Adventist HealthCare

Autumn 2023

San Doctor

collaborating with our GPs to provide coordinated community care

Message from Brett Goods, Chief Executive Officer

We are pleased to once again see so many doctors actively participating in this edition of San Doctor, sharing information from each of their fields.

A few exciting new achievements from the San are shared in this edition. We have recently opened the Medical Assessment Unit. This unit will fast-track definitive diagnosis and treatment plans for patients from Emergency Care with aims to improve patient experience and outcomes.

Another recent opening at the San was the ELIA Lifestyle Medicine Centre, offering a comprehensive, wholistic approach to the treatment and prevention of chronic disease. Read more about the Centre in this edition.

We are proud to share some innovative thinking from our staff in the creation of an ultra-fast new process of changing-out failed oxygenators during cardiopulmonary bypass procedures. This invention is being used in other hospitals around Australia and has gained international interest.

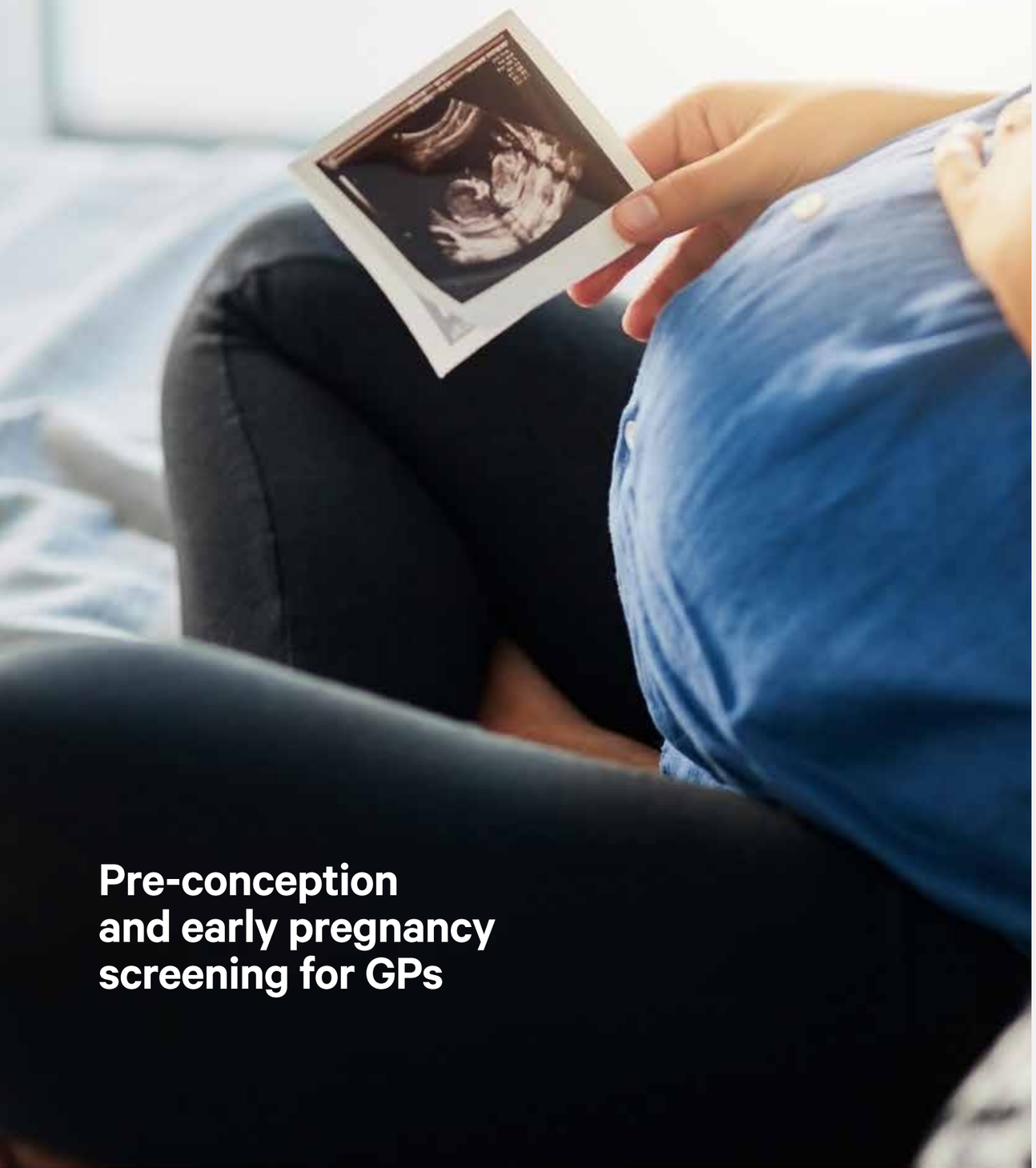
All these positive stories from Sydney Adventist Hospital demonstrate our continuation to provide the best possible care to our community.

Brett Goods, CEO

Chief Executive Officer
Adventist HealthCare Limited

References for articles are available on request.

AN ARTICLE BY **Dr Suelyn Lai-Smith**



Pre-conception and early pregnancy screening for GPs

The provision of holistic pre-conception and early pregnancy care requires planning, follow-up appointments, a comprehensive management plan and having the time to ask those important questions about lifestyle, mental health and safety at home.

Lifestyle

The cornerstones of a healthy balanced diet, daily exercise and a normal BMI are very important pre-conception. An increased maternal BMI increases the risk of miscarriage, still birth and foetal abnormalities, as well as increasing the risk of childhood obesity and metabolic disease later on in life for the offspring.

Moderate intensity exercise of 150-300 minutes per week is recommended if there are no medical contraindications, bearing in mind that the pregnant mother should not overheat, as raising core body temperature over 39 degree Celsius has been shown to be teratogenic.

Tea and coffee are safe in pregnancy, as long as they are consumed in moderation, the recommendations are no more than 300mg/day of caffeine which is equivalent to 3-4 cups of brewed coffee per day. Smoking cessation should be strongly encouraged, and also complete abstinence from alcohol, as there is no known safe limit in pregnancy.

Supplementation

Women trying to conceive should take 0.4mg folic acid daily for at least one month before conception and for the first three months of pregnancy. If there is an increased risk of neural tube defects (BMI >30, anti-convulsant medication, previous child or family history of neural tube defects, pre-pregnancy diabetes) a dose of 5mg daily is recommended.

150mcg iodine daily prior to pregnancy or as soon as possible after finding out they are pregnant is also recommended.

Vaccinations

Check vaccination status for measles, mumps, rubella, varicella, diphtheria, tetanus, pertussis and SARSCoV-2. If the woman is not immune for rubella, varicella and hepatitis B, consider completing their vaccination immunity. If live vaccines (MMR and varicella) are given then the woman should wait for one month prior to conceiving. Influenza and mRNA COVID-19 (Pfizer or Moderna) vaccinations are safe to give to pregnant women at any time of their pregnancy.

Well-being

The Australian Bureau of Statistics estimates that 17% of women have experienced intimate partner violence. Pregnancy increases this risk 3 x fold. It is important to ask women if they have been hit, slapped or hurt in other ways in the last year, if they are afraid of their partner or ex-partner, or if their partner or ex-partner has tried to control, humiliate or threatened to hurt them. If they answer yes to any of the above questions, then ask if they would like help with any of this now and is it safe for them to go home.

Up to 20% women will experience anxiety or depression during pregnancy. Early screening with the Antenatal Risk Questionnaire or Edinburgh Postnatal Depression Scale, can identify those women at risk and ensure additional referrals to mental health professionals and strategies for management during pregnancy are implemented.

Reproductive Carrier Screening (RCS)

RCS should ideally be performed prior to pregnancy. Current RANZCOG guidelines recommend that all expectant couples are offered this testing.

The most common reproductive carrier screening is the 3-panel test. This screens for cystic fibrosis (CF), Spinal Muscular Atrophy (SMA) and fragile X syndrome (FXS)

- 1 in 35 people are carriers for CF in Australia
- 1 in 50 people are carriers for SMA in Australia
- 1 in 332 people are carriers for FXS in Australia
- 1 in 240 couples will be found to have a 1 in 4 chance of having a child with one of these three conditions.

Haemoglobinopathies (Thalassemia & Sickle cell disease)

1 in 20 people world-wide are carriers for haemoglobinopathies, this risk is higher for people with a Mediterranean, Middle-eastern, South Asian or Mid to North African descent.

Initial investigations involve a full blood count, and if from a higher risk population group or the FBE shows a low MCV, then also iron studies and HbEPG or HPLC.

Iron deficiency

Up to 40% women of reproductive age do not have adequate iron intake. The recommended dietary intake of oral in pregnancy is 27mg/day, as the physiological demand for iron is 3 times greater in pregnancy. Certain medications (calcium) and medical conditions (bariatric surgery, IBS, renal disease and H. Pylori) can also reduce oral absorption of iron, so it is important to screen for these in iron deficiency if intake is adequate.

In pre-conception and first trimester if Hb > 110, and ferritin < 30, commence 65mg oral iron daily. If Hb is 70-110, and ferritin < 30, commence 100mg oral iron daily. If Hb 70-110 and ferritin > 30, investigate other causes of anaemia. If Hb < 70 refer to a haematologist.

After commencing oral iron, check response in 4 weeks time. If patients fail to respond to oral iron therapy, then IV iron infusions can be safely and quickly performed in the 2nd and 3rd trimesters as an outpatient.

Ferric carboxymaltose (Ferinject) and Ferric derisomaltose (Monofer) are infusions that can be administered over 15-30minutes and are very well tolerated. The Poon Day Infusion Centre provides this service to outpatients of Sydney Adventist Hospital.

Routine Antenatal Screening

Full blood examination, Blood group and antibody screen, rubella status, syphilis serology (TPHA or TPPA), Hepatitis B, Hepatitis C, HIV and varicella if no history of chickenpox. Midstream urine to screen for asymptomatic bacteriuria.

Targeted Antenatal Screening

Offer chlamydia and gonorrhoea testing for those with risk factors. If the woman is overdue or due for a cervical screening test, it can be performed safely at any time during pregnancy, as long as broom type brush is used, and not an endocervical brush.

Confirmation of pregnancy

Initially test with a serum B-HCG and then follow with a dating ultrasound around 8-10 weeks. If the patient is high risk or has a history of ectopic pregnancy, then a dating ultrasound can be done earlier at 6-7 weeks.

Aneuploidy screening

There are 2 main options for aneuploidy screening in the first trimester:

1. Non-invasive Prenatal Screening (NIPS) also known as cell-free foetal DNA testing, is a blood test collected from the mother anytime from 10 weeks of pregnancy. It can test for trisomy 21, 18, 13 and sex chromosome aneuploidy, as well as gender. NIPS can also be used in twin and triplet pregnancies. It has a sensitivity of > 99% for T21, T18 and T13 and a false positive rate of 0.1%.

   If the result returns as high risk, then the patient can be offered diagnostic testing in the form of chorionic villi sampling (CVS) or an amniocentesis.

   Recently, a genome-wide NIPS has become available. At present, RANZCOG do not recommend routine population screening with genome-wide testing due to the lack of clinical evidence.

   Even with a low-risk NIPS, an early anatomy ultrasound is still recommended at 12-14 weeks to detect for twins, look for major structural abnormalities and confirm the gestational age.

   The early anatomy ultrasound is commonly mistaken by patients to be the same test as a Nuchal Translucency Ultrasound, as they are performed at similar timeframes.

2. The Nuchal Translucency Ultrasound - can be performed between 11.5 – 14 weeks. It is a combination of a maternal blood test (B-HCG, PAPP-A and PlGF) and an ultrasound that measures the nuchal translucency on the foetal neck. It has a detection rate of 95% for Trisomy 21.

   Ordering a NIPS and Nuchal Translucency Ultrasound simultaneously for a patient does not increase the detection rate of aneuploidy. It does however increase the false positive rate and can create unnecessary anxiety and additional testing for the mother.

   Current best practice is to arrange a NIPS (from 10 weeks) and early anatomy ultrasound (12-14 weeks) OR alternatively, a Nuchal Translucency Screen (11.5-14 weeks).

Pre-eclampsia screening

Recently, women have been able to have pre-eclampsia screening performed as part of their 12-14 week ultrasound. This test measures the likelihood of women developing early onset pre-eclampsia during their pregnancy.

Specialist women's ultrasound centres like Ultrasound Care can provide this screening test which involves measuring the blood flow in the uterine arteries, first trimester blood tests, blood pressure, as well as personal and family history. If the mother has a high-risk result, then starting low dose aspirin of 150mg at night until 36 weeks of pregnancy, can reduce the risk of complications by 50% and more.

As with all things, preventative medicine is the best kind of medicine. By providing appropriate screening, counselling and support to couples looking to conceive or in the early stages of pregnancy, care providers can make a large impact on the physical and psychological well-being of expectant mothers, and also improve the short and long-term outcomes for the pregnancy, birth and beyond.

Dr Suelyn Lai-Smith

BSc(Psych)Hons BMed(Newcastle) FRANZCOG

Dr Suelyn Lai-Smith is a specialist obstetrician and gynaecologist who provides patient centred care. She completed her specialist training at two of the busiest tertiary hospitals in Sydney (Nepean and Westmead) and undertook a surgical fellowship year in advanced laparoscopic and open procedures in gynaecological oncology at the Royal Hospital for Women.

Prior to studying medicine, Dr Lai-Smith worked as a psychologist, and subsequently has a caring and holistic approach to her patient care. She is confident managing both high and low risk pregnancies and engages collaboratively with her patients to involve them in all aspects of their care.

Dr Lai-Smith manages all general gynaecological conditions like abnormal pap smears, colposcopy, contraception, pre-conception counselling, infertility, heavy menstrual bleeding, polycystic ovarian syndrome, endometriosis, ovarian cysts, vaginal prolapse, menopause and post-menopausal bleeding.

She also performs endoscopic, laparoscopic and vaginal surgery for her patients.

CONTACT INFORMATION

Parkway San Clinic
Suite 307, 172 Fox Valley Road
WAHROONGA
(02) 9489 8714
(02) 9487 2718
info@drsuelynlaismith.com.au
www.drsuelynlaismith.com.au

San opens Medical Assessment Unit

In an exciting development for the San, a new Medical Assessment Unit opened on the 1st of May, with ten beds on the Gee ward specifically designated for the new unit.

The purpose of the Medical Assessment Unit (MAU) is to fast-track definitive diagnosis and treatment plans for patients from Emergency Care. The MAU model of care will benefit patients through expedited clinical assessment and rapid diagnostics – all within the first 24hours.

How the MAU works:

In Emergency Care, patients will be assessed by the EC physician and if they meet particular criteria, they will be transferred directly to the MAU. Due to the fast-paced nature of the MAU, the unit will have dedicated medical support as part of an interdisciplinary team which includes physiotherapists, social workers, pharmacists and a liaison nurse.

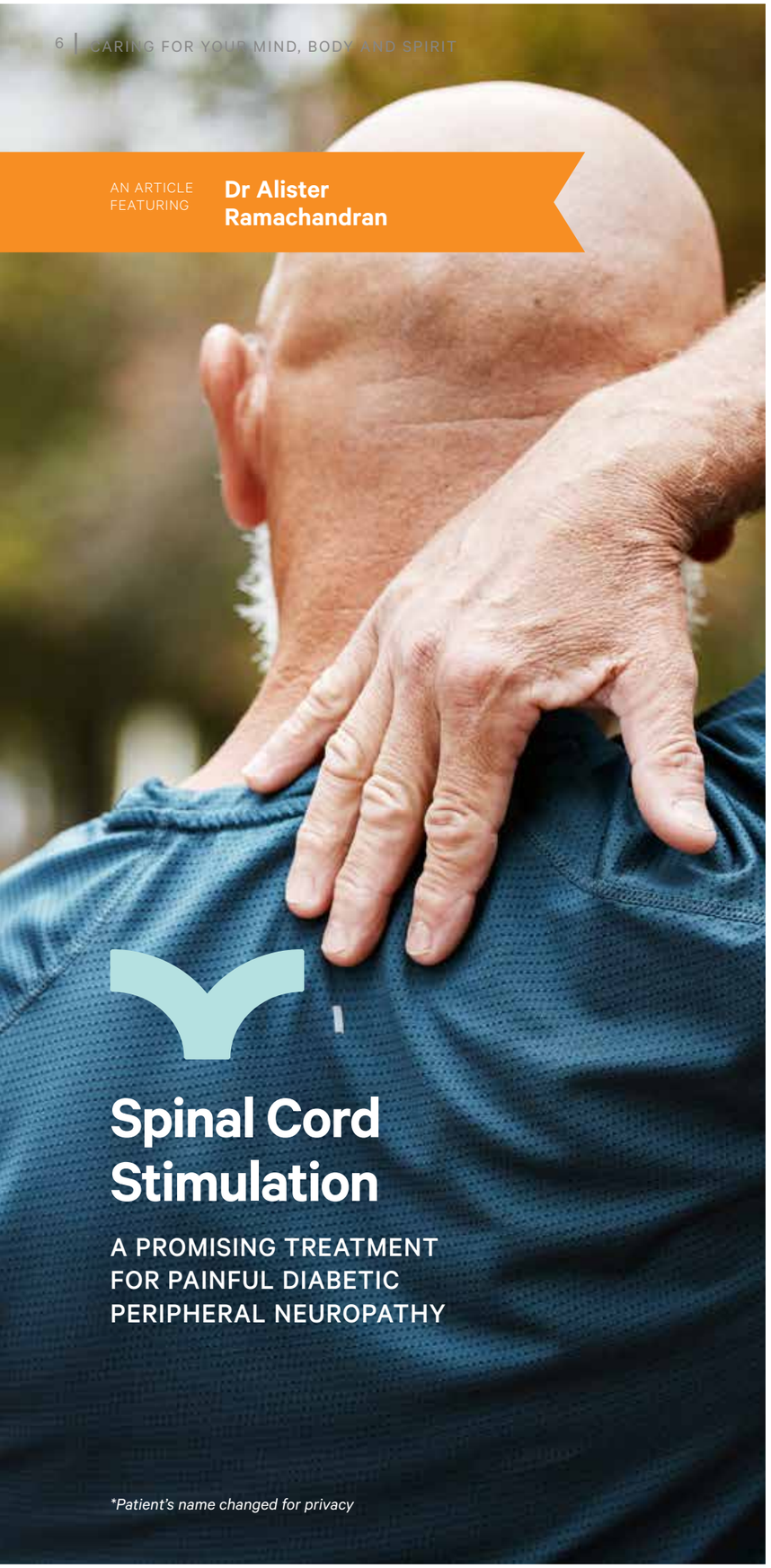
The goal is for patients to have a comprehensive clinical assessment, be reviewed by members of the interdisciplinary team, and have all their tests completed within the first 24 hours. This facilitates diagnosis and enables treatment plans to be put in place much faster, so patients can either be admitted under the relevant subspecialty within the hospital, or be discharged home with appropriate support services.

The expected length of stay for patients in the MAU is 72 hours or less.

Medical Assessment Units have been in place in Australia for a number of years. The MAU model of care has been shown to improve coordination of care, increase patient satisfaction, and reduce the incidence of adverse patient outcomes. Patients also benefit from shorter waiting times associated with the assessment and treatment of acute conditions, and lower readmission rates.

It is anticipated that the 10 beds currently allocated to the MAU at the San will be outgrown, and the aim is to expand the number of beds as the demand requires.

The Medical Assessment Unit will be an invaluable service, providing more coordinated and timely management of patient care following admission to EC. MAUs have been shown to enhance patients' experience and outcomes, and we look forward to the difference this unit will make to patients.



AN ARTICLE FEATURING **Dr Alister Ramachandran**

Spinal Cord Stimulation

A PROMISING TREATMENT FOR PAINFUL DIABETIC PERIPHERAL NEUROPATHY

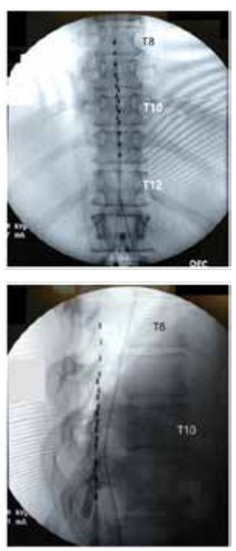
**Patient's name changed for privacy*

Spinal cord stimulation has emerged as a promising treatment option for patients with chronic pain from diabetic peripheral neuropathy (PDN) – a condition caused by nerve damage due to chronically high blood sugar levels in people with diabetes. PDN can lead to severe pain, numbness, mobility issues, feet deformities and loss of function, affecting quality of life.

The National Institute of Health and Welfare reported more than 1.3 million people living with diagnosed diabetes in Australia in 2020, and many more undiagnosed – unaware they have the disease. Insidious nerve damage can occur long before symptoms are noticed.

Dr Alister Ramachandran, an Interventional Pain Medicine Specialist at the San, said that around 20-26% of diabetics will develop PDN, and a third of these may have significant pain that affects their quality of life.

However, there is new hope for them, in the form of spinal cord stimulation (SCS). "Historically SCS was used for patients with chronic pain after back surgery, and conventional treatment used low or 'burst' frequency stimulation," said Dr Ramachandran. "Novel therapy using high frequency (or 10 kHz) stimulation has not only enhanced the pain relief delivered in patients with spinal pain but is also a new indication for use of SCS therapy in PDN."



Lead Placement

Spinal cord stimulation

Spinal cord stimulation, also known as neurostimulation, can be an effective alternative or adjunct treatment to other therapies that have failed to manage chronic pain on their own. SCS has been used in a variety of conditions for more than 60 years and is a minimally invasive and reversible treatment for chronic pain.

"Over 50,000 undergo SCS procedures each year worldwide," noted Dr Ramachandran. "SCS implants have two components: usually two implantable epidural leads and a pulse generator (IPG). The IPG is placed subcutaneously, typically in a lower lumbar or abdominal region – based on patient preference. The IPG is programmed to transmit electrical impulses to the spinal cord, dampening pain signals transmitted to the brain."

"In a recent randomised control trial published by Erika Peterson et al, more than 80% of patients had a positive response following implantation of SCS, and 50% experienced profound pain relief, i.e., their pain was reduced by more than 80%. Furthermore, 70% reported good reduction in pain levels which lasted more than two years. Initially, the primary outcomes evaluated using SCS for PDN was to relieve intractable pain. However, during a two-year study, we also found that neurological symptoms, especially sensory function, improved for two-thirds of all implanted patients," added Dr Ramachandran. "This disease-modifying effect has not been previously reported for any other spinal cord stimulation study."

Assessing suitability for SCS therapy

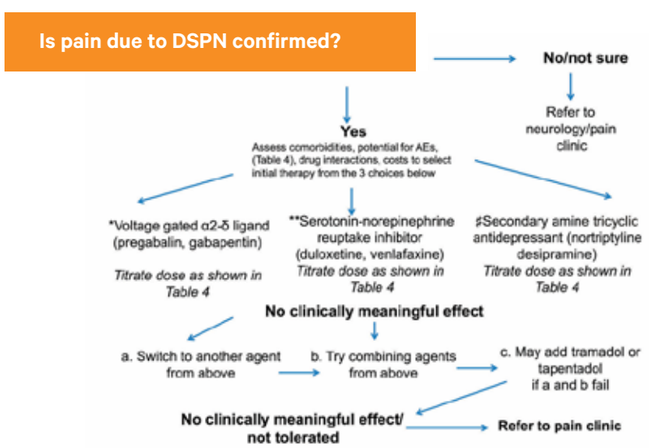
Dr Ramachandran said patients suitable for SCS implants are those with good glycaemic control (as measured by HbA1c levels < 10%) and those with inadequate relief of symptoms with pharmacological therapy. "Patients with very poor glycaemic control and significant comorbidities may not be suitable candidates for SCS. In addition, pain scores and functional impairment are considered in the assessment criteria."

"It is essential that neuromodulation be offered only as part of a multidisciplinary intervention," added Dr Ramachandran. "While medical interventions like pharmacotherapy and neuromodulation have an important role in pain management, addressing the psycho-social issues is equally important. To obtain the best outcomes, a thorough pre-implant evaluation is paramount."

"SCS and high frequency has now received endorsement as a novel treatment option for PDN from American Diabetes Association via the 2022 clinical compendia, American Association of Clinical Endocrinology via clinical practice guidelines published in October 2022 and the German Diabetes Association via clinical practice guidelines updated in 2021," noted Dr Ramachandran.

The advantage of reversibility and SCS therapy

SCS has several benefits for people with PDN, including decreased pain and reduced opioid use, fewer presentations to the emergency department, and less time in the hospital. "Patients also report regained functionality and better quality of life indices," said Dr Ramachandran. "The beauty of SCS therapy is that it's a completely reversible, minimally invasive therapy. For a suitable patient, it is certainly worth a trial when pain is poorly managed."



Dr Alister Ramachandran

MBBS DA FCARCSI FANZCA
DPMed(CARCSI) MSOMM FIPP
FFPMCAI FFPMANZCA

Dr Alister Ramachandran is an Australian trained specialist in Anaesthesia and Pain Medicine.

Dr Ramachandran was awarded dual specialist qualifications in the field of Anaesthesia and Pain Medicine in both Australia and Ireland. He has a special interest in Interventional Pain Medicine and has completed the World Institute of Pain certification (FIPP), which is the highest level of accreditation in the field of interventional pain management.

He has over 20 years of experience in Anaesthesia and he has been helping patients with chronic pain for the last 10 years.

In addition to his clinical work, Dr Ramachandran is a highly respected Senior Medical Lecturer and medical examiner for upcoming Pain Specialists and is committed to advancing the field of pain management through education and research.

With a passion for improving the lives of those suffering from chronic pain, Dr Ramachandran is actively involved in research, collaborating with other experts in the field to develop innovative approaches to pain management.

Through his dedication, expertise and compassionate approach, Dr Alister Ramachandran has become a trusted leader in the field of pain medicine.

CONTACT INFORMATION

Pain Med
Suite 202
172 Fox Valley Road
WAHROONGA
(02) 8999 1054
(02) 8999 1059
contact@painmed.com.au
www.painmed.com.au

ELIA Lifestyle Medicine Centre launch

Adventist Healthcare, operators of Sydney Adventist Hospital, opens lifestyle medicine centre to tackle chronic disease.

A novel lifestyle medicine centre launched on Sunday 26th of March, at Sydney Adventist Hospital, Wahroonga, offering a comprehensive, wholistic approach to the treatment and prevention of chronic disease.

Sydney Adventist Hospital (fondly known as the San) has maintained a wellbeing and health-promotion focus for inpatients since it opened in 1903 as Sydney Sanitarium – a place where people learnt how to stay well. Now ELIA Wellness, a health promotion charity and a sister organisation to the hospital has a new centre for outpatients, targeting chronic and lifestyle-related diseases.

"The ELIA Lifestyle Medicine Centre uses evidence-based lifestyle medicine consultations, group programs and interdisciplinary interventions to address the root cause of the chronic disease," said Dr Andrea Matthews, Medical Director of the ELIA Lifestyle Medicine Centre. "Establishing the centre at the hospital complements the excellent acute-care facility in combating chronic disease. Anyone from the community can attend programs at the centre – with or without a GP referral."

"The Lifestyle Medicine Centre offers the combined expertise of lifestyle medicine physicians, dieticians, exercise physiologists, registered nurses, health coaches and psychology care all in the one centre," added Dr Matthews. "We work in close partnership with the patient's GPs and specialists, and provide additional expert resources, programs and support to address chronic disease and promote wellness."

Dr Geraldine Przybylko, ELIA Wellness Director said, "We understand that some patients need additional motivation and coaching not only for their physical health, but also for their emotional, social and spiritual health. This is where the ELIA Lifestyle Medicine Centre aims to use a whole-person health approach to help the patient achieve their goals."

Chronic disease accounts for 90% of deaths in Australia^ and they are largely preventable. Half the population lives with at least one chronic disease*, and a person's risk of poor quality of life or dying prematurely rises with each additional chronic illness. There is a great need to more effectively help people to live well.

The most common chronic diseases in Australia include diabetes, cardiovascular disease, cancer, arthritis, obstructive lung disease, and mental health disorders. Many chronic diseases share the same risk factors such as smoking, obesity, alcohol misuse, physical inactivity, high blood pressure, chronic stress, and a poor diet. Many risk factors are modifiable, whereby changes to lifestyle habits can markedly improve overall health and wellness. Not all disease has a lifestyle-related precipitant, but even then, lifestyle medicine initiatives can greatly improve quality of life in many cases.

"Lifestyle medicine as a way to tackle chronic disease and promote optimal wellness has been a respected, evidence-based discipline in healthcare for many years – particularly in the USA," said Brett Goods, San CEO. "In Australia however, despite equally staggering rates of chronic disease, having a lifestyle medicine centre co-located with a hospital is still a new concept."

"Living with a chronic disease can be very debilitating and discouraging, with significant impact on the quality of life of patients and their loved ones. When supporting people who suffer from chronic illness, it is crucial we use a compassionate, evidenced-based approach," he said.

The ELIA Lifestyle Medicine Centre programs commenced on April 17. Contact the Centre for more information.

About Sydney Adventist Hospital

Sydney Adventist Hospital, fondly known as 'the San', is operated by Adventist HealthCare Limited. It has been a leading healthcare provider for 120 years (since opening in 1903) and has grown to become NSW's largest not-for-profit private hospital. www.sah.org.au

About ELIA Lifestyle Medicine

ELIA Wellness is a division of Adventist HealthCare and was formed to champion the cause of lifestyle medicine in practise, research and policy. The ELIA Lifestyle Medicine Centre offers evidence-based programs encompassing seven dimensions of wellness: physically energised, emotionally thriving, environmentally attuned, intellectually engaged, socially connected, spiritually empowered, and vocationally enriched. ELIA stands for Empower Lifestyle Innovation Advocates. www.eliawellness.com

About lifestyle medicine

Lifestyle medicine provides an interdisciplinary, whole-system approach to treat, prevent and, in many cases, even reverse the progression of chronic and lifestyle-related diseases. It does this through the modification of behavioural, social, and environmental drivers**.

CONTACT INFORMATION
Suite 103, Level 1, San Clinic Tulloch
185 Fox Valley Road
WAHROONGA
(02) 9480 6140
clinic@eliawellness.com
www.elialmc.com

AN ARTICLE BY **Professor Gerald Fogarty**

What's new in the radiotherapy of skin?

The main benefit that radiotherapy (RT) brings to oncology is tissue conservation.

RT usually treats a mixed population of tumour cells and normal cells. The tumour cells have bad DNA radiation repair mechanisms, the normal cells have good ones. So, a small amount of radiation delivered every day can be repaired overnight by the normal cells so that they can survive and continue living. The tumour cells cannot repair that damage, so they die. This is why radiation treatment is given in small amounts called fractions over a long time. If the dose per fraction is too great, then some of the repair capacity of the normal cells is swamped and some of the normal cells will die and are eventually replaced by fibrous tissue (leading to long term side effects). Fractionation means that normal tissues do not need to be sacrificed as they are when they are surgically cut out with the tumour. The tissue conservation delivered by fractionated RT leads to better survivorship.

RT has benefited from recent advances in technology and biology. For technology, a new way of delivering RT is volumetric modulated arc therapy (VMAT). Essentially this is a radiation source put into a CT ring so the source goes around the patient during treatment. Traditionally RT was delivered via beams that were anterior, posterior or lateral to the patient. The overlap of these beams gave a dose distribution inside the patient that was shaped like a square or a box. However, tumours and bodies come in curves. VMAT enables treatment of curved surfaces so that the dose to cancer can be increased, with increasing cure rates, and dose to normal structures can be decreased, so minimising side effects in normal tissues.

Most skin affected by sun damage that can give rise to skin cancers are thin curved convex volumes such as the scalp, forehead, forearms or lower legs. These areas are now easily treated with VMAT. The publication of our first 100 cases had a one-year control rate of 98% compared to 74% of dermatology best which is topical 5 fluorouracil. This needs to be validated in a prospective trial which will be open at SAH in 2023.

Biology advances show that non-melanoma skin cancers are relatively radiosensitive meaning lower doses can be used and breaks can be put in treatment without impacting cure. We developed the adaptive split course radiotherapy for skin (ASCRT) which allows a high dose palliative treatment for the patient with inoperable cancer. The course lasts for one week, followed by a 6-8 week break, and then another week if needed, rather than having weeks of RT. This is great for older folk who may be beyond surgery because of needing to be anticoagulated, or unable to have weeks of bedrest for a leg graft to take, or who can't have or don't want a general anaesthetic.

Another biology advance is that it seems that some benign diseases are radiosensitive. We have discovered this when skin suffering from these diseases have been inadvertently irradiated during skin cancer treatment. We published a small series of patients with recalcitrant rosacea who remain controlled in field after a few years with a relatively low dose of VMAT. This has led to the ROSEND randomised trial, comparing VMAT to dermatology best for recalcitrant rosacea. This trial will open at SAH in 2023. Phase one trials in end-stage hidradenitis suppurativa and recalcitrant plaque psoriasis are also in development.

A positive from COVID has been the acceptance of online (virtual) clinical consultation. With SAH skin community we are developing pathways for rural and remote patients with complex skin cancers to access online multidisciplinary care, especially now that effective systemic therapies exist for cancers such as Merkel Cell Carcinoma and metastatic or locally advanced cutaneous Squamous Cell Carcinoma. SAH is perfectly placed for this service, given its peripheral location in Sydney, great parking and onsite three-star hotel.

Radiation Oncologists are no strangers to research as this underpins all we do. The ANU partnership with SAH is a fertile ground for future radiobiological studies. Skin is a good research platform as it can be biopsied pre, post and during treatment and can be observed without needing scans. Often patients have multiple cancers so can provide their own phenotypic control. Through another ICON partner, Varian, we hope to get a new research linear accelerator at SAH to do first in world studies using "Flash" electron radiotherapy in skin in humans starting in 2024.

All up, the partnership of ICON Radiotherapy Department and SAH is creating new opportunities for service and research to better the plight of those suffering from skin diseases. This is a responsibility we have for the world, given the prevalence of skin disease in our country and the excellent health system we have.

Professor Gerald Fogarty

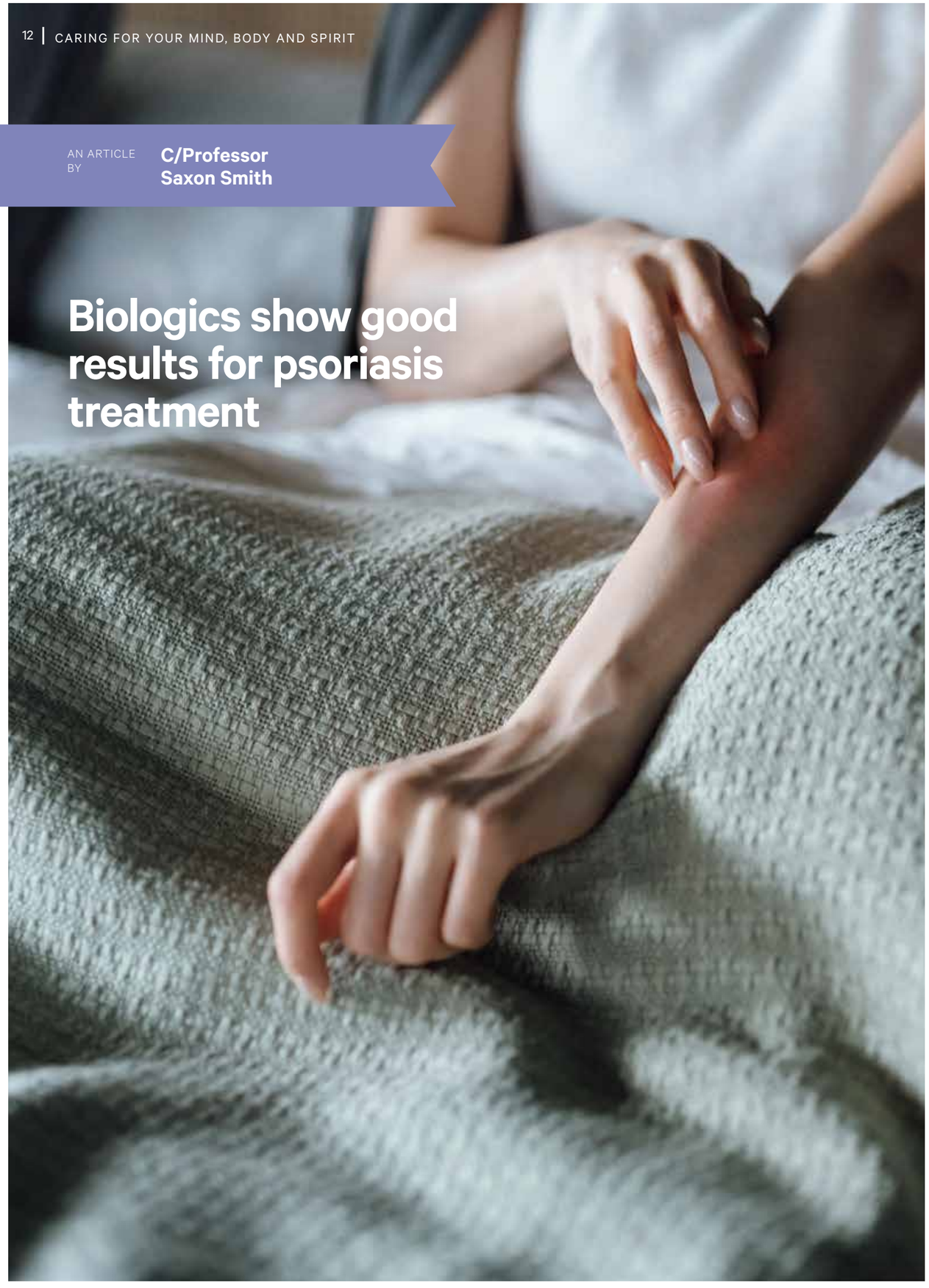
BSc, MBBS, FRANZCR(FRO), PhD

Professor Gerald Fogarty is a Radiation Oncologist with a special interest in the treatment of skin disorders. He trained at the Peter MacCallum Cancer Centre in Melbourne and has held positions of Director of Radiation Oncology at St Vincent's Hospital and Mater Hospitals, Sydney. He has over 180 publications. For his skin publications see **www.drgeraldfogarty.com/publications**. He authored the radiotherapy section of the 2019 NHMRC National Clinical Practice Guidelines for Keratinocyte Cancer. He consults and treat patients in Wahroonga, Gosford and Revesby.

CONTACT INFORMATION

Icon Cancer Centre,
Sydney Adventist Hospital
185 Fox Valley Road
Wahroonga

(02) 9480 4200
(02) 9487 9303
admin.wahroonga@icon.team



AN ARTICLE BY **C/Professor Saxon Smith**

Biologics show good results for psoriasis treatment

A San dermatologist has contributed to an important study that demonstrates the effectiveness of monoclonal antibody therapies for a broad range of patients with moderate-to-severe psoriasis in a real-world setting.

The management of psoriasis has been transformed by the availability of monoclonal antibody therapies, or biologics, over the past two decades, dramatically improving the quality of life for many. Their availability was made possible following several clinical trials on a variety of biologics.

Now, the first longitudinal study confirms and expands on earlier randomised controlled trials (RCTs) by looking at the performance of approved biologics in a real-world setting.

Sydney Adventist Hospital (SAH) dermatologist Professor Saxon Smith says the results – recently published in the Journal of the European Academy of Dermatology and Venereology – are good news for moderate to severe psoriasis sufferers.

“Randomised controlled trials are the gold standard,” explained Professor Smith, a researcher with the study and a co-author of the paper. “However, they do not necessarily reflect the treatment complexities encountered in real-world practice due to stringent study criteria that prevent the inclusion of a more heterogenous patient population.

“In real-world clinical practice, we see a much broader variety of patients, with about 30 per cent of patients with psoriasis also developing a unique form of arthritis.

“The study is important because it included everyone with psoriasis seen on a day-to-day basis. We captured all patient conditions and all biologics being used – primarily the anti-IL-17A antibodies and anti-IL-23 antibodies, as well as any other originator or biosimilar biological medication indicated for the treatment.”

The three-year Psoriasis Study of Health Outcomes (PSoHO) enrolled nearly 2000 patients across 240 sites in 23 countries. It is an ongoing 3-year observational cohort study in adults with chronic moderate-to-severe plaque psoriasis initiating or switching to a new biologic. The study will wrap up this year with the final paper due later this year.

“Key findings demonstrate a high efficacy across all patients, with the IL-17 group, in particular, experiencing high rates of rapid and sustained clearance, particularly for those with arthritis,” explained Professor Smith.

“This longitudinal data in a real-world setting confirm RCT results that biologics are an effective treatment. This should reassure dermatologists and GPs that we can reliably prescribe these therapies for any population and expect transformational changes.”

Clinical Professor Saxon D Smith AM

MBChB MHL PhD GAICD
FAMA IFAAD FACD

Clinical Professor Smith is a consultant dermatologist in St Leonards and Gosford. He has extensive clinical and research interests including atopic dermatitis, psoriasis, hidradenitis suppurativa, melanoma, non-melanoma skin cancer, adverse cutaneous drug eruptions, and managing the complex skin needs of oncology/haematological patients and transplant recipients. He has an interest in lasers, microneedling, UltraformerIII and injectables for medical and cosmetic purposes including acne and burns scarring, and hyperhidrosis. He sees adults and children.

CONTACT INFORMATION

The Dermatology and
Skin Cancer Centre
St Leonards, NSW 2065
(02) 9413 2655
crowsnestadmin@dermcentre.com.au
www.dermcentre.com.au
www.painmed.com.au

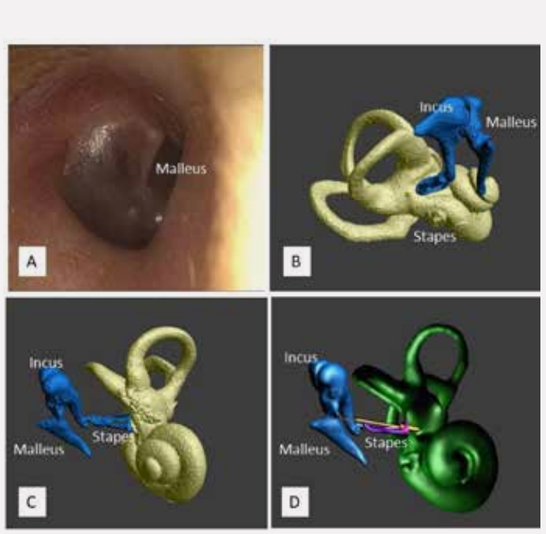
AN ARTICLE BY
A/Professor Payal Mukherjee

Management of conductive hearing loss in adults

When adults present with conductive hearing loss with a normal tympanic membrane, the most common cause is otosclerosis.

A detailed understanding of the deep relations of the footplate is crucial to assess the risks and outcomes of interventions. The utricle and saccule lie immediately deep to the stapes footplate[1] and in 50% of patient's periotic connective tissue connect the Utricular macula (where vestibular sensory cells are located) directly to the stapes footplate. In these patients even minor trauma to the stapes footplate can risk vestibular dysfunction[2].

Otosclerosis is the most common disease affecting the stapes bone which gets fixed and is unable to conduct sound to an otherwise healthy inner ear. The disease is typically slowly progressive but it can accelerate during pregnancy. There is often a family history although no specific gene has as yet been identified. Unlike the stapes superstructure, the stapes footplate embryologically arises from the Otic capsule. Therefore, Otosclerosis selectively affects the stapes footplate but may spread to the Cochlea. Patients commonly present with conductive hearing loss but if disease spreads to the cochlea, sensorineural thresholds maybe affected and patients may present with mixed loss.



This figure shows the right ear drum as seen when looking into the ear (A), and a microCT reconstruction of the hearing bones in (B) if someone were to look immediately deep to the ear drum shown in (A). There are 3 hearing bones, Malleus (hammer), Incus (anvil) and Stapes (stirrup) which appear in blue. Image (C) and (D) is a view of the hearing bones looking from the front of the patients face. The hearing bones conduct the sound to the inner ear (yellow structure in C and green in D) where the cochlea and vestibular organs are located.

Treatment options:

Non-surgical:

All patients with Otosclerosis must be encouraged to have a hearing aid trial. Hearing aids effectively treat many patients affected with Otosclerosis and trials are routinely offered by audiologists at no cost to the patient.

Surgical:

Stapedotomy surgery is used to overcome conductive hearing loss. Stapes surgery involves creating a small perforation in the base or "footplate" of the stapes bone typically 0.5-0.6mm in size. The arch of the stapes bone or stirrup is removed and instead a piston is clamped onto the incus long process as shown in the image D. The stapes footplate only measures on average 3x1.5mm in length and breadth and is on average 0.2-0.4mm thick[3]. Very fine pressure can facture the footplate or shatter it. This may cause free floating bones to fall into the inner ear damaging the cochlear and balance organ causing permanent disability.

Therefore, often a laser is used to manipulate these fine bones and create the perforation in the stapes footplate. A piston typically 0.4mm in width and ranging from 3.5-4.5mm in length to fit the patient's anatomy is measured on the operating table chosen and hooked around the incus. The ear drum is then placed back. If the operation is being done under local anaesthetic, the surgeon can then test the patient's hearing on the operating table to see if the hearing has improved or whether the piston needs to be adjusted. The operation can also be done under a general anaesthetic, in which case the hearing is tested some weeks later when the ear has healed and swelling has subsided[4].

Otologists commonly view stapedotomy surgery as the pinnacle of technical finesse. The operation requires the surgeon to master skills of fine tremor control, attain microscopic accuracy, strategise advantages of microscopic tensile strengths of a drop of water or blood in the right place to prevent microtrauma. Done well, it can attain excellent hearing outcomes. However, even 0.5mm of inaccuracy can lead to permanent hearing loss and disabling vertigo (Figure 2). For this reason, some surgeons choose to do the procedure under local anaesthetic (Figure 3), if the patient can tolerate it.

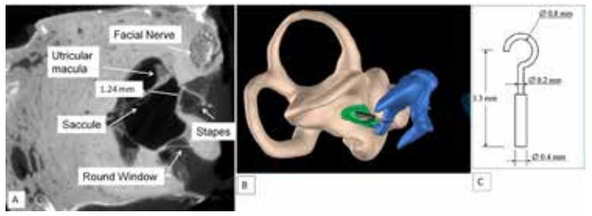


Figure 2: Stapes surgery involves handling microscopic structures in a non-traumatic manner. Only 1 mm below the bone are some very important structures of the inner ear, shown in Image A. Damage of these can cause disabling vertigo and complete loss of hearing. Drills or manual picks are too unstable for the footplate of the stapes bone as they can fracture it and cause permanent damage to the hearing of the patient. A piston typically 4mm in length and 0.4 mm in diameter is put through a 0.5mm hole created in the stapes bone (Image B and C). The piston needs to be placed through this 0.5mm hole, so it sits 0.5mm deep to the stapes bone inside the inner ear. With the inner ear structures (in A) being only 1.24mm away, the margin of error between success and disaster is a matter of microns. A laser allows the surgery to be done safely and is currently the standard of care This operation is to this day considered the most skillful operation for an ear surgeon to perform.

Figure 3: An Otologic laser being used for Stapes Surgery being conducted under local anaesthetic kindly donated by the San foundation

Implantable hearing aids:

In some patients, stapedectomy surgery may not be possible due to unfavourable anatomy or other disease processes. Bone conduction hearing aids can be used to treat hearing loss. Bone conduction hearing aids can be active or passive. These devices bypass the middle ear mechanism completely and are implanted in the bone behind the ear. Modern bone conduction hearing aids are generally placed under the skin but a speech processor needs to be worn behind the ear held by a magnet to hear the sound. In this setting, active implants such as the BoneBridge (MED-EL ltd, Innsbruck, Austria) or OSIA (Cochlear ltd, Sydney, Australia) tend to have better hearing outcome than passive implants such as the BAHA (Cochlear ltd, Sydney Australia) or Ponto (Oticon ltd Australia). The passive implants can also be worn with a magnet or clipped to an abutment through the skin.

Cochlear Implants: Many patients are more familiar with Cochlear Implants. In the setting of Otosclerosis, Cochlear implants are only a solution when Cochlear Otosclerosis has caused such advanced sensorineural hearing loss that hearing aids are no longer effective. Stapes surgery can only assist to treat conductive hearing loss due to Otosclerosis. Stapes surgery assists the sound to be delivered to the Cochlea in essence restoring natural hearing. Cochlear implants stimulate the cochlear nerve. Typically hearing results of Cochlear outcomes can take up to 12 months and the sound is electronic. Cochlear Implant can give excellent hearing outcomes but there are many other variables and intense rehabilitation required for its success. Surgery is only a small part in the outcome of a successful cochlear implant.

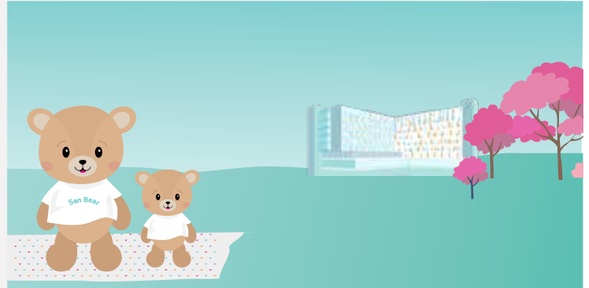
Associate Professor Payal Mukherjee

MBBS, FRACS (ORLHNS), MS (USyd)

Dr Payal Mukherjee is an adult and paediatric ENT Surgeon with special interest in hearing and balance disorders. She has subspecialty fellowship training in otology, cochlear implantation and lateral skull base surgery. Dr Mukherjee is an executive member of the NSW committee of RACS, the ENT lead for research at the RPA institute of academic surgery and a board member on the Meniere's research fund. She is a senior clinical lecturer at the University of Sydney.

CONTACT INFORMATION

Sydney ENT Hearing and Balance Centre
Suite 210, San Clinic Tulloch,
185 Fox Valley Road, Wahroonga
(02) 9989 8080
(02) 9475 0220
reception@entcaresydney.com.au
www.entcaresydney.com.au/



Teddy bears take their picnic to Sydney Adventist Hospital

If you had been down in the woods on May 10th, you would have had a big surprise. Teddy bears across Sydney were kind enough to invite their humans along to their special Teddy Bears' Picnic held on the front lawn of Sydney Adventist Hospital (the San) on 10th May.

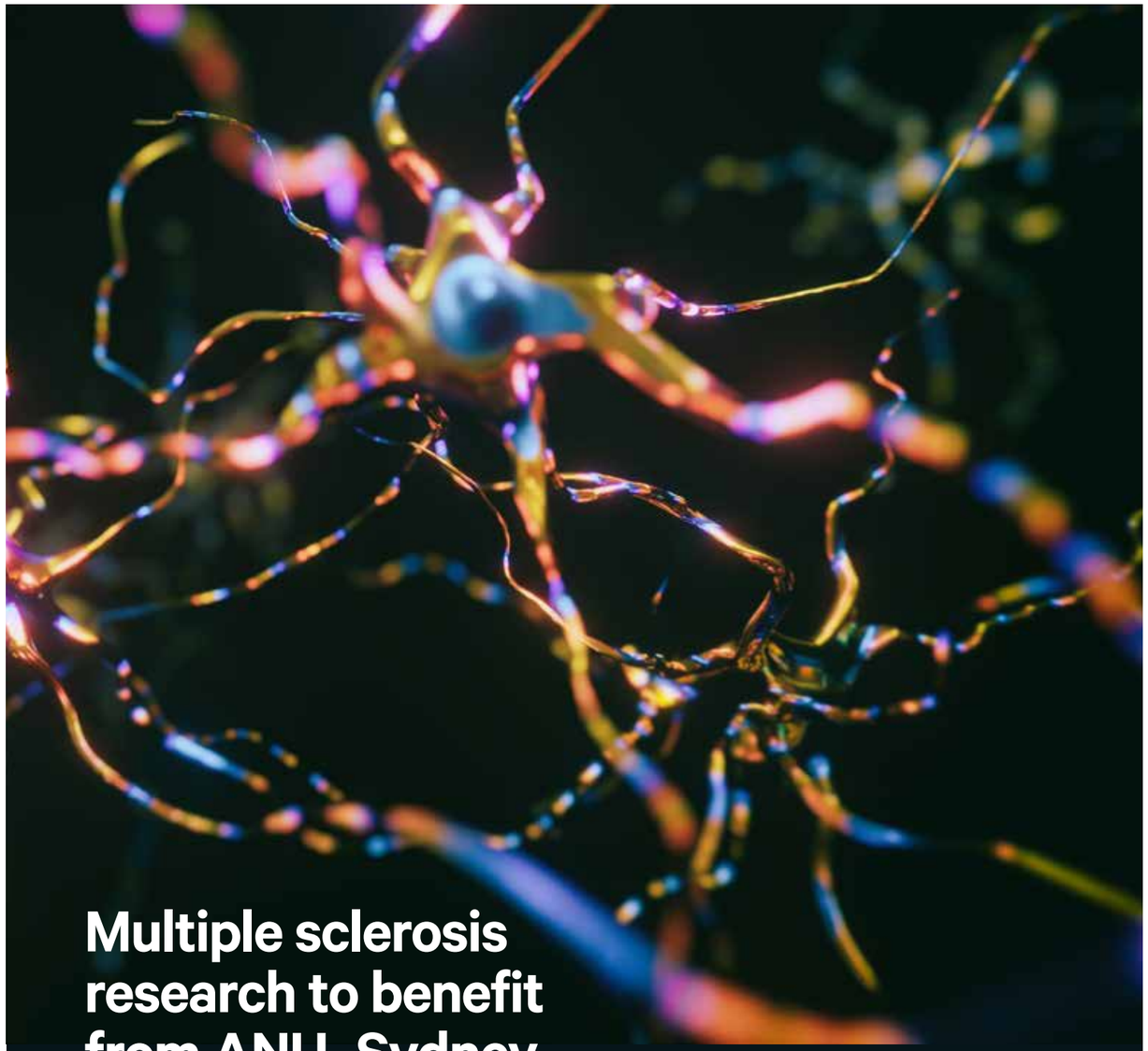
Teddy bears of all shapes and sizes gathered with more than 700 mums, dads, babies, toddlers, grandparents – overjoyed at finally being able to picnic together again after three interrupted covid years.

It was a great opportunity for returning San families to interact with new families of San babies, while catching up with the hospital's obstetricians, midwives, paediatricians and women's health staff. For maternity staff and doctors, the Teddy Bears' Picnic is the highlight of the year – getting to see the babies they delivered and how much they've grown and developed. The San has been delivering babies for over 100 years, and in recent years, on average the hospital delivers about 2000 babies annually.

In true teddy bear picnic style, there were lots of marvellous things to eat, and wonderful games to play. The San Bear mascot showed other teddies how much fun it is to give lots of bear hugs and pose for photos with new parents and bubs.

With face painting, play equipment, delicious food and snacks, a photobooth and gift bags filled with goodies, everyone was sure of a treat. Children's entertainers, The Beanies, performed a show on stage to the delight of the crowd, and even tired little teddies and toddlers had big smiles on their faces.

At the end of the picnic – if you listened very carefully – you would have heard a few strains of the Teddy Bears' picnic song: For every bear that ever there was, gathered there for certain because, it was the day the teddy bears had their picnic.



Multiple sclerosis research to benefit from ANU–Sydney Adventist Hospital collaboration

People living with multiple sclerosis in the Sydney region have a new opportunity to help shape the way MS is treated and monitored in the future, with a new partnership between the Australian National University and Sydney Adventist Hospital.

MS Our Health in Our Hands (OHIOH) is an initiative of ANU, bringing together researchers, clinicians and people with lived experience of MS to develop new approaches to the personalised management of this condition. The ANU is a major university partner of Sydney Adventist Hospital, and MS OHIOH is the first research collaboration between the two organisations.

A symposium held at Sydney Adventist Hospital on 30th March marked the launch of the new Sydney MS OHIOH research clinic – based at the hospital. This is the sister site to the MS OHIOH research project at ANU in Canberra, and will give the Sydney MS community the opportunity to participate in the important field of MS research.

Why is MS OHIOH needed?

Multiple sclerosis (MS) is the most common demyelinating condition in adults. In MS, the myelin sheath that usually protects nerves is damaged, rendering the nerves unable to communicate messages from the brain to the rest of the body in the usual way. This can cause symptoms such as loss of motor function, pain and loss of sensation. It affects movement in the limbs, and can impact vision, memory, and fatigue levels.

The way MS manifests in individuals over time, the symptoms of the disease and how individuals respond to treatment is incredibly varied and unpredictable. There is a lot about MS that still confounds the MS community.

"I remember the days when the only treatment for MS was intramuscular dexamethasone," said Professor Geoffrey Herkes, neurologist and Director of Research at Sydney Adventist Hospital. "Thankfully times have changed. Through the hard work of researchers, clinicians and people living with MS who have driven the research, we now know a lot more about MS, and have many more treatment options. However further research is crucial to improve the way we detect, treat and ultimately prevent MS from progressing."

This is what motivates those involved in MS OHIOH. "Effective prediction of disease progression and outcomes remain elusive," said Associate Professor Anne Bruestle, the MS Research Lead in OHIOH since 2017 and Chair of OHIOH since 2022. "While a large array of therapeutic options is now available, navigating the choice of treatment is not supported by clear guidelines based on biomarkers. A major challenge in MS is being able to ascertain appropriate therapeutic and clinical evaluations so that care – personalised to each individual – can be given from the time of diagnosis through the course of the disease."

"We want to find ways to monitor MS more closely with non-invasive or minimally-invasive approaches," continued A/Prof Bruestle. "Being able to identify biomarkers that could be measured frequently will help clinicians better monitor the effectiveness of treatment."

What does MS OHIOH do?

MS OHIOH harnesses the expertise of researchers and clinicians across many disciplines, including people from physics, engineering, chemistry, data, laboratory research, medical specialists, and people living with MS.

The MS OHIOH research cohort is a 50:50 split between people diagnosed with MS and those not diagnosed with MS. "It is important to study both," said A/Prof Bruestle. "We are doing a longitudinal study looking at diverse measures including analysis of blood, imaging, questionnaires, and non-invasive sensors. By approaching this in a wholistic way, we may be able to find patterns to indicate when treatment is failing or when progression of disease is imminent."

Up to this point in the research, blood tests, MRI brain scans and questionnaires have formed the bulk of research tools. Pathology looks at inflammatory markers and neuronal debris in a person's blood. MRIs can detect areas of damaged myelin (called lesions) in different parts of the brain. Questionnaires assess factors like diet, activity levels, anxiety, depression, fatigue, and lifestyle habits of participants.

As informative as these measures are, more information needs to be captured more frequently in order to develop better approaches to clinical management, and to improve the overall health and wellbeing of those living with MS.

One of the issues with MS is that many 'insults' to the brain, spinal cord and optic nerves can happen without measurable clinical effects, or without a person necessarily noticing a relapse. "There can be small lesions, or lesions in areas of the brain which don't have a direct functional role and, because of this, it can be hard to detect or measure because patients don't realise anything's amiss," said A/Prof Bruestle. "This is problematic, because these lesions lead to the higher burden of the condition. Even though they may not be evident as noticeable symptoms, they are responsible for the overall disease progression."

At present, there is no way of knowing when these 'insults' happen unless an MRI of the brain is done. "We usually do an MRI once each year and then we can – in retrospect – see that yes this person had five attacks, or 20 attacks. However, what we want to do is develop minimally-invasive, frequent-MS-activity monitoring sensors which will alert us to issues as they happen. That way we'll have earlier detection of relapse activity, early identification of treatment failure, enhanced capacity to adapt treatments, and therefore hope to prevent neurodegeneration," she said.

Some of these non-invasive monitoring devices include optical sensors and balance plates. "One novel sensor we want to bring to the Sydney research cohort is an optical field analyser. This device films the pupil reflex of both eyes simultaneously and by measuring this, we can detect where – in the optical processing – there may be problems. This provides valuable information about MS progression," said A/Prof Bruestle.

Another device is a balance plate participants stand on, which measures things like the weight distribution and the 'sway' of the person as they stand. "These are more sensitive measures than what we normally have when we assess people," noted A/Prof Bruestle.

While these sensors are used at point-of-care, that is, in the doctors' rooms or in the research setting, MS OHIOH is looking to develop devices that research participants can take home. Being able to have more frequent or even real-time monitoring would enable quicker detection of disease activity, treatment failure or relapses.

"Being able to detect problems as they occur, means we will be able to adjust treatment to ensure accumulative burden of MS doesn't happen in the future. That is one of our goals with this research," said A/Prof Bruestle.

Lived experience shapes research

To better understand the experience of people living with MS and their relationship with research, MS OHIOH includes a number of advisors in their research projects who have MS.

Mr Mark Elisha was diagnosed with MS 10 years ago and became involved in MS OHIOH four years ago as an advisor. "We advise researchers about the experiences of people with MS, how we'd like research to be conducted, and how we'd like to be treated throughout the research process," said Mr Elisha.

"There are a lot of mysteries about MS. In some instances we have an invisible disability and it is actually quite hard to measure some of the symptoms. Therefore if you try to do research without considering the experience of people with MS, you might struggle to get a worthwhile outcome from research," he noted.

There are still huge gaps in knowledge and treatment of MS, particularly for people with progressive MS. "We need better treatments and, for me, the only way to do that is to continue being on the frontlines advocating for ourselves and being involved in research. I take pride in that. With MS you can feel helpless, because you can do all the right things and your MS can still get worse. So being involved as a research advisor is a way for me to take back control and take the fight back to MS."

The MS OHIOH initiative is definitely taking the fight to MS. "If we find ways to monitor a condition more closely with non-invasive or minimally-invasive approaches, we might be able to find more personalised answers for the individual," said A/Prof Bruestle. "This is when we'll see the biggest benefit for those living with MS."

How you can get involved

The MS OHIOH research team invites people living with MS – as well as those who don't have MS – to take part in the research. GPs and specialists are encouraged to let their patients know about this new research opportunity.

Also, because this kind of research doesn't happen without funding support from generous donors, donations towards Sydney MS OHIOH research can be made via the San Foundation. Email **foundation@sah.org.au** or visit **www.sanfoundation.org.au**. The San Foundation is the fundraising foundation of Sydney Adventist Hospital, and The San Foundation has already contributed $50,000 towards a research nurse/officer for MS OHIOH's research clinic at the hospital.

It is vital to escalate the momentum in MS research in Sydney and in NSW more broadly, and Prof Herkes observed the enthusiasm surrounding the new MS OHIOH Sydney initiative. "ANU has a wealth of scientific knowledge, and here at Sydney Adventist Hospital we have a wealth of clinical expertise and knowledge. I t is a really wonderful relationship, and we are very excited about the MS collaboration between ANU and the hospital."

"Along with the invaluable input from people living with MS, and the generous support of donors, we know the developments to come out of MS OHIOH research will benefit the MS community long into the future," said Professor Herkes.

For more information and to participate in MS OHIOH research in Sydney, contact: SANMS@anu.edu.au

Quick Fox –

SAN PERFUSIONISTS INVENT NEW PROCESS FOR OXYGENATOR CHANGE-OUT

Some creative thinking during a stretch of insomnia lead to an innovation whereby a life-critical procedure that generally took three minutes can now be done in around 10 seconds.

The San was the first stand-alone private facility in Australia to undertake cardiac surgery in 1979.

Now, two members of its perfusion department have invented Quick FOX, an ultra-fast new process of changing-out failed oxygenators during cardiopulmonary bypass procedures.

During cardiac bypass surgery, a rare but critical emergency situation can arise if the heart-lung machine's oxygenator fails during the procedure. Up until now, the change-out process of removing the failed oxygenator and replacing it with a new one could take up to three minutes. This resulted in unplanned halts to surgery, high risks for the patient and stress for the surgical team. With every passing second the risk of neurological injury and death increase.

"A failed oxygenator during surgery is a very rare event, but it does happen and we have to be prepared for it," said Sally McLeod, co-inventor of Quick FOX and Head Perfusion Technician at Sydney Adventist Hospital (the San). "Some perfusionists never have to deal with this in their whole career, while others have had it happen to them a couple of times. When it happens, decisions have to be made instantly and the oxygenator change-out done as quickly as possible."

What sparked the invention of Quick FOX was that one of the products used in circuitry of the bypass machine was being discontinued, and the perfusion team were looking for solutions.

"We currently use LivaNova oxygenators for all our heart surgery, but we had a Getinge arterial filter in the pack which Getinge is discontinuing, so we needed another filter," said Sally. "While looking into this, we decided to go with a fully-integrated oxygenator which has the arterial filter incorporated in it."

"This meant that for any emergency changing of the oxygenators while on bypass we needed to modify the 'change-out' kit and the arterial line, because the transducer would come off the arterial line in a different spot. Each hospital has its own unique drawings of the lines – the circuit – that connects the patient to the oxygenator and the reservoir. You want the lines as short as possible and the most direct way you can do it."

Sally woke at 2am one morning and, unable to sleep, started designing new line drawings for how a new setup could work. "I dreamt up a new line I thought would probably make the change-out of a failed oxygenator quicker, easier and safer. After modifying the line drawings and making the new line, we needed to test it."

Sally worked with perfusion colleague, Dr David D'Silva, to perfect the new process, bouncing ideas off each other, trying various options over a number of hours.

"We went through a process of troubleshooting and trial and error," said Dr D'Silva, medical perfusionist at the San, and President of the Australasian Society of Medical Perfusion. "The ultimate aim when doing an oxygenator change-out is to limit how much disruption you have to the life support given to the patient."

"With the old way, it was a really big deal if the oxygenator failed. The surgeon had to decide whether to cool the patient down or rush off bypass; it was a whole-of-theatre crisis. Whereas with the Quick FOX process, it's easily manageable with one or two people and takes only seconds. It has taken a rare but high-risk event and removed almost all of the risk. It has essentially eliminated any of the harm that could be associated with failure of that component of the heart lung machine," noted Dr D'Silva.

When cardiac surgeons and perfusion colleagues heard about Quick FOX, they were astounded. "They think it's wonderful and they're amazed it's taken someone this long to come up with this solution," said Sally. "It gives them confidence that if an oxygenator failure were to happen in their theatre, the change-out will take only seconds and not be the huge deal that it used to be."

For Dr D'Silva, the ready acceptance of this new process and the ease to which perfusionists could master it was a pleasant surprise. "People can be very resistant to change with these sorts of things, but when we showed other people, everyone was very accepting of it. And literally after 15 minutes of teaching, people could do the Quick FOX process in under 30 seconds on their very first attempt."

Word has spread, and already a few hospitals in Sydney and elsewhere in Australia have adopted the Quick FOX change-out method.

"I took the Quick Fox video over to Italy a few weeks ago where I attended the launch of a new heart-lung machine, and showed it to perfusion colleagues there, and they were pretty amazed as well," said Sally.

Dr D'Silva noted that one of the benefits of the Quick FOX method is it can be adopted anywhere in the world. "Some components will be slightly different in other countries, but there are many things that are standard around the world, so yes this can be replicated in other countries."

And that makes the Quick FOX inventors happy. "I've had to change-out a failed oxygenator in an emergency situation a couple of times in my 20 years of being a perfusionist, and the stress and knowing what it could mean for the patient is extremely hard," said Sally. "The more people this new method can help the better. It takes considerable pressure off us as perfusionists. And if you can get it done safely and quickly, and know the patient safe, that's a fantastic outcome."

Sally and Dr D'Silva have co-written a paper about Quick FOX which has been accepted into a journal. They've also made a YouTube link of Quick FOX in action: **https://youtu.be/1o2_EzbnMqs**

We called it Quick FOX, as it stands for:

Quick connectors

Fast

Oxygenator

e**X**change

"Quick FOX speaks to the rapidity of the oxygenator change-out process and also pays respect to the San hospital on Fox Valley Road (Wahroonga), the hospital where we both proudly work," said Sally.

AN ARTICLE FEATURING **Dr De Lacavalerie**

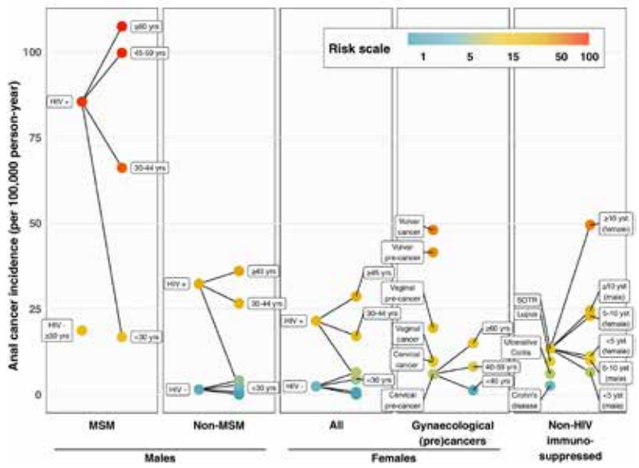
Anal cancer screening finally on the horizon

The lack of a formal screening program for Anal cancer in the past has resulted in disease progression and lives lost – but things are about to change.

A large study published last year in the New England Journal of Medicine (ANCHOR study) provided impetus to formalise anal screening programs around the world, including Australia.

Dr De Lacavalerie is a member of the Australian Multidisciplinary Working Group for Anal Cancer Prevention in People Living with HIV, a nationwide group aiming to assess guidelines, treatment recommendations and implementation of research for screening for anal cancer in Australia.

"Anal cancer is a fairly rare cancer in the general population, but it has been steadily increasing," said Dr Penelope De Lacavalerie, specialist Colorectal Surgeon at the San. "The prevalence is 1-2 cases of anal cancer per 100,000 people in the general population, and up to 85 per 100,000 people in high-risk groups.



Anal cancer risk scale. Estimates for HIV-negative men and men are shown, without labels, for age-groups <30, 30 to 44, 45 to 59, and ≥60 years. CI, confidence interval; MSM, men who have sex with men; MSW, men who have sex with women. yrs, years old; yst, years since transplant. Clifford, GM et al. A meta-analysis of anal cancer incidence by risk group: Toward a unified anal cancer risk scale. Int. J. Cancer. 2021; 148:38–47.

We really need to get started on anal cancer screening in Australia– in a formalised way similar to cervical cancer screening. The ANCHOR study is timely, and things will change very rapidly this year."

Causes of anal cancer

The Human Papillomavirus (HPV) is the cause of anal cancers in 90% of cases.

"While the cause of most anal cancers is the same as the cause of vulval, vaginal and cervical cancer (HPV), knowledge about anal cancer is about 20 years behind, compared to cervical cancer," said Dr De Lacavalerie.

"Anal cancer is more common in women than men, and it is more common in people living with HIV and those who are immunosuppressed."

Diagnosis

The diagnosis of anal pre-cancer lesions follows a path modelled on the cervical cancer screening program based on a triple assessment:

- Anal pap test – similar to cervical Pap tests, where cells from the anal canal are sent for cytology and HPV genotyping. "Genetic testing tells us it's either positive or negative for HPV. And if it's positive, it will tell us what type of HPV is present in that person's anal canal. The HPV subtype 'HPV 16' causes 90% of anal cancers, but there are also other HPV variants to watch for."
- Digital examination – a digital anal/rectal examination to check for unusual growths or lumps.
- High resolution anoscopy – HRA uses a special magnifying device called a colposcope along with a proctoscope to view the lining of the anal canal. Two dyes, 5% acetic acid and lugol's iodine are used (the same dyes as used in cervical colposcopy) to highlight the difference between HPV-related lesions and normal tissue. These are lesions not visible to our eyes without the use of the colposcope.

Dr De Lacavalerie performing the HRA

- Biopsy – to check for pre-cancer lesions or a high-grade squamous intraepithelial lesions (HSIL) or a cancer, and then treat accordingly once confirmed

"I started training in HRAs in 2020 and currently there is very few of us performing this procedure within Australia" said Dr De Lacavalerie. "HRA has been around for a long time, but until last year it was regarded as a research tool, but it will soon become the mainstay screening for high-risk populations."

Who should be screened:

Dr De Lacavalerie said when the anal cancer screening program is launched, it will not be a population-wide screening program but rather targeted at higher-risk groups.

"The recommendation is to screen those groups within the population that have at least 25 cases or more of anal cancer per 100,000 persons. The risk of anal cancer in these populations is considered to be up to 100 times higher than the incidence of anal cancer within the general population."

"According to the International Anal Neoplasia Society (IANS) recommendations, the high-risk populations will be divided into risk categories A and B.

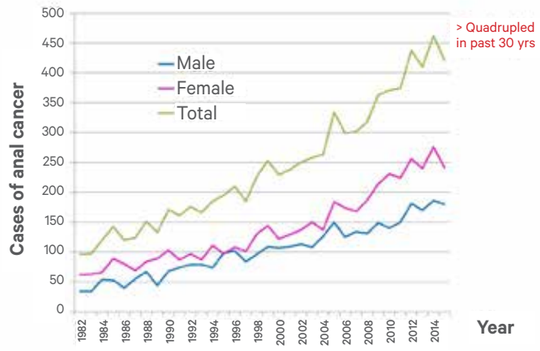
Risk Category A –

1. Men who have sex with men (MSM), and trans-women – in particular those who living with HIV
2. Women who live with HIV
3. Heterosexual men (not MSM), who live with HIV
4. Those with a history of vulval HPV lesions (both precancerous and cancer)
5. Those with solid organ transplants (e.g., kidney, heart, lung transplants, etc)

Risk Category B – those below the Category A threshold, but still at higher risk than the general population:

1. Those with cervical or vaginal cancer or their HSIL precursor lesions CIN 2/3 and VIN2/3)
2. Those who are immuno-suppressed (e.g., Systemic Lupus Erythematous, Inflammatory bowel disease, Rheumatoid arthritis, systemic steroid treatment and others chronically immunosuppressed)

2015 Australian anal cancer cases, by year



Australian Institute of Health & Welfare 2018 https://ww.aihw.gov.au/reports/cancer/acim-books/contents/acim-books

Who can do the screening:

A multidisciplinary approach to caring for people with anal cancer means there are a number of groups who can be trained to do anal cancer screening using HRAs, including: gynaecologists, oncologists, surgeons, immunologists, sexual health experts. However, as for any procedure it needs training and credentialling in order to maintain quality. The credentialing processes will be underpinned by the evolving worldwide guidelines by the IANS.

Surveillance versus treatment

"Up until last year, if someone was diagnosed with a pre-cancerous anal lesion, we would just do monitoring and surveillance" said Dr De Lacavalerie. "However, the ANCHOR study findings have now changed the outlook as patients on the active treatment arm (for pre-cancerous anal lesions) were 57% less likely to develop anal cancer when the lesions were ablated. This study has now changed the stance of anal cancer prevention. This applies worldwide."

Ultimately, the main aim of any screening program is to avoid cancer developing in the first place. "We want to make anal cancer history," said Dr De Lacavalerie. "That's achievable if we are able to diagnose early and treat the precursor lesions (HSIL) before they become anal squamous carcinomas."

Prevention

- The main way to prevent anal cancer is by being immunized with the HPV vaccine (Gardasil 9), which in Australia is recommended from the first year of high school up to the age of 25. The benefits from the immunization program on anal cancer diagnoses will take many decades. Hence, we need to act now
- A new sexual partner is a risk factor for acquiring an HPV infection which, in turn, increases risk of anal cancer. The HPV vaccine needs to be considered in these circumstances as well with your GPs / Specialists
- It's a myth that anal intercourse is the only risk of HPV infection and/or anal cancer. HPV is highly infectious from skin-to-skin contact, even without sexual intercourse.
- Condoms are very efficient to prevent other sexually transmitted infections (STI's) but unfortunately, they do not prevent HPV.

Dr De Lacavalerie

FRACS MBBS

Dr Penelope De Lacavalerie is a Consultant Colorectal and General Surgeon

She is the founder of My Sydney Surgeon, Sydney Obstetric Anal Sphincter Injuries (OASI) Specialists, a member of the Australian Multidisciplinary Working Group for Anal Cancer Prevention in Australia and an official media Spokesperson for Bowel Cancer Australia.

She is passionate about providing an approachable, comprehensive, evidenced-based, and innovative care to all her patients.

Her areas of expertise include all aspects of colorectal surgery including robotics as well as being Certified in Gastroscopy and Colonoscopy by the Conjoint Committee of Australia.

Currently, her main research interests are in the diagnoses, screening and treatment of HPV related anal dysplasia and anal cancer in high-risk populations and finding innovative ways to bring awareness about the screening, diagnoses and treatment of bowel and anal cancer. She is also fluent in Spanish.

CONTACT INFORMATION

San Clinic, Level 6,Suite 601D
185 Fox Valley Road, Wahroonga

1300 026 935
(02) 9051 1265
mysydneysurgeon.com.au/

San Volunteers honoured during National Volunteer Week

Sydney Adventist Hospital (the San) celebrated National Volunteer Week from 15-21 May, acknowledging more than 300 volunteers who make a difference to the hospital through their volunteering efforts.

Volunteers contribute in many ways throughout various wards and departments. They help visitors find their way around the hospital, they help sort stock, they help with admin/filing, they volunteer in the hospital gift shop, chat to patients, and make cuppas in the Day Infusion Centre, Renal Dialysis Unit and Cardiac Cath Lab. Our Volunteers also help our Cancer Centre with driving, cancer group facilitating and the wig library. Our Spiritual Care Volunteers help with beautiful connections with patients on our wards.

"More than 20,000 volunteer hours have been given in the past calendar year alone," said Patrina McLean, Manager Help Team Volunteers. "Since volunteers started in 1973, they have contributed more than 1,749,501 hours to the San."

This year 22 volunteers were awarded for significant years of service ranging from 10 years to 25 years of volunteering. "Our oldest and most inspiring volunteer, John Bulley, is 95 years of age," said Patrina. "He volunteers every week, and our staff and patients look forward to seeing him. Our youngest volunteer, Victoria, is 24 and she is very dedicated. She travels a long way, driving past dozens of other hospitals because she says the San has the best volunteer program."

One volunteer was acknowledged for 7,000 hours of volunteering in 10 years. John Luschwitz worked in real estate his whole career, but after his wife passed away at the San, he began to volunteer at the hospital. "They were very kind to us when we were travelling that journey, and it is a real honour and a privilege to be working with some beautiful people, and to help support patients and their families during their hospital stay," said Mr Luschwitz.

His first volunteer role was helping out in the San Snax Café. "I did a lot of washing up," he said with a laugh. "I struggled to make my own sandwiches let alone make them for someone else, but I was very good at doing the dishes."

It wasn't long before Mr Luschwitz found his true calling on Level 6, the oncology and palliative care ward, where he does most of his volunteering. He talks with patients and their families, and considers it a special honour to spend time with patients nearing the end of life who have no family nearby to visit them. As a long-serving Justice of the Peace, he also helps people with documents. He is often seen carrying trays of hot drinks from the cafeteria as a caring gesture for staff.

"The San is so blessed to have such generous people who contribute their time," said Patrina. "There will always be something else to do with our time, there will always be somewhere else we can be, but our San volunteers choose to be at the San. Volunteers give of their time because they have a heart, and a caring heart always finds kindness and happiness to share."

About San volunteers

The San has a long history of very supportive ex-patients, ex-staff, and local community members who regularly volunteer at the hospital. In addition to the very practical help they give throughout the hospital, they're also a great source of comfort and companionship to patients, and an encouragement to staff.

Fifty years ago, in 1973, volunteers were more formally organised as the 'Pink Ladies' – it was predominantly women who volunteered at that time. As men began to volunteer, the uniform changed in the year 2000 to the distinguished and cheery yellow shirts we see around the hospital today.

To each of our many thousands of volunteers at the San over the years, we express our deep gratitude for your invaluable contribution. We hope your time as a volunteer has enriched your life as much as it has enhanced the experience of patients, their families and staff at the hospital.