



MACQUARIE
University
SYDNEY · AUSTRALIA

**AUSTRALIAN LYMPHOEDEMA EDUCATION,
RESEARCH AND TREATMENT CENTRE
(ALERT)**

A pair of hands, belonging to a person wearing a dark blue long-sleeved shirt, are cupped together and holding a glowing green human figure. The figure is composed of a network of green lines, resembling a digital or scientific representation of a human body. The background is a dark blue, textured surface with numerous small, out-of-focus light spots in shades of blue, purple, and pink, creating a bokeh effect.

**2024-2025
Annual Report**

Acknowledgement

We acknowledge the Traditional Custodians of the land on which Macquarie University is situated, the Wallumattagal people of the Dharug Nation, whose cultures and customs have nurtured, and continue to nurture, this land since time immemorial. Our ALERT Centre is grateful to be able to ‘garrimalyi’-heal, ‘ngarra’-learn and ‘yanma ngarragulang’-discover on these beautiful lands. Macquarie University Health is committed to partnering with consumers in their care. Our ALERT Centre recognises that the intention of our discussions and actions are for the benefit of our consumers and their carers.



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A message from the director



It is with great pride that we present the fifth Annual Report for the period 1 July 2024 to 30 June 2025. This report reflects a year of dedicated effort, strategic growth and meaningful progress in advancing our mission. It provides an overview of key achievements and milestones, and serves to acknowledge the collective contributions of our team, partners, and stakeholders. As we continue to build on our foundations, this report underscores our commitment to excellence, innovation, and impact in all areas of our work.

We are pleased to report that the Faculty of Medicine, Health and Human Sciences at Macquarie University has formally recognised the ALERT Program as a designated Faculty Research Centre. This designation reflects our alignment with the Macquarie University Research collectives model - an integrated approach that brings together research, education, clinical service, and community engagement under a unifying theme. As a Centre, the ALERT Program exemplifies this model through its commitment to advancing clinical care, delivering high-quality education, and conducting impactful research in lymphoedema. This recognition reinforces our contribution to the Faculty's overarching mission: to Heal, Learn, and Discover. Our Centre deeply appreciates the ongoing support from the Faculty and the broader university community.

Designation as a Centre enables us to establish dedicated webpages that showcase our educational offerings, our research initiatives and our team, while also connecting to our treatment clinic

Empowering lymphoedema patients and health professionals through innovative treatments and transformational care. That's YOU to the power of us.

through "Our Flagship Service." As part of this important milestone, the Centre now features a distinct logo, visual identity, and position statement - each reflecting our official Centre status, as outlined below:

For people at risk of or living with lymphoedema and the health professionals who care for them, the Australian Lymphoedema Education, Research and Treatment Centre (ALERT) provides world-leading integrated personalised treatment, informed by our innovative translational research, distinctive clinical technologies, and industry partnerships. As the only University-accredited provider of lymphoedema education in the southern hemisphere, ALERT is training the next generation of leaders in lymphoedema care.

Over the past 12 months, we have expanded our educational offerings with the launch of two new online hybrid units, developed specifically for continuing professional development. These units - Professional Practice in Lymphoedema Management and Wellness during Cancer Treatment and Beyond - also serve as elective options within the Graduate Certificate of Lymphoedema Management. More about the Graduate Certificate can be found under Education.

The ALERT Centre is the only Australasian Lymphology Association (ALA) accredited training provider in the southern hemisphere operating within a university setting. We offer a full suite of education options, including an accredited training program, continuing

professional development opportunities, and a Graduate Certificate course.

Our clinic's lymphoedema services have experienced steady year-on-year growth across all three clinics - Diagnostic, Conservative, and Surgical. Our multidisciplinary lymphoedema clinic provides comprehensive, patient-centred care through the collaboration of a specialised team of health professionals, including medical practitioners (plastic and vascular surgeons), rehabilitation specialists and accredited lymphoedema practitioners. Together, they offer coordinated assessment, diagnosis, and management plans tailored to the unique needs of each individual. Services include complex lymphoedema therapy (CLT) - manual lymphatic drainage (MLD), compression therapy, exercise prescription, skin care, psychosocial support, and surgical consultation when appropriate. By integrating multiple disciplines, the clinic ensures a holistic and evidence-based approach that supports long-term outcomes and empowers patients in their self-management journey.

Our clinic has expanded its services to include a monthly diagnostic and surgical clinic specifically for individuals living with lipoedema. This initiative has been met with overwhelming demand, highlighting a significant and previously unmet need within the community. The clinic provides expert assessment, diagnosis, and surgical consultation, helping to bridge the gap in care for those affected by this often misdiagnosed condition.

The strong uptake reflects both the value of the service and the urgent need for accessible, specialised care for people with lipoedema. We are proud to support this growing patient group through targeted clinical innovation.

Our Centre remains committed to raising awareness of lymphatic diseases through a wide range of initiatives. These include publishing in peer-reviewed journals, presenting at national and international conferences, and hosting educational events. We actively engage in collaborations with industry partners and academic institutions to further research and innovation in the field. In collaboration with the Boston Lymphatic Center, our Centre regularly holds multidisciplinary meetings focused on discussing complex case studies, fostering shared learning and enhancing care strategies for challenging presentations. At our combined meeting on 20 June, we had the privilege of welcoming from the Lymphatic Education and Research Network (LE&RN) - Bill Repicci, Cecilia Dupecher, and Ajit Muley, who generously shared their insights and expertise.

Our outreach efforts are also supported through regular newsletters and a growing presence on social media, helping us connect with both professional and public audiences. Through these combined activities, we have enhanced understanding, promoted best practices, and improved outcomes for individuals affected by lymphatic conditions.

Some of our Centre's achievements include:

- being awarded Research Centre status in the Faculty of Medicine, Health and Human Sciences.
- delivering 3317 patient services across the Diagnostic, Conservative and Surgical clinics which is an increase of 16.1% year-on-year.
- introducing a monthly Lipoedema Diagnostic and Surgical clinic.
- delivering 14 training programs to over 148 health professionals from various disciplines.
- training 75 health professionals to become accredited lymphoedema practitioners.
- launching two online hybrid microcredentials – Professional Practice in Lymphoedema Management and Wellness during Cancer Treatment and Beyond.
- developing a new microcredential – Assessment and Management of Lipoedema.
- launching the Macquarie University Postgraduate Certificate of Lymphoedema Management for enrolment in December 2025.
- attracting industry partnership funding of over AUD \$112,000 to support the delivery of our educational offerings.
- publishing 12 peer reviewed journal articles.
- presenting at 25 national and international conferences on a wide range of research projects.
- presenting 10 colloquia and webinars at industry partner and advocacy events.

As a designated LE&RN Comprehensive Network of Excellence, our Centre actively supports LE&RN's global efforts to raise awareness of lymphatic diseases. The ALERT Centre proudly contributed to the LE&RN World Lymphoedema Day video and showed our support by wearing teal t-shirts. We also continued our support of the Lymphoedema Association Australia's Shine a Light on Lymphoedema campaign - lighting up a Macquarie University campus building in blue to help amplify national advocacy efforts.

As I reflect on the past year, I feel immense pride in the achievements of our Centre and the tangible impact of our collective work. It has been a year marked by growth, innovation and unwavering commitment. I remain deeply grateful to our dedicated Centre members, whose passion, expertise, and tireless efforts continue to drive positive change for individuals affected by lymphatic diseases. Their contributions across clinical care, research and education are at the heart of everything we do. Together, we are building a future of improved understanding, better treatments, and greater support for those living with lymphatic conditions.



Associate Professor Louise Koelmeyer
DIRECTOR



Our innovative EDUCATION and training programs empower health professionals



Our RESEARCH is used to shape health policy and evidence-based practice



Our multidisciplinary TREATMENT clinic specialises in diagnostic, conservative and surgical

Position statement

For people at risk of or living with lymphoedema and the health professionals who care for them, the Australian Lymphoedema Education, Research and Treatment Centre (ALERT) provides world-leading integrated personalised treatment, informed by our innovative translational research, distinctive clinical technologies, and industry partnerships. As the only University-accredited provider of lymphoedema education in the southern hemisphere, ALERT is training the next generation of leaders in lymphoedema care.

Governance

As a newly appointed Research Centre within the Faculty of Medicine, Health and Human Sciences (FMHHS), our program has been recognised for its distinctive contribution to the faculty, and our multi-focus on empowering health professionals through education, discovery research, and personalised clinical care. By adopting a transdisciplinary model, we foster innovation and collaboration across education, research and treatment. This approach closely aligns with the FMHHS “Heal, Learn, and Discover” ethos, ensuring our efforts contribute meaningfully to the faculty’s mission of improving health outcomes for individuals and communities.

The leadership team at our Centre holds monthly meetings to monitor progress, identify and respond to challenges, and review current priorities. These regular discussions help maintain strategic alignment across all initiatives and ensure that our actions are consistently guided by the Centre’s overarching goals and long-term vision.

Working within an academic framework enables the ALERT Centre to provide integrated clinical care, lead cutting-edge translational research, and deliver high-quality education for individuals affected by lymphatic diseases and the health professionals who support them. Student assessment is guided by robust quality assurance processes - including review by the Department of Health Sciences Area of Study Meeting, the FMHHS Assessment Committee, and the Faculty Board - ensuring the highest standards in lymphatic disease education and training. This strong commitment to academic excellence ensures our graduates are well-prepared with the skills and knowledge needed to effectively respond to the complex needs of individuals living with lymphatic conditions.

Our educational programs are also accredited by the Australasian Lymphology Association (ALA), the leading professional body for lymphology in Australia and New Zealand. To uphold this accreditation, we submit an annual Compliance Statement, demonstrating our ongoing adherence to the ALA’s rigorous standards for lymphoedema education. This ensures our programs remains current, evidence-based, and aligned with national best practice in the field.

Leadership team



A/Prof Louise Koelmeyer
Director, ALERT Centre
Head, Department of
Health Sciences



A/Prof Hiroo Suami
Research Lead



A/Prof Helen Mackie
Medical Lead



Dr Belinda Thompson
Course Director



Katria Gaitatzis
Research Co-ordinator



Robbie Blackwell
Co-team Leader
Senior Lymphoedema
Practitioner



Asha Heydon-White
Co-team Leader
Senior Lymphoedema
Practitioner



Robin Blumfield
Project Officer



Education

Overview

ALERT Education continues to develop a syllabus that aligns with Macquarie University's microcredentialling and curriculum architecture framework. As such, two new units were developed and launched - Professional Practice in Lymphoedema Management and Wellness during Cancer Treatment and Beyond. A third unit is currently under development - Assessment and Management of Lipoedema - which will be released in Session 1, 2026. These units form part of the Graduate Certificate of Lymphoedema Management course. Detailed information about these units and course can be found below.

Our vision is to continue leading the way in Continuing Professional Development (CPD) and postgraduate education in lymphoedema, lipoedema, and chronic oedemas. Through a commitment to delivering high-quality learning experiences, we strive to equip practitioners with the knowledge and skills needed to make a meaningful impact in their field of practice and contribute to ongoing advancements in the care and management of these conditions.

Unit development

Professional Practice in Lymphoedema Management

In this unit students develop the specialist skill areas of clinical practice within lymphoedema, and related areas of management and clinical relevance. Through online activities and workshops, students develop professional practice skills in lymphoedema management including an understanding of and insight into how lymphoedema and chronic oedemas impact an individual physically, functionally, psychologically, and financially. Students explore the integration of comprehensive assessment, clinical reasoning, communication and management skills to treat lymphoedema and chronic oedemas using complex lymphoedema therapy (CLT) into professional practice. Through mentoring and reflective activities, students consider latest evidence-based practice and their own clinical skills and professional development.



Wellness during Cancer Treatment and Beyond

In this unit students develop the necessary skills for the management of individuals undergoing cancer treatment and the survivorship phase. Students also develop an understanding and insight into how cancer and its treatments impact an individual physically, functionally, psychologically, and financially. Comprehensive assessment, clinical reasoning, communication and management skills will be applied to treat individuals diagnosed with cancer. Factors addressed include the influence of physical function and quality of life in patients following cancer treatment such as fatigue, body image, sexuality and lymphoedema; why and when to use assessments including pre-treatment, during treatment, and post-cancer treatment; and understand the theory for various treatment modalities and apply principles of chronic disease management to tailor intervention to the condition and individual goals.

Assessment and Management of Lipoedema

Scheduled for release in Session 1, 2026, this unit will be one of six elective options available to students pursuing the Graduate Certificate of Lymphoedema Management. It focuses on building students’ knowledge and skills in the assessment and management of lipoedema. Through this unit, students will gain a deeper understanding of the multifaceted impact of lipoedema on an individual - physically, functionally, psychologically, and financially. The curriculum is designed to explore current evidence-based approaches to lipoedema care, incorporating key components such as compression therapy, exercise prescription, patient education, psychological support, and surgical interventions. Emphasis is placed on integrating theory with clinical application to equip students with the tools needed to provide effective, person-centred care. This unit will benefit health professionals seeking to broaden their expertise in lipoedema management, contributing to improved outcomes and quality of life for individuals living with this chronic condition.

Graduate Certificate of Lymphoedema Management

This comprehensive qualification requires the completion of 40 credit points, with each unit contributing 5 credit points. To qualify for the certificate, our students must complete the three essential units, as follows:

- 1. Principles of Lymphoedema Management
- 2. Contemporary Evidence in Lymphoedema Management, and
- 3. Professional Practice in Lymphoedema Management

Additionally, our students can select and complete five out of six elective units, as follows:

- 1. Lymphoedema Practice for the Upper Limb and Breast
- 2. Lymphoedema Practice for the Lower Limb and Genital Region
- 3. Lymphoedema Practice for the Head and Neck
- 4. Management of Wounds in People with Chronic Oedemas
- 5. Wellness During Cancer Treatment and Beyond, and
- 6. Assessment and Management of Lipoedema

Results

From July 2024 to June 2025, ALERT Education delivered 14 training programs comprising a total of 352 individual units across 148 students. We’re pleased to report that all students successfully completed either the ALERT Accreditation Training Program and/or a hybrid unit as part of their continuing professional development. Student assessment results are ratified by the Faculty of Medicine, Health and Human Sciences Board at the end of each

session or through special consideration. Upon completion, students receive a digital badge for each microcredential earned and a certificate of completion for those who have completed the ALERT Lymphoedema Accreditation Training Program.

Testimonials

Overall, an amazing course. Online content was outstanding, and I loved the knowledge checks. The ALERT team were always welcoming if I had any issues and receptive to the zooms. Thank you to all the tutors for their encouragement, support and expertise, providing constructive feedback throughout the course. Really high level of clinical knowledge too. Loved the face to face also, organised well and great food!

The very personal input and feedback from highly proficient master trainers who are experts in the field was incredibly valuable. For people like me who are not currently working in the field and have limited experience of the practical skills of bandaging, massage or palpation, the patient and precise instruction, demonstration and correction of technique was excellent and really helped improve competency and confidence.

I thoroughly enjoyed the 4 days of training - you were able to create a very supportive learning environment. Whilst the days were intensive, being able to practice and apply the clinical skills was invaluable. I learned so much from every aspect of the training - being the therapist, being the patient, making mistakes, asking questions. The trainers were just all so supportive.

Delivered training programs



Delivered training to 148 health professionals, both national and international, across 14 programs



Trained 75 health professionals to become accredited lymphoedema practitioners



Launched 2 hybrid units which can be stacked into the Graduate Certificate of Lymphoedema Management

Events | Conferences

ISPRM 1-6 June 2024 Sydney, Australia

The 18th World Congress of the International Society of Physical and Rehabilitation Medicine (ISPRM) was held in conjunction with the 7th Annual Meeting of the Rehabilitation Medicine Society of Australia and New Zealand (RMSANZ). The Congress was a forum for the presentation of international research, discovery and innovation in rehabilitation medicine focusing on the three “T’s” - trauma, technology and timing.

Members of the ALERT Centre, including Dr Stephanie Lam, A/Prof Hiroo Suami, A/Prof Helen Mackie, A/Prof Louise Koelmeyer and senior lymphoedema practitioner Robbie Blackwell presented at a well-attended workshop on “Innovative Multidisciplinary Care of Lymphoedema and Chronic Oedema”. This innovative workshop provided clinicians with an update on the contemporary understanding of lymphatic anatomy and physiology, and an update on evidence-based strategies in the assessment and management of lymphoedema and chronic oedema associated with common conditions seen in rehabilitation. Since the workshop, our Centre has received several enquiries from rehabilitation specialists seeking collaboration, leading to a series of follow-up meetings.

Lipedema Foundation Scientific Retreat 18-21 November 2024 Herndon, Virginia, USA

As recipients of a Lipedema Foundation (LF) grant titled “Utilizing Indocyanine Green Lymphography (ICG) and Bioimpedance Spectroscopy (BIS) to Aid Differential Lipedema Diagnosis in Comparison to Lymphedema and Obesity,” A/Prof Louise Koelmeyer and Dr Belinda Thompson were invited to present their research findings. This unique event brought together LF-funded researchers, clinicians, patient advocates, and invited guests - 80 attendees representing 13 countries. Speakers shared unpublished data and engaged in cross-disciplinary discussions, all aimed at advancing our understanding of lipedema biology.

Lymphoedema Awareness Month March 2025

As part of Lymphoedema Awareness Month A/Prof Louise Koelmeyer was invited to give a presentation on “KeepingALERT – Innovative Assessment and Management of Lymphoedema”, as part of the Faculty Medicine, Health and Human Sciences seminar series.

Covered in her presentation:

- Survivorship following cancer treatment
- The physical, functional, psychological, and financial impacts of lymphoedema
- Implementing a prospective surveillance and early intervention model of care
- The latest evidence in establishing a screening program with a multidisciplinary cancer team Innovative conservative and surgical management options.

At the conclusion of the talk, Louise was thrilled to launch Professor John Boyages AM’s new book – Lymphoedema: Taking Control. Professor Boyages, the founding Director of the ALERT Program, is an internationally recognised radiation oncologist, breast cancer specialist, and author dedicated to the expert care of individuals with breast disease. His book offers practical guidance on the prevention, diagnosis, and management of lymphoedema. It explores causes, early detection, treatment options, emotional impacts, and dispels common myths. Louise was honoured to contribute the foreword and apply her expertise through editorial support.



Louise Koelmeyer with John Boyages

1st Compas (Compression APAC Summit) – Navigating the future of compression in APAC
22-23 March 2025
Osaka, Japan

Sponsored by the International Lymphedema Framework (ILF), the Japanese Phlebology Society and medi GmbH and Co KG, A/Prof Louise Koelmeyer was invited to present at the inaugural Compression Asia Pacific (APAC) Summit (COMPAS) Meeting where she shared insights from “The PREVENT Study – Early Intervention Wearing Compression Therapy after Breast Cancer”. Senior lymphoedema practitioners Robbie Blackwell and Asha Heydon-White were also invited to contribute their expertise to this important summit.

The meeting centred around re-evaluating the role of compression in the APAC region and advancing care for individuals living with lymphoedema and lymphatic disorders. Discussions focused on modern approaches to Complete Decongestive Therapy (CDT), highlighting the growing importance of self-management, surgical interventions, and compression therapy in improving patient outcomes. A key objective was to develop a collaborative strategic plan aimed at enhancing care across the APAC region through strengthened regional frameworks.

2nd International Földi Clinic Days – Lymphology in the Black Forest
16-17 May, 2025
Hinterzarten, Germany

A/Prof Louise Koelmeyer and Dr Belinda Thompson were honoured to be invited to present at this prestigious symposium, themed “Lymphedema and Lipedema – Thinking Outside the Box,” which brought together more than 400 international experts from 26 countries and 6 continents including Europe, UK, the US and Australia to share their research and knowledge. Louise presented on “Personalising Lymphedema Management – Translating Research into Clinical Practice”, while Belinda delivered a presentation titled “Edema in Lipedema Syndrome – Dispelling Myths with Scientific Evidence”.

Sponsored by Juzo, the symposium also offered attendees the unique opportunity to tour the Földi Clinic - a globally recognised centre of excellence in lymphological care, renowned among both patients and healthcare professionals for its outstanding expertise. Louise and Belinda also embraced the opportunity to try alpine walking during their visit.



Robbie Blackwell, Asha Heydon-White and Louise Koelmeyer with Nicholas Zwarg and Christine Moffatt



Louise Koelmeyer and Belinda Thompson with Tobias Bertsch and Guenter Klose

ALA Symposium – Flowing forward: A review of possibilities

16-18 May 2025

Fremantle, Western Australia

This year’s symposium centred on enhancing clinical practice for both new and experienced clinicians. It featured practical workshops designed to showcase innovative approaches and equip delegates with fresh ideas and updated skills to apply in their workplace.

The ALERT Centre maintained a strong presence through plenary presentations, invited talks, and sponsored workshops, covering a wide array of topics including:

- “A comparison between face-to-face and telehealth exercise for individuals diagnosed with cancer”. Tamatoa, A.
- “Effect of snake bite bandaging on superficial lymphatic transit in the lower limb using ICG lymphography”. Stockden, M.
- “Delivering dosage in compression garments - more than just CCL”. Toyer, K., & Gutierrez, B.
- “Lipedema and obesity: Concurrent or co-morbidity or complication: Assessment and diagnostic conversations and therapy options”. Mackie, H.
- “ICG imaging: Influence on compression decision-making in clinical practice”. Blackwell, R., & Paramanandam, V.S.
- “Go with the flow: Utilising ICG informed lymphatic drainage pathways in the treatment of head and neck lymphoedema”. Tisdall Blake, F.

Newsletters

Published three times a year, the “Keeping ALERT” newsletter is distributed to over 3,000 recipients, including patients, lymphoedema practitioners, health professionals and industry partners. Each issue aims to inform and engage readers by sharing practical advice, the latest evidence-based research from published journal articles, and personal patient stories. The patient stories consistently remain the most popular feature among our readers. These first-hand accounts offer powerful, personal insights into the challenges and triumphs of living with lymphoedema or related conditions. By sharing their journeys, patients help foster a sense of connection, raise awareness, and provide inspiration and reassurance to others navigating similar experiences. Their stories not only resonate deeply with our audience but also play a vital role in building empathy and understanding within the broader healthcare community.



Research

The Centre is actively engaged in a range of impactful research projects that aim to improve outcomes for individuals living with lymphoedema and related conditions. We work closely with the Macquarie University Health Lymphoedema Clinic and the ALERT Education Team to ensure that our research is not only clinically relevant but also directly informs best-practice care. Through this strong collaboration, we are able to translate research findings into practical strategies that enhance patient assessment, diagnosis, and management. Our research also plays a critical role in shaping national and international health policies, steering clinical guidelines, and influencing the development of education and training frameworks. By integrating research, clinical care, and education, the Centre is committed to driving innovation and advancing evidence-based practice in lymphatic health.

ALERT Databank

The Centre has developed a comprehensive databank to register routinely collected clinical data from patients with swelling-related conditions such as lymphoedema, lipoedema, and chronic oedemas. This resource supports research aimed at improving understanding of contributing factors, long-term impacts, and the effectiveness of both conservative and surgical treatments. All data is de-identified to protect patient privacy. To date, 1,507 patient records have been entered, and 24 Macquarie University students from various programs including Medicine, Physiotherapy, Philosophy, and Research have accessed the databank for their research.

Current studies

Compression Therapy Outcomes

This project integrates data from the Macquarie University Health Lymphoedema Clinic and the ALERT Databank to improve lymphoedema management. It evaluates current garment prescriptions, assesses financial burdens, analyses effectiveness, and identifies clinician knowledge gaps through survey development. The goal is to inform evidence-based treatment and enhance patient outcomes. This study is funded by a collaborative research agreement with Essity.

Lower Limb Compression Therapy

Focusing on lower limb lymphoedema, this study uses Indocyanine Green (ICG) lymphography to map compensatory lymphatic drainage patterns. Findings aim to guide self-management strategies and inform compression garment prescriptions, helping translate imaging insights into clinical practice. This study is co-funded by an MQ Enterprise Partnership Scheme and Haddenham Healthcare.

Surgical Intervention Outcomes

This research project aims to assess the effectiveness of surgical treatments for lymphoedema and lipoedema, with the goal of refining techniques and improving patient quality of life through evidence-based care. The focus includes:

- Lymphovenous anastomosis (LVA) for early to moderate lymphoedema
- Lymph node transfer (LNT) for early to moderate lymphoedema
- Liposuction for advanced lymphoedema and lipoedema

Prospective Surveillance and Early Intervention

This model of care aims to reduce the incidence and impact of lymphoedema following cancer treatment by enabling early detection and intervention. Bioimpedance Spectroscopy (BIS), a non-invasive method measuring fluid distribution and body composition, plays a key role in identifying sub-clinical lymphoedema when used alongside comprehensive assessment. This research explores the effectiveness of and recent advances in BIS technology. This research is Co-funded by an MQ DVCR Fellowship with Impedimed.

Current studies

Bilateral L-Dex Algorithm Evaluation

Investigates optimal BIS impedance ratios and L-Dex thresholds using the SOZO device in individuals with bilateral lymphoedema, self-reported swelling, and healthy controls. Also compares standardised within-limb and inter-limb ratios while accounting for limb dominance.

SOZO vs U400 Comparison

Assesses reliability and consistency of L-Dex scores between SOZO and U400 devices in people with lower limb lymphoedema and healthy controls.

L-Dex Score Validity in Breast Cancer-Related Lymphoedema

Evaluates the accuracy of L-Dex scores in women with ICG-confirmed breast cancer-related lymphoedema compared to healthy controls.

Device Comparisons

Compares reliability and validity of three BIS devices in individuals with and without lymphoedema. Data collection is complete; analysis is underway.

Routine BIS in Chemotherapy Patients

Assesses the feasibility of implementing routine BIS monitoring in patients receiving chemotherapy for breast or gastrointestinal cancer at Macquarie University Hospital. To date, 160 participants have been recruited.

Innovative ways for assessing and managing lymphoedema and lipoedema using ICG

We have developed advanced protocols using Indocyanine Green (ICG) lymphography to assess the superficial lymphatic system. This approach supports personalised treatment planning, enabling more effective management and improved outcomes across all body regions and lymphatic conditions, including lymphoedema and lipoedema.

Lipoedema

This study aims to improve diagnostic accuracy, enabling more targeted treatments and better patient outcomes.

Breast Oedema

The ALERT Centre is collaborating with the Massachusetts General Hospital (MGH) lymphoedema team on a prospective pilot study of women at risk of or living with unilateral breast lymphoedema. The study aims to validate Tissue Dielectric Constant (TDC) and ultrasound as assessment tools compared to the current standard clinical examination. Regular meetings between ALERT and MGH teams have fostered productive knowledge exchange, supporting efforts to improve outcomes for women experiencing breast oedema following cancer treatment.

Head and Neck Lymphoedema

ICG lymphography has revealed significant impacts of cancer treatments on lymphatic drainage. Findings support the use of ICG, Percent Water Content (PWC), and BIS for comprehensive assessment and early intervention. These insights have been integrated into both the education and treatment arms of the ALERT Centre.

Lymphatic Anatomy

This foundational research aims to deepen understanding of the lymphatic system in both healthy and pathological states, informing future therapies and improving patient care.



Additional Joint Collaborations

BioBridge Collagen Matrix

BioBridge, a collagen matrix with FDA 510(k) clearance, supports surgical repair of lymphatic vessels affected by lymphoedema. A/Prof Hiroo Suami, in collaboration with Terumo Corporation and Okayama University in Japan, has completed three pilot rodent studies establishing protocols to assess lymphatic regeneration. A larger-scale study is planned in Japan in late 2025.


Auckland Bioengineering Institute Collaboration

A/Prof Hiroo Suami is collaborating with the Auckland Bioengineering Institute to develop innovative tools for improving lymphoedema diagnosis and personalised care. The project involves two phases: Phase 1 focuses on designing a low-cost, portable 3D ICG imaging device; Phase 2 will apply this device in clinical settings to identify imaging markers linked to disease severity. A paper on this work was presented at the 2023 IEEE EMBS Conference and published in the proceedings.


In a related project, co-supervised by A/Prof Suami, an Auckland PhD student is creating an imaging atlas of dermal backflow using ICG lymphography data from ALERT Centre patients. The project uses machine learning to analyse images and clinical data - such as vessel location, prior treatment, and demographics - to predict backflow patterns. The goal is to build a predictive model and statistical atlas to support early diagnosis and targeted management of lymphoedema.



Internationally and nationally connected research and clinical partnerships



Developing the next generation of researchers through postgraduate studies




Research excellence shaping effective policy and practice



Transformative and innovative outcomes through evidence-based research



State-of-the-art surgical interventions underpinned by scientific research



Enhancing quality of life through cutting-edge research

Treatment | Clinic

The Macquarie University Health Lymphoedema Clinic continues to expand its specialised services to meet growing patient needs. In July 2024, we launched a monthly multidisciplinary lipoedema clinic dedicated to the diagnosis and management of lipoedema, an often-misdiagnosed condition. This clinic brings together a team of expert clinicians to deliver coordinated care and timely, accurate interventions for complex cases. Patients travel to our clinic from regional areas, across Australia, and from New Zealand.

Our multidisciplinary team, comprises of medical professionals, rehabilitation specialists, accredited practitioners, researchers and professional staff, meets fortnightly to review complex cases and discuss the need for interventions such as liposuction, Vascularised Lymph Node Transfer (VLNT), and Lymphovenous Anastomosis (LVA). Our team is committed to delivering person-centred care informed by the latest evidence-based practice, utilising state-of-the-art imaging technology to accurately assess and diagnose lymphoedema, lipoedema, and other chronic oedemas. This ensures precise evaluations and effective, tailored treatment planning.

Our clinic continues to offer a comprehensive range of supportive therapies, including Manual Lymphatic Drainage (MLD) massage, compression therapy, and tailored exercise program, focusing on improving overall well-being, enhancing functionality, and helping individuals achieve their personal goals. The clinic is also fully equipped to manage all aspects of cancer rehabilitation. We implement a prospective surveillance and early intervention model of care, allowing for proactive monitoring and management of any emerging issues ensuring our patients receive timely and effective interventions, promoting optimal health outcomes and improving quality of life.

Conservative Clinic

Our Conservative Clinic continues to experience strong demand, with a 21% increase in patient services compared to the previously reported year. Our team of accredited practitioners understands the unique challenges faced by individuals at risk of or living with lymphoedema, lipoedema and chronic oedemas, and remains dedicated to providing personalised, needs-based care highlighting our ongoing commitment. We offer Complex Lymphoedema Therapy (CLT), which offers a structured and holistic approach to treatment and long-term management.

This is a two-pronged approach beginning with intensive interventions to reduce limb volume and alleviate symptoms, followed by a second phase that empowers individuals with the knowledge, skills and support needed for effective self-management at home.

2024/2025	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Total
Initial Consultations	17	48	42	55	46	39	64	51	63	36	45	47	553
Follow-ups	165	193	165	175	170	113	164	171	174	134	142	132	1898
Total patient services	182	241	207	230	216	152	228	222	237	170	187	179	2451
Clinics	23	18	19	20	19	14	18	18	19	21	20	20	229

Diagnostic Clinic

Our patient services in our Diagnostic Clinic have remained steady, underscoring our dedication to delivering innovative, accurate, and effective care. The clinic is supported by a multidisciplinary team of experienced clinicians, who work collaboratively to provide accurate diagnoses and individualised treatment plans. We utilise advanced diagnostic technologies such as MRI and lymphoscintigraphy, along with ICG lymphography, which enables real-time visualisation of the lymphatic system and enhances the precision of our lymphatic drainage techniques. After each ICG assessment, patients receive a comprehensive report that can be shared with their referring doctor or practitioner, promoting clear communication and co-ordinated care. Ongoing follow-up is also available to support patients in implementing the recommended treatment plan and improving their condition within a supportive, patient-centred environment.

2024/2025	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Total
Initial Consultations	30	20	36	28	28	28	24	42	41	42	46	36	401
Follow-ups	15	11	19	7	10	10	7	11	7	7	11	4	119
Total patient services	45	31	55	35	38	38	31	53	48	49	57	40	520
Clinics	14	14	13	12	12	11	8	10	10	10	13	9	136
ICGs	17	24	14	19	18	22	15	21	23	28	24	24	249

Surgical Clinic

Over the past three years, patient service levels in the Surgical Assessment Clinic have remained consistent, demonstrating the ongoing reliability and expertise of our specialist team.

This specialised clinic focuses on evaluating the presence and severity of lymphoedema and assessing the suitability of surgical intervention based on clearly defined protocols. Our comprehensive assessment process includes an in-depth review of each patient’s medical and lymphoedema history, along with detailed physical, functional, and psychological evaluations. This holistic approach allows us to fully understand the condition’s impact on the individual and to recommend surgical options tailored to their specific needs. Our primary aim is to deliver precise, personalised assessments that support effective treatment planning and optimal outcomes.

We offer three surgical options based on the stage and nature of the condition. For early to moderate lymphoedema, procedures such as LVA and VLNT help restore lymphatic flow. Liposuction is available as an effective treatment option for advanced lymphoedema.

2024/2025	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Total
Initial Consultations	10	10	5	4	5	0	6	8	7	3	5	1	64
Follow-ups Pre Surgery	15	27	9	21	17	11	19	14	19	11	17	13	193
Total Patient Services	25	37	14	25	22	11	25	22	26	14	22	14	257
Clinics	2	3	2	2	2	1	2	2	2	1	2	1	22
ICGs	1	4	5	3	0	0	0	3	3	2	3	3	27
Liposuction	3	3	2	3	5	2	2	4	6	2	1	4	37
LNT/LVA/Combined/Other Surgery	2	0	0	0	2	0	0	0	1	0	1	1	7

Lipoedema Clinic

In response to growing demand, we launched a monthly diagnostic and surgical clinic in July 2024. This clinic provides specialised care for individuals affected by lipoedema, a chronic condition characterised by abnormal fat distribution and associated pain and mobility issues. Our multidisciplinary team offers comprehensive assessments to confirm diagnosis, evaluate severity, and develop personalised management plans. Services include conservative treatments such as compression therapy, manual lymphatic drainage, exercise prescription, and education on lifestyle modifications. Where appropriate, referrals for surgical interventions such as liposuction may also be discussed. We are committed to delivering compassionate, evidence-based care that supports improved function, reduced discomfort, and enhanced quality of life.

2024/2025	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	Jun	Total
Lipoedema Diagnosis	3	0	2	3	3	1	0	2	2	1	0	2	19
Pre-op	0	1	0	1	1	1	0	1	2	1	0	0	8
Follow-ups - post op	0	0	0	0	1	2	0	1	3	7	0	4	18
Total Patient Services	3	1	2	4	5	4	0	4	7	9	0	6	45
Clinics	1	1	1	1	1	1	0	1	1	1	0	0	9



Program members

Centre Director

A/Prof Louise Koelmeyer
BAppSc(OT) USyd, PhD MQ
Head, Department of Health Sciences

Education | Teaching Team

Dr Belinda Thompson
BExSpSc UON, MClinExPhys CSturt, PhD UON
Lecturer (Teaching and Research)
Course Director and Lead, Connected Curriculum for Professionals in Health

Robbie Blackwell
BAppSc(OT) Usyd
Co-Team Leader | Senior Lymphoedema Practitioner

Fiona Tisdall Blake
BAppSc(Phty) LaTrobe
Senior Lymphoedema Practitioner

Dr Vincent Singh Paramanandam
BPT KMCH Physiotherapy - Coimbatore India, MSc (Psych) UOM, MPT (Ortho) CAEHS India, MSc (Cancer Care) OBU, PhD USyd
Postdoctoral Research Fellow

Robin Blumfield
ALERT Project Officer

Meredith Macdonald
BAppSc(OT), USyd
Part-time Administration Assistant

Poonam Gurung
Part-time Casual Administration Assistant

Our Education team is further enhanced by the inclusion of highly qualified external consultants and accredited lymphoedema therapists. These professionals play a key role in delivering our comprehensive training programs. With their extensive knowledge and experience, they ensure our offerings are of the highest quality and relevance. Their diverse expertise enables them to address a wide range of learning needs and styles, enriching the educational experience for all our students.

Gary Bain
DipApSc Avondale, BN UTS, MClinEd NSW
The Wound Guy

Melissa Thorne
BSc(OT) CUT
Senior Occupational Therapist
Fiona Stanley Hospital, WA

Research Team

A/Prof Hiroo Suami
MD Shinshu, PhD Keio
Research Lead

Dr Vincent Singh Paramanandam
BPT KMCH Physiotherapy - Coimbatore India, MSc (Psych) UOM, MPT (Ortho) CAEHS India, MSc (Cancer Care) OBU, PhD USyd
Postdoctoral Research Fellow

Dr Belinda Thompson
BExSpSc UON, MClinExPhys CSturt, PhD UON
Lecturer (Teaching and Research)
Course Director and Lead, Connected Curriculum for Professionals in Health

Dr Luke Davies
BHLthSc(Sp&ExSc) WSU, MClinExPhys (Rehab) CSU, DPT MQ, PhD UoM
Lecturer | Research Fellow

Katrina Gaitatzis
BSc (Health & Exercise) UNSW, GradDip (Psych) UNE, BA (Honors, Psych) UNE
Research Coordinator

Lori Lewis
BAppSc(Phty) CU, DipReflexology NCC
Senior Research Officer

Robyn Ricketts
BAppSc (OT) USyd, MCom UNSW
Research Officer

Sue Ryan
BPharm USyd, GradDipEd UNE
Research Officer

Treatment | Clinic Team

A/Prof Helen Mackie
MBBS USyd, PostGradDip Otago, GradCert UC, PostGradCert UOA, MRes MQ
Medical Lead

A/Prof Thomas Lam
MBBS UNSW, DclinSurg Usyd, FRACS, FRCSEd, FRCSGlasg, FCSHK, FHKAM (Surg), FRSM
Plastic and Reconstructive Surgeon

Dr Quan Ngo
MBBS(Hons) UNSW, MS USyd, FRACS
Plastic and Reconstructive Surgeon

Dr Stephanie Lam
BAppSc(Phty) USyd, MBBS Notre Dame, AFRM(RACP)
Rehabilitation Specialist

Dr Fey-ching Un
MBBS USyd, AFRM(RACP)
Rehabilitation Specialist

Robbie Blackwell
BAppSc(OT) Usyd
Co-Team Leader | Senior Lymphoedema Practitioner

Asha Heydon-White
BPhty UQ, MRes MQ
Co-Team Leader | Senior Lymphoedema Practitioner

Brenda Gutierrez
BAppSc(OT) USyd
Senior Lymphoedema Practitioner

Fiona Tisdall Blake
BAppSc(Phty) LaTrobe
Senior Lymphoedema Practitioner

Kim Toyer
BAppSc(Phty) Usyd, GradDipEd in Childbirth CEA
Senior Lymphoedema Practitioner

Katie Banning
BHumSc MQ, DPhysio MQ
Lymphoedema Practitioner

Meena Hami¹
BAappSc(Phty) ACU
Lymphoedema Practitioner

Linda Tyas-Riddle
AdvanceDipHealthSciences, TAFE
Clinic Practice Manager

Rebecca Hampton
Clinic Coordinator

Ruby Presdee²
Full-time Reception | Administration
Assistant

Louise Green | Liz West | Helene Babic
Part-time Reception | Administration
Assistant

Liz West
Part-time Reception | Administration
Assistant

Helene Babic
Part-time Reception | Administration
Assistant

1 Parental leave from May 2024

2 Resigned May 2025



Our accredited lymphoedema practitioners



Students

Master of Research (MRes)

Robbie Blackwell

BAappSc(OT) USyd

Evaluating the effectiveness of compression garment prescription for lower limb swelling based on objective imaging of the lymphatic system using ICG lymphography.

Doctor of Philosophy (PhD)

Rhiannon Stellmaker

BExSpSc(Hons)UON, MRes Macq

Effects of a lifestyle intervention on body composition and quality of life for women with lipoedema.

Jake Chia

MBBS (USyd), MS (USyd)

Macquarie University

Impacts of reversed sequenced autologous breast reconstruction.

Doctor of Medicine (MD)

Matthew Kostic

Observing traumatic lower limb lymphoedema drainage patterns with Indocyanine Green lymphology and its implications on clinical management.

Zachias Hopkins

Lymphatic drainage patients in non-breast-cancer-related of the upper limb using Indocyanine Green lymphology.

Doctor of Physiotherapy (DPT)

Geoff Doctor

Exploring the relationship between limb volume and dermal backflow in cancer-related lower limb lymphoedema: A cross-sectional retrospective study using circumferential volume measurements and Indocyanine Green lymphography.

Riya Manandhar

Exploring the relationship between dermal backflow and limb volume in breast cancer-related lymphoedema: A cross-sectional retrospective cohort study using Indocyanine Green fluorescence lymphography and circumferential measurement.

Sonia Singh

LymphaTech vs Total Limb Circumference Measures (TLCM): Interchangeable measure of lower limb volume in lipoedema patients.

Rosa Comi

Interchangeability of circumferential tape measurements and the LymphaTech 3D Imaging System in the determination of limb volume for people with lower limb lymphoedema.

Jingyi Chen

Evaluating the interchangeability of LymphaTech and perometry for upper limb measurement in patients with breast cancer related lymphoedema: A retrospective cross-sectional analysis.

Daniel Xie

A portable three-dimensional imaging system (LymphaTech) for arm volume measurements in breast cancer related lymphoedema patients: Agreement with tape measures.

Madeleine Stockden

BA ECU, BSC(Physio) Curtin, M MANIP Th Curtin
Effect of different snake bite bandaging techniques on superficial lymphatic transit in the upper and lower limb using ICG Lymphography.

Master of Research (MRes) Completions

Amy Tamatoa

BPhty UNDA

A comparison between face-to-face and telehealth exercise classes for individuals diagnosed with cancer.

Katrina Gaitatzis

BSc (Health & Exercise) UNSW, GrapDip (Psych) UNE, BA (Honours, Psych) UNE

Assessing head and neck cancer-related lymphoedema using Indocyanine Green (ICG) lymphography and physical, functional and psychological impacts.



Doctor of Medicine and Doctor of Physiotherapy students with Louise Koelmeyer

Visitors

Our Centre continues to attract academic visitors and industry partners year-round, welcoming guests from across the globe eager to observe our multidisciplinary approach first-hand. Students from Macquarie University's Doctor of Physiotherapy and Doctor of Medicine programs also attend our clinic as part of their placement experience.

Associate Professor Leigh Ward
Honorary Associate Professor
School of Chemistry and Molecular Biosciences
The University of Queensland, QLD
22-24 July 2024, 7-9 August 2024
10-16 March 2025

Tye Galloway
Clinical Data Scientist
ImpediMed, QLD
7-9 August 2024
10-16 March 2025

Dr Luke Watson
Plastic and Reconstructive Surgeon
Princess Alexandra Hospital, QLD
15-16 August 2024

Dr Hayley Reynolds
Auckland Bioengineering Institute
University of Auckland, NZ
5-8 November 2024

Dr Megan Frisk
Director, Division of International Affairs
ARPA-H, USA
6 December 2024

Mr Pierre Habshi
Political and Economic Affairs Officer
US Consulate General, NSW
6 December 2024

Dr Gurusamy Manokaran
Honorary Associate Professor
Apollo Hospital, India
11 December 2024

Dr Richelle Gaw
Senior Research Scientist
ImpediMed, QLD
10-16 March 2025

Michaela Tebroke
Director Global Marketing & Innovation
Compression Therapy
Essity, Germany
18 March 2025

Dr Lisa Sherry
Director of Rehabilitation Medicine
Austin Health, VIC
11, 15 April 2025



Hiroo Suami and Louise Koelmeyer with Megan Frisk

Student visitors

Manpreet Singh
Doctor of Medicine
Macquarie University
9, 19, 23 July & 1 August 2024

Narayani Pathak
Bachelor of Clinical Sciences
Macquarie University
26 July & 6 December 2024

Olivia Beatty
Doctor of Medicine
Macquarie University
16, 20, 27 August 2024

Ruselle Panis
Master of Research
Macquarie University
30 August & 22 October 2024

Rosa Comi
Doctor of Physiotherapy
Macquarie University
3 September 2024

Sonia Singh
Doctor of Physiotherapy
Macquarie University
3, 13 September 2024

Ginnie Chen
Doctor of Physiotherapy
Macquarie University
13, 24 September 2024

Daniel Xie
Doctor of Physiotherapy
Macquarie University
6, 10 September & 25 October 2024

Geoff Doctor (Intern)
Doctor of Physiotherapy
Macquarie University
10 September 2024
3 February - 25 June 2025

Riya Manandhar (Intern)
Doctor of Physiotherapy
Macquarie University
24, 27 September 2024
3 February - 25 June 2025

Mishka Ashokumar
Doctor of Medicine
Macquarie University
8, 15, 25 October 2024

Lalida Sutejitsiri
Doctor of Philosophy
Auckland Bioengineering Institute
University of Auckland, NZ
5 November 2024

Matthew Armstrong
Doctor of Medicine
Macquarie University
11, 20, 28 February 2025

Alexander Bjorkmann
Doctor of Medicine
Macquarie University
11, 25, 28 March 2025

Kundana Uppalapati
Doctor of Medicine
Macquarie University
1, 6 May 2025

Zachary Thornton
Doctor of Medicine
Macquarie University
29 May & 5, 20 June 2025

Honorary appointments

Professor John Boyages
Honorary Professor
ICON Cancer Centre, Australia

Professor Håkan Brorson
Honorary Professor
Lund University, Sweden

Dr Gurusamy Manokaran
Honorary Associate Professor
Apollo Hospital, India

Associate Professor Leigh Ward
Honorary Associate Professor
University of Queensland, Australia



Our partners

Industry partners

As an ALA-accredited training provider, the ALERT Centre sincerely appreciates the ongoing support and commitment of our industry partners. We recognise that delivering gold-standard training to health professionals - whether they are becoming accredited lymphoedema practitioners or seeking to upskill - would not be possible without their valued contributions.

The face-to-face practical learning and assessment component of our training programs is greatly enriched by the provision of catalogues, product information, and sample products from our industry partners. Students consistently report that this hands-on experience is an invaluable part of their training, helping them build the knowledge and confidence needed to become effective lymphoedema practitioners. Students also report that the industry partner videos embedded within our online units significantly enhance their learning experience.

We also acknowledge and deeply value their partnership with the Macquarie University Health Lymphoedema Clinic, which enables our clinicians and practitioners to deliver high-quality, patient-centred care.

The supply of products, such as bandages, pumps, ready-to-wear, and custom-made garments, by our industry partners is crucial to the effective management of lymphoedema, lipoedema, and chronic oedemas at the Clinic. These essential items play a key role in treatment and daily care, greatly improving patients' quality of life.

- Bamford, NZ
 - Essity
 - Garnet Medical
 - Haddenham Healthcare Group
 - ImpediMed
 - Jobskin
 - Leila O'Toole
 - Lohmann & Rauscher
 - Macquarie Medical Imaging
 - medi Australia
 - Medi-Rent
 - Mölnlycke
 - OPC Health
 - Sentry Medical
- Solventum
 - Thuasne Pacific Pty Ltd
 - Toomac Solutions, NZ



Peak Body

- Australasian Lymphology Association

Advocacy Partners

- Australasian Society for Breast Disease
- Lymphedema Education and Research Network
- Lymphoedema Association Australia
- YWCA Encore (Breast Cancer Exercise Program)

Government

- NSW Health
- WA Health

International Academic Institutions

- Auckland Bioengineering Institute, Auckland University, NZ
- Boston Lymphatics Center, Harvard Medical School, USA
- Massachusetts General Hospital, Harvard Medical School, USA
- Lund University, Sweden
- Ohio State University, USA
- Okayama University, Japan
- The University of Queensland
- Vanderbilt University, USA

International Industry

- Hamamatsu
- Techno Takatuski Co Ltd
- Terumo Corporation, Japan

Outputs

Publications

Books

1. Boyages, J. (2025). Lymphoedema: Taking Control, Sydney, Australia: BC Publishing.

Journal Articles

1. Fanning, J.E., Chung, D.K.V., Reynolds, H.M., Jayathungage Don, T.D., Suami, H., Donohoe, K.J., & Singhal, D. (2025). Collateralization of the upper extremity lymphatic system after axillary lymph node dissection. *Journal of Surgical Oncology*, 131(1):47-53.
2. Mackie, M., Thompson, B.M., Ricketts, R., Toyer, K., Heydon-White, A., Koelmeyer, L.A., & Lam, T.C. (2025). Outcome of liposuction for limb lymphoedema in men compared with women. *Journal of Plastic, Reconstructive and Aesthetic Surgery*, 13,4(1), 1-6.
3. Paramanandam, V.S., Dylke, E., & Kilbreath, S. (2025, in press). Cross-cultural adaptation of the breast cancer and Lymphedema Symptom Experience Index in Bengali. *Journal of Transcultural Nursing*.
4. Situ, J., Walker, C., Jayathungage Don, T.D., Suami, H., Chung, D.K.V., & Reynolds, H.M. (2025). Discordance between peritumoral and subareolar injections for mapping sentinel lymph nodes in breast cancer. *Breast Cancer Research and Treatment*, 209(2), 283-290.

5. Ward, L.C., Gaitatzis, K., Thompson, B., Paramanandam, S.V., & Koelmeyer, L.A. (2025, in press). Improving precision of bioimpedance spectroscopic analysis for lymphedema and lipedema assessment. *Lymphatic Research and Biology*.
6. Ward, L.C., Gaitatzis, K., Thompson, B., & Koelmeyer, L. (2025, in press). Assessment of bilateral lower limb lymphoedema: The use of bioimpedance spectroscopy. *Disability and Rehabilitation*.
7. Binks, M., Boyages, J., Suami, H., Ngui, N., Meybodi, F., Hughes, T.M., & Edirimanne, S. (2024). Oncoplastic breast surgery - a pictorial classification system for surgeons and radiation oncologists (OPSURGE). *ANZ Journal of Surgery*, 94(12), 2140-2149.
8. Fanning, J.E., Singhal, D., Reynolds, H.M., Jayathungage Don, T.D., Donohoe, K.J., Suami, H., & Chung, D.K.V. (2024). Patterns of forearm lymphatic drainage to the epitrochlear lymph nodes in 1400 cutaneous melanoma patients. *Journal of Surgical Oncology*.
9. Gaitatzis, K., Thompson, B., Tisdall Blake, F., & Koelmeyer, L. (2024). Patient-reported outcome measures and physical function following head and neck lymphedema - a systematic review. *Journal of Cancer Survivorship*.
10. Shah, C., Boyages, J., Koelmeyer, L., Chen, S.L., & Vicini, F. (2024). Timing of breast cancer related lymphedema

- development over 3 years: Observations from a large, prospective randomized screening trial comparing bioimpedance spectroscopy (BIS) versus tape measure. (2024). *Annals of Surgical Oncology*, 31(1), 7487-7495.
11. Ward, L.C., Gaitatzis, K., Thompson, B., Paramanandam, V.S., & Koelmeyer, L. (2024). Reliability of L-Dex scores for assessment of unilateral breast cancer-related lymphedema (BCRL). *European Journal of Breast Health*, 20(4), 251-257.
 12. Vargo, M., Aldrich, M., Donahue, P., Iker, E., Koelmeyer, L., Crescenzi, R., & Cheville, A. (2024). Current diagnostic and quantitative techniques in the field of lymphedema management: A critical review. *Medical Oncology*, 41, 241.

Commentary

1. Cho, M-J., Nguyen, V., Suami, H., Kraft, C.T., & Kraft, M.T. (2024). Maximizing safety of ultrasound-guided intralymphatic allergen administration in the superficial inguinal lymph node. *European Journal of Allergy and Clinical Immunology*.

Conference Presentations | Symposia

1. Paramanandam, V.S., Dylke, E., Daptardar, A., Kulkarni, A., Kamat, M., Mahajan, S., & Kilbreath, S. (2025, 26-28 Jun). Translation and validation of the Breast Cancer and Lymphoedema Symptom Experience Index (BCLI-SEI)

in Bengall. Paper presentation at the Multinational Association of Supportive Care in Cancer (MASCC)/International Society of Oral Oncology (ISOO) 2025 Annual Meeting, Seattle, USA.

2. Paramanandam, V.S., Dylke E., Fu, M., Daptardar, A., Kamat, M., Mahajan, S., & Kilbreath, S. (2025 26-28 May). Cross-cultural adaptation of the Breast Cancer and Lymphoedema Symptom Experience Index (BCLI-SEI) in Marathi. Paper presentation at the Multinational Association of Supportive Care in Cancer (MASCC)/International Society of Oral Oncology (ISOO) 2025 Annual Meeting, Seattle, USA.
3. Blackwell, R., & Paramanandam, V.S. (2025, 16-18 May). ICG imaging: Influence on compression decision making in clinical practice. Invited workshop sponsored by Haddenham Healthcare at the ALA Symposium, Freemantle, WA.
4. Heydon-White, A. (2025, 16-18 May). Medi Circaid Reduction Vest. Video presentation at the Wrap it up: Innovative approaches to head, neck and trunk lymphoedema treatment workshop sponsored by medi Australia at the ALA Symposium, Freemantle, WA.
5. Mackie, H. (2025, 16-18 May). Lipedema and obesity: Concurrent or comorbidity or complication: Assessment and diagnostic conversation and therapy options. Paper presented at the ALA Symposium, Freemantle, WA.

6. Stockden, M. (2025, 16-18 May). Effect of snake bite bandaging on superficial lymphatic transit in the lower limb using ICG lymphography. Invited keynote presentation at the ALA Symposium, Freemantle, WA.
7. Tamatoa, A. (2025, 16-18 May). A comparison between face-to-face and telehealth exercise for individuals diagnosed with cancer. Invited keynote presentation at the ALA Symposium, Freemantle, WA.
8. Tisdall-Blake, F. (2025, 16-18 May). Go with the flow: Utilising ICG informed lymphatic drainage pathways in the treatment of head and neck lymphoedema. Invited workshop at the ALA Symposium, Freemantle, WA.
9. Toyer, K., & Gutierrez, B. (2025, 16-18 May). Delivering dosage in compression garments more than just CCL. Paper presented at the ALA Symposium, Freemantle, WA.
10. Koelmeyer, L. (2025, 16-17 May). Personalizing lymphoedema management: Translating research into clinical practice. Invited presentation at the 2nd International Földi Clinic Days - Lymphology in the Black Forest, Titisee, Germany.
11. Thompson, B. (2025, 16-17 May). Edema in lipedema syndrome: Dispelling myths with scientific evidence. Invited presentation at the 2nd International Földi Clinic Days - Lymphology in the Black Forest, Titisee, Germany.
12. Koelmeyer, L. (2025, 22-23 Mar). The PREVENT Study: Early intervention wearing compression therapy after breast cancer. Invited presentation at the 1st COMPAS Meeting - Navigating the future of compression therapy in the APAC region, Osaka, Japan.
13. Koelmeyer, L. (2025, 13 Mar). Keeping ALERT: Innovative assessment and management of lymphoedema. Invited presentation at the Faculty of Medicine, Health and Human Sciences Symposium, Sydney.
14. Suami, H. (2025, 6-8 Mar). Understanding anatomical changes in lymphedema after node dissection and its applications for management. Invited presentation at the 1st International Congress on Advanced Lymphedema Surgery (iCALS), Kaohsiung, Taiwan.
15. Lam, T. (2025, 4 Jan). Liposuction for lymphoedema. Invited presentation at the Australian Chinese Medical Association 15th Meet The Expert Conference, Tokyo, Japan.
16. Mackie, H. (2024, 23 Nov). Lessons from ICG: Personalizing conservative lymphedema management using ICG lymphography. Invited presentation at the Lymphedema Society of Singapore Symposium, Singapore.
17. Suami, H. (2024, 23 Nov). Making invisible visible: Anatomical studies of the lymphatic system and lymphoedema. Invited presentation at the Lymphedema Society of Singapore Symposium, Singapore.
18. Koelmeyer, L., Thompson, B., Mackie, H., Suami, H., & Ward, L. (2024, 18-21 Nov). Exploring the potential for bioimpedance spectroscopy to assist with lipoedema diagnosis. Invited presentation at the Lipedema Foundation Retreat, Herdon, Virginia, USA.

19. Suami, H. (2024, 9 Nov). Understanding anatomical changes in lymphoedema with ICG lymphography. Invited presentation at LYMPHOCON, Chennai, India.
20. Suami, H. (2024, 9 Nov). Diagnostic assessment of lymphoedema. Invited presentation at LYMPHOCON, Chennai, India.
21. Suami, H. (2024, 9 Nov). The lymphosome concept: Anatomical study of the lymphatic system for translational research. Invited presentation at LYMPHOCON, Chennai, India.
22. Mackie, H. (2024, 16-17 Oct). Management of oedema in spinal cord injuries. Invited presentation at the RNSH/ACI Spinal Cord Injury Conference, Sydney, NSW.
23. Blackwell, R., & Suami, H. (2024, 14 Sept). Personalising conservative lymphoedema management using ICG lymphography. Invited presentation at the 8th Annual Meeting of the Japanese Society of Lymphedema Treatment, Tokushima, Japan.
24. Suami, H. (2024, 14 Sept). Anatomical changes in the lymphatic system after lymph node dissection. Invited presentation at the 8th Annual Meeting of the Japanese Society of Lymphedema Treatment, Tokushima, Japan.
2. Koelmeyer, L. (2025, 4 Mar). Lymphoedema early action: Translating early intervention into impact. medi Australia Webinar.
3. Toyer, K. (2025, 20 Feb). Genital oedema. Invited presentation at the Lymphoedema Association Australia Webinar.
4. Koelmeyer, L. (2024, 8 Nov). Implementing a prospective surveillance and early intervention model of care: Opportunities and challenges. Presentation to Corewell, sponsored by ImpediMed, Grand Rapids, USA.
5. Koelmeyer, L. (2024, 5 Nov). Implementing a prospective surveillance and early intervention model of care: Opportunities and challenges. Presentation to University of California, San Francisco, sponsored by ImpediMed. San Francisco, USA.
6. Koelmeyer, L. (2024, 5 Nov). Implementing a prospective surveillance and early intervention model of care: Opportunities and challenges. Presentation to Honor Health, sponsored by ImpediMed, online.
7. Koelmeyer, L. (2024, 4 Nov). Implementing a prospective surveillance and early intervention model of care: Opportunities and challenges. Presentation to Kaiser Permanente, sponsored by ImpediMed, Santa Clara, USA.

Colloquia | Webinars

1. Heydon-White, A. (2025, 12 Jun). Under pressure: A clinical approach to breast lymphoedema - assessment and management. medi Australia Webinar.
8. Koelmeyer, L. (2024, 16 Sept). Implementing a prospective surveillance and early intervention model of care: Opportunities and challenges. Lift Cancer Services Webinar.

9. Koelmeyer, L. (2024, 16 Aug). Keeping ALERT: Innovation management of lymphoedema. Presentation to breast surgeons sponsored by Karl Storz, Perth, WA.
10. Koelmeyer, L. (2024, 30 July). Keeping ALERT – Updates in lymphoedema management. RACGP Advances in Breast Cancer: Imaging, Surgery and Lymphoedema Management Webinar.

Poster

1. Lim, K., Hsieh, Y-H., & Sumai, H. (2025, 26-28 May). Evolving concepts of a long neglected system: Historical successions of the human lymphatic system discoveries. Poster presented at the Plastic Surgery Congress 2025, Sydney, NSW.

Grants | Research Partnership

1. Koelmeyer, L. (2024-2027). Collaborative Partnership Agreement with Essity. \$897,263.88
2. Koelmeyer, L. (2024-2025). Indocyanine Green (ICG) lymphography in lower limb lymphoedema and the implications for self management and compression garment prescription. Enterprise Partnership Scheme with Haddenham Healthcare, \$64,340.02.
3. Koelmeyer, L. (2023-2025). Collaborative partnership funding. Essity, \$117,000.
4. Paramanandam, V.S., Koelmeyer, L., Kingsford, C., & Thompson, B. (2018-2027). New approaches to early detection of lymphoedema in a home-based setting, monitoring of body composition changes during

the care continuum and lymphatic imaging. Macquarie University Research Collaboration (Co-Funded Fellowship) Agreement with ImpediMed, \$1,446,840.05.

Awards

1. Rambaldini, B., Hunter, J., Cross, C., Wiggins, T., Speier, S., Kirwan, M., Gwynne, Kylie, Thompson, B., Koelmeyer L., Pacey, V., Gray, K., & Chau, J. (2024). “Best Presentation – Teaching Excellence”. Macquarie University, Faculty of Medicine, Health and Human Sciences, Education & Employability Symposium Awards.



Helen Mackie

Research Outputs

	20 21	21 22	22 23	23 24	24 25
Book Chapters	2	2	2	2	1
Journal Articles Commentary Conference Proceedings	10	10	14	19	13
Conference Presentations Symposia	7	24	18	40	24
Colloquia Webinars	14	10	9	16	10
Posters	2	3	0	4	1
Grants Research Partnerships	1	5	2	2	0
Awards	1	1	5	2	1

Education Outputs

	20 21	21 22	22 23	23 24	24 25
Number of training programs	4	11	14	11	14
Number of students	52	208	221	116	148
Webinars	1	1	1	1	0
Newsletters	3	3	3	3	3

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