



NATIONAL BREAST CANCER RESEARCH INSTITUTE



www.breastcancerresearch.ie



Pink Ribbon Tour Cycle



Mayo Pink Ribbon Charity Cycle



Flynn's of Lackagh SuperValu

Introduction

The National Breast Cancer Research Institute is a charity that funds a comprehensive research programme at the Lambe Institute for Translational Research, NUI Galway. It is lead by Professor Michael Kerin. Launched in 1991, the objective is to fund relevant, ethical research into the biology of breast cancer, and improve treatments and outcomes.

Why Support Us

Breast cancer is the highest cause of death in middle-aged women in Ireland. The Breast Cancer Research programme is patient-focused, involving clinicians and scientists. Bringing lab findings to the clinical setting is a long-term commitment, and expensive. Our programme will benefit hugely from your support.

Your Donation

Donations to the National Breast Cancer Research Institute are currently helping the research team. Our research team collaborates with genetic scientists, clinical trialists, medical technology engineers and Big Data investigators at universities and hospitals here and abroad. Our research is not only impacting breast cancer in Ireland, but across the globe. The charity relies on voluntary contributions and does not receive direct funding from the government.

Fundraising Events

We raise funds for research from charity events, community-based fundraising, and support from individuals and companies. Fundraising also creates awareness and encourages more women to become breast aware.



Play in Pink



Research team at NUI Galway



Did You Know?

Breast Cancer Facts

Breast cancer is the most common cancer among women in Ireland (excluding skin cancers)

The term "breast cancer" is a term that describes many different types of malignant breast tumours, each with a specific set of biological processes that influence the risk of a person developing cancer and how their cancer develops and responds to treatment.

1 in 9 Irish women will develop breast cancer during their lifetime

More than 3,200 cases of breast cancer are diagnosed each year in Ireland

Breast Cancer can affect anyone - irrespective of age, lifestyle and gender

Approximately 16 men will develop breast cancer each year in Ireland

Women are most commonly diagnosed after the age 50



Support Us

There are lots of ways you can support us

Organise a fundraising event or join us at one of our events or challenges; from mini marathons to cycles to fashion shows

Get together with your community or colleagues to raise funds

Make National Breast Cancer Research Institute your Charity of the Year

Support us as part of your corporate social responsibility activities at work

Sponsorships opportunities

For further information visit:
www.breastcancerresearch.ie

Tel + 353 91 863917

Email hello@breastcancerresearch.ie

National Breast Cancer Research Institute,
Breast Symptomatic Unit,
University Hospital Galway, Galway City.



Your Donation

How your money supports research

Buying laboratory equipment and all the chemicals, plastic tubes, and experimental kits

Student scholarships

Research staff fellowships

Supporting our team in communicating their research and learning from other researchers, through scientific journal publications and conference attendance.

Personalising Breast Cancer Diagnosis and Treatment

Cancer genetics research and risk assessment examines the role of heredity in the development of cancer. It is not possible to change a person's DNA, but if researchers and clinicians better understand how genes play a role in breast cancer, they can take steps to alter the risk of a person developing cancer and predict how they will respond to the disease. Many people will have heard of the BRCA1 and BRCA2 genes. These account for only a small number of breast cancers. Our genetics research programme focuses on looking for new genetic variants that could increase a person's risk of breast cancer. The hope is that this would lead to more accurate testing, placing more emphasis on preventative measures, e.g. breast screening at a younger age or prophylactic surgery (breast removal).

Principal Investigator: Dr Nicola Miller, Lecturer, Discipline of Surgery



Engineering Breast Tissue

Many breast cancer patients have surgery and may lose part or all of their breast. Breast reconstruction has been proven to have a positive effect of on patient's psychological wellbeing and quality of life. The two most common methods of breast reconstruction are silicone implants and muscle and fat taken from other parts of the body e.g. the back or abdomen, to recreate the breast. Our research concentrates on the feasibility of growing a new breast from a patient's own adipose (fat) cells. Adipose tissue contains "adipose derived stem cells" (ADSCs). We are growing these cells in our lab and working with biomedical engineers to create new breast tissue that could be used to recreate the breast after mastectomy.

Principal Investigator: Professor Aoife Lowery, Associate Professor and Consultant Surgeon

Targeting the Tumour Stroma

Tumour stromal cells (TSCs) are an important group of cells that are found in breast tumours. These cells can release factors that cause cancer growth and spread (metastasis) and potentially making the tumour resistant to chemotherapy and more likely to reappear (chemoresistance). Finding a way to target these cells would be extremely useful in breast cancer treatment. We have developed a process in the lab that enables us to isolate tumour and normal stromal cells from patient breast cancer tissue, and to examine the factors that are only present in TSCs and not in normal stromal cells. This will help us develop new precision drugs that target TSCs specifically, and will reduce tumour growth, metastasis and chemoresistance.

Principal Investigator: Dr Laura Barkley, Senior Research Fellow, Discipline of Surgery



Hijacking Cell Communication for Breast Cancer Therapy

When breast cancer has spread to other organs it is more challenging to treat. Dr Dwyer's current research, in collaboration with national and international research groups, focuses on development of new approaches to treat advanced breast cancer. Her team investigates how different cell types within a tumour communicate and send signals around the body that help the disease to spread. They aim to hijack this crosstalk to specifically kill cancer cells, while leaving healthy cells unharmed.

Principal Investigator: Dr Róisín Dwyer, Lecturer in Translational Science, Discipline of Surgery

Innovative Diagnostics & Therapeutics

NUI Galway, in collaboration with MVG Industries is piloting a first-in-human clinical trial of low-powered microwave imaging for breast cancer evaluation. This is a non-invasive test that does not use ionizing radiation and has no uncomfortable compression of the breast (unlike the mammograms that are currently used). If this trial is successful it could allow for more frequent scans of the breast to monitor breast health, response to chemotherapy, and routine screening and diagnosis of breast cancer at an early stage. In this trial, data is collected to provide early safety information to government regulatory bodies on this potentially lower cost screening option, and to enhance future designs of cancer diagnostic devices.

Principal Investigator: Professor Michael Kerin, Professor of Surgery and Consultant Surgeon



Focus on: Clodagh O'Neill

Clodagh O'Neill is currently in the second year of her National Breast Cancer Research Institute-funded PhD and works with Dr Róisín Dwyer investigating the potential for tiny biological vesicles to be used as a novel treatment for breast cancer. Clodagh published her first review article in 2019, and at the Irish Association for Cancer Research meeting was awarded an AOIFA mobility grant to support a training visit in November 2019 to collaborators in the University of Arizona. Building on the platform of National Breast Cancer Research Institute support, this provided a fantastic opportunity to strengthen our international collaborations and develop new experimental techniques.

O'Neill CP, Gilligan KE and Dwyer RM. Role of Extracellular Vesicles (EVs) in Cell Stress Response and Resistance to Cancer Therapy. Cancers (Basel) 2019 Jan 24;11(2). pii: E136. doi: 10.3390/cancers11020136. PMID: 30682793



New Partnerships



Launched in 2019, the Centre for Research Training in Genomics Data Science is a collaboration between data scientists, clinicians and translational scientists from multiple Irish Universities. National Breast Cancer Research Institute, in collaboration with bioinformatics research colleagues at NUI Galway, are funding a four-year PhD student as part of this programme.



National Breast Cancer Research Institute is a charity partner of Precision Oncology Ireland which was launched in November 2019. A five-year programme it is a consortium of five Irish Universities, six Irish Charities, and nine international companies aiming to develop new diagnostics and therapeutics for the personalised treatment of cancer. The consortium is part-funded by Science Foundation Ireland under their Strategic Partnership Programme. Professor Michael Kerin and Dr Róisín Dwyer are leading the Precision Oncology Ireland-National Breast Cancer Research Institute programme at NUI Galway.

