated with increased hospital stay and long term mortality rates.

Cardiologists Dr James Cameron and Dr John Rivers, together with Physical Sciences Manager and Biostatistician Dr Ian Smith, are set to embark on a research to investigate whether post-operative heart complications in patients undergoing major non-cardiac surgery at St. Andrew's War Memorial Hospital can be better predicted using a protein released from the heart, the B-type natriuretic peptide (BNP), in combination with the use of a risk model.

This 6-month pilot study will build on the results of previous research that showed a significant improvement in post-operative risk prediction through combining biomarkers and risk stratification tools, such as the Revised Cardiac Risk Index (RCRI). Data collected and analysed will help to identify whether further research is warranted in order to establish new decision-making protocols for major non-cardiac surgery.

Results of this study are expected to evaluate and determine the predictive ability of BNP, RCRI and an index with enhanced capability through combining BNP with RCRI, for both in-hospital and short-term (within 30 days) adverse cardiac outcomes in patients who have undergone orthopaedic surgery at the hospital.

This risk model will allow surgeons to better identify patients who are at a high risk of suffering from a cardiac event after major surgery, and develop management strategies and treatment plans for reducing post-operative morbidity and mortality.

### Donate Now



This research needs \$20,000 to commence and continue over a 6-month period. We acknowledge and thank the clinicians and researchers for the donation of their time, the hospital, and Sullivan Nicolaides Pathology for pledging to provide the testing in-kind.

**Make a donation or pledge of support today by visiting**  
<http://www.wesleyresearch.org.au/donate>  
or contacting Rod Knapp on 3721 1774.

## Thank you to WSARI's recent major supporters

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## Wanted: Gift-wrapping Superstars

Each year, Indooroopilly Shopping Centre (ISC) engages with our community by running gift-wrapping stations in the lead-up to Christmas and Mother's Day to show their support towards medical research.

A team of volunteers have been donating their time to run gift-wrapping stations at ISC in the past year which has raised almost \$25,000 in aid of medical research projects at the Institute.

"It is a real thrill to know that I am able to contribute in a very small way to the work carried out at the Research Institute," said Jennifer, one of the gift-wrapping volunteers.

Leigh-Ann, another gift-wrapping enthusiast embraces the spirit of giving in the festive season. "I see gift-wrapping as a terrific way to raise money for a great research institute and have fun at the same time. It's extremely satisfying when customers say you've done such a fantastic job on the gifts for their family and friends!"

**If you would like to volunteer for the Institute's gift-wrapping events or other fundraising activities, please email Rod at [rknapp@wesleyresearch.com.au](mailto:rknapp@wesleyresearch.com.au)**



*A gift that makes a difference today and tomorrow.*

#### Your Bequest



### Leaving a Bequest to The Wesley-St. Andrew's Research Institute

WSARI is committed to conducting world-class medical research that delivers improved diagnostics, more effective treatments and greater quality of life for patients who have suffered illness or injury.

As a not-for-profit organisation, we rely on the generosity of donations to fund critical research programs and facilities to better serve the community.

By including a bequest to WSARI in your Will, you are leaving a tangible gift to future generations.

**Visit <http://www.wesleyresearch.org.au/bequest> for more information.**

## Save the Date: Jacaranda Lunch 2015

This year, the Wesley-St. Andrew's Research Institute is hosting the Jacaranda Lunch to celebrate the purple blooms and raise funds for ovarian cancer research.

The Jacaranda Lunch has been a popular event in the past years and is a relaxed social gathering and networking opportunity for women who share an interest in medical research. Delicious canapés will kick off the event and a distinguished speaker will address current women's health issues to raise awareness and rally support for ovarian cancer research.

### Jacaranda Lunch 2015

Date: 19th November 2015 (Thursday)

Time: 11.30am – 2pm

Venue: CUA Boardroom, Level 23,  
145 Ann Street, Brisbane

Tickets: \$900 (excl. GST) per table of 10  
OR \$90 (excl. GST) per person

To purchase tables and individual tickets,  
visit [www.trybooking.com/156607](http://www.trybooking.com/156607)  
(payment via credit card)

For enquiries, please contact  
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