Irish Melanoma Forum

14th Annual Scientific Meeting

Friday, 29 May 2026

PROGRAMME & ABSTRACTS

Irish Melanoma Forum

CONTENTS

A Message from Our Chairs

Dear Colleagues,

We are delighted to welcome you to the 14th Annual Irish Melanoma Forum, taking place at O'Reilly Hall, University College Dublin, on Friday May 29th, 2026. This annual gathering remains a cornerstone event for melanoma professionals across the island of Ireland and beyond, bringing together a vibrant community dedicated to improving outcomes for patients affected by melanoma.

As we reflect on the progress of the past year, we remain acutely aware of the ongoing pressures and complexities within our health systems. Since we last met, the Irish Government launched a public consultation on a potential ban on commercial sunbed use in Ireland, and we eagerly await the outcome. Yet, amidst these challenges, the steadfast dedication of our clinical, scientific, and advocacy communities continues to drive innovation and excellence in melanoma care and research.

This year's Forum features a dynamic and comprehensive programme, highlighting emerging science, including the role of melanin production in melanoma, evolving clinical strategies, and multidisciplinary approaches that shape best practice. With contributions from national and international leaders, we aim to foster critical dialogue, spark new collaborations, and inspire action across the melanoma care continuum.

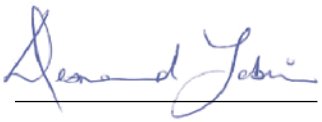
We are particularly proud of the strong spirit of collegiality that defines the *Irish Melanoma Forum*. Whether you are a returning participant or joining us for the first time, we encourage you to engage fully in the discussions, share your expertise, and help chart the next steps in melanoma prevention, diagnosis, management and basic research.

Thank you for being part of this collective effort. We look forward to an energising and impactful day together.

Welcome to the Irish Melanoma Forum 2026.

Warm regards,

Prof Shirley Potter
IMF Co-Chair



Prof Desmond J. Tobin
IMF Co-Chair

14th Annual Scientific Meeting ~ Friday, 29 May 2026

PROGRAMME

	MORNING PROGRAMME
08.30–09.00	Registration
09.00–09.05	Welcome: **Prof Deirdre** Murray, Director, NCRI
09.05–09.10	Introduction by Co-Chairs, Irish Melanoma Forum: **Prof Shirley Potter**, Consultant Plastic and Reconstructive Surgeon, St James's Hospital, Dublin **Prof Desmond Tobin**, Professor of Dermatological Science and Director Charles Institute of Dermatology, UCD
	SESSION 1: Melanoma Management Chairs: **Mr Fiachra Martin**, Consultant Plastic and Reconstructive Surgeon, Beaumont Hospital, Dublin **Prof Paul Donnellan**, Consultant Medical Oncologist, University Hospital Galway
09.10–09.55	Keynote Speaker: **Prof Alexander Van Akkooi**, Associate Professor of Melanoma Surgical Oncology, Melanoma Institute Australia ***Neo-adjuvant immunotherapy in Melanoma: the future of surgery and adjuvant therapy***
09.55–10.30	**Dr Sarah Lochrin**, Medical Oncologist, St Vincents University Hospital ***Neoadjuvant Therapy in Melanoma: Biology, Response, and Biomarker-driven Decision Making***
10.30–10.35	**Mr Jorge Reis**, Senior Pharmacist, Aseptic Unit, St Vincent's Private Hospital ***Immune-related endocrine adverse events with ipilimumab and nivolumab in melanoma patients – St Vincent's Private Hospital experience***
10.35–10.40	**Dr Clara Doran**, Core Surgical Trainee, St James's Hospital ***Incidence trends of cutaneous melanoma in young adults in Ireland: a 30-year population-based analysis***
10.40–11.15	***Coffee – Exhibitor Stands – General Posters and Moderated Posters – Session 1***
	Melanoma Nurse Meeting (11.20–13.00: Cedar and Cypress Room) **CTI – DSSG Meeting (10:30–11:30: Robing Room)**
	SESSION 2: Melanoma Management Chairs: **Prof Aurelie Fabre**, Consultant Pathologist, St Vincent's Hospital, Dublin **Dr Paula Calvert**, Consultant Medical Oncologist, University Hospital Waterford
11.15–11.50	Keynote Speaker: **Dr Patrick Ormond**, Consultant Dermatologist, St James's Hospital ***Non-Clinical interventions in Melanoma***
11.50–12.20	**Dr Jennifer Garioch**, Consultant Dermatologist, Norfolk and Norwich University Hospital ***TVEC and Melanoma in transit metastases***
12.20–12.50	**Dr Breeda Neville**, Consultant in Public Health Medicine, NCCP, and **Maria McEnery**, NCCP Cancer Prevention Officer ***Sunbeds in Ireland. Where do we stand?***
12.50–12.55	**Dr Melissa Crous**, Dermatology Registrar, University Hospital Limerick ***Diagnostic accuracy of teledermoscopy in melanoma detection: A comparative study***
12.55–13.00	**Dr Ao Lik Lee**, Dermatology Registrar, St James's Hospital ***To FNA or not? Diagnostic Accuracy and False Negative Rates in Malignant Melanoma: A Six-Year Retrospective Analysis***
13.00–14.45	***LUNCH – Exhibitor Stands – General Posters and Moderated Posters – Session 2***
13.30–14.15	**Industry Sponsored Symposium**

	AFTERNOON PROGRAMME
	SESSION 3: Basic Research Chairs: **Prof William Gallagher**, Professor of Cancer Biology, UCD **Prof Breandán Kennedy**, Professor of Pharmacology, UCD
14.45–15.40	Keynote Speaker: **Prof Caroline Le Poole**, Professor of Dermatology, Microbiology and Immunology, Northwestern University Chicago ***Pigmentation as a Melanoma vulnerability***
15.45–15.50	**Dr Paul D Thompson**, Senior Lecturer, School of Biomedical Sciences, Ulster University ***Oncogenic MAPK signalling regulated vitamin D receptor stability and function in BRAFV600E melanoma cells***
15.50–15.55	**Chowdhury Arif Jahangir**, Research assistant, School of Biomolecular and Biomedical Science ***Electrochemotherapy Drives Temporal and Systemic Immune Remodelling in Cutaneous Melanoma In-Transit Metastases: A Multiplex Spatial Analysis***
16.00	**Prizes and Concluding Remarks** **Prof Shirley Potter** and **Prof Desmond Tobin** Co-Chairs, Irish Melanoma Forum

Melanoma Nurse Meeting ~ Friday, 29 May 2026

PROGRAMME

	Meeting Chair: **Ms Kelsey O'Donnell**, Skin Cancer Clinical Nurse Specialist, Mater Misericordiae University Hospital
11.20–12.00	**Ms Jackie Hodgetts**, ANP in Melanoma ***The challenges of treating melanoma in an ever-changing landscape***
12.00–12.20	**Rhover James Robles**, CNS in Plastic & Reconstructive Surgery, Mater Misericordiae University Hospital ***Wound Complications and Management following Melanoma Excision***
12.20–12.35	**Cathleen Osborne** and **Bernie O'Loughlin**, NCCP ***Implementing the Treatment Summary and Care Plan for Melanoma Patients***
12.35–13.00	**General Discussion**
13.00–14.45	***LUNCH – Exhibitor Stands – Poster Session 2***

Speaker Profiles

Prof Deirdre Murray

Director

NCRI

Professor Deirdre Murray was appointed Director of the National Cancer Registry Ireland (NCRI) in June 2021 and Professor of Cancer Epidemiology in University College Cork (UCC). She chairs the UK and Ireland Association of Cancer Registries, is a Steering Group member of the European Network of Cancer Registries and is involved in a number of international research collaborations. She is a member of the Irish National Screening Advisory Committee and the National Research Ethics Committee. Deirdre previously worked in the National Cancer Control Programme (NCCP), and set up and led the NCCP's Cancer Intelligence function. Professor Deirdre Murray is a medical graduate of UCC and undertook her clinical training in Ireland and the UK and higher specialist training in Public Health Medicine in Ireland.

Prof Alexander Van Akkoooi

Associate Professor of Melanoma Surgical Oncology

Melanoma Institute Australia

Assoc. Prof Dr Alexander C.J. van Akkooi, MD, PhD, FRACS was born in Bridgeport, Connecticut, USA. He has both American and Dutch nationalities.

He studied medicine at the Erasmus University Medical Center, Rotterdam, the Netherlands, where he gained his MD title in 2008. During his surgical specialty training (2009-2014), he was awarded his PhD cum laude in 2011 on the thesis: "Sentinel Node Tumor Load Assessment in Melanoma: Dilemmas and Clinical Management".

From 2015 – 2021 he was a staff consultant surgical oncologist at the Netherlands Cancer Institute – Antoni van Leeuwenhoek (NKI) in Amsterdam, the Netherlands, where he chaired the Melanoma and Skin Cancer Centre. He is a past-Chairman of the EORTC (European Organization for Research and Treatment of Cancer) Melanoma Group.

He is a current Fellow to the Royal Australasian College of Surgeons (FRACS) within the Specialty of General Surgery within a defined scope of practice of Cutaneous Oncology.

He has served on multiple international committees, such as ASCO and ESMO. Prof Dr van Akkooi published over 275 peer reviewed papers (H index 50) in high impact journals (i.e. New England Journal of Medicine, Lancet, Lancet Oncol, Cell, Nature Med) and has presented at numerous (international) meetings. He joined the Melanoma Institute Australia (MIA) in 2022 as Chair of Melanoma Surgical Oncology.

As the global coordinating investigator, he has received a NHMRC (National Health and Medicine Research Council) grant of $3.2M AUD to perform the randomized phase 3 Multicenter Selective Lymphadenectomy Trial – 3 (MSLT-3); S2601/EORTC-2519 (NCT07049276).

He was awarded the 2025 SITC (Society of ImmunoTherapy for Cancer) Collaboration award as part of the INMC (International Neoadjuvant Melanoma Consortium) executive committee.

He is a clinical academic and his research work focuses on staging and treatment of melanoma, sentinel lymph node biopsy (SLNB), locoregional therapies, surgical de-escalation, adjuvant and neo adjuvant strategies. He is also a Merkel Cell Carcinoma (MCC) expert.

Dr Sarah Lochrin

Medical Oncologist

St Vincents University Hospital

Dr Sarah E. Lochrin is a Consultant Medical Oncologist at St Vincent's University Hospital, Dublin. A graduate of Trinity College Dublin, she completed specialist training in medical oncology through the Royal College of Physicians of Ireland, with a research fellowship at National Cancer Institute (NIH) and a clinical fellowship at Memorial Sloan Kettering Cancer Center, New York. Her work focuses on clinical and translational melanoma research, with a particular interest in treatment resistance, biomarkers and novel therapeutic strategies.

Dr Patrick Ormond

Consultant Dermatologist

St James's Hospital

Dr Patrick Ormond is a consultant Dermatologist and MOHS micrographic surgeon in St James's Hospital and Hermitage clinic.

Dr Jennifer Garioch

Consultant Dermatologist

Norfolk and Norwich University Hospital

I have been a Consultant Dermatologist at the Norfolk and Norwich University Hospital since 1996. I am currently the skin cancer lead for our Dermatology Department. My main clinical interests are Mohs surgery, dermatological surgery, melanoma including the management of in transit metastases and confocal microscopy. I set up our Mohs surgery service at NNUH in 2008; our confocal microscopy clinic in 2017; and our TVEC service February 2025.

I have been actively involved in clinical and epidemiological research relating to melanoma. I have also been involved in research looking at the efficacy of in vivo confocal microscopy in the diagnosis of basal cell carcinoma and mapping of lentigo maligna with the confocal microscope prior to slow Mohs surgery or treatment with imiquimod.

Dr Breeda Neville

Consultant in Public Health Medicine, NCCP

NCCP Cancer Prevention Officer

Dr Breeda Neville is a Consultant in Public Health Medicine at the HSE's National Cancer Control Programme. She is chair of the National Skin Cancer Prevention Plan 2023–2026 Implementation Group and was a member of the cross-departmental working group established by Jennifer Murnane O'Connor, Minister of State with responsibility for Public Health, Wellbeing and the National Drugs Strategy, to explore a ban on commercial sunbed use.

Prof Caroline Le Poole

Professor of Dermatology, Microbiology and Immunology

Northwestern University Chicago

My research has been primarily focused on the interphase of vitiligo and melanoma research, learning from one condition to better understand and treat the other. Much of the work in my lab revolves around T cell engineering and adoptive T cell transfer, as well as immune monitoring. I have collaborated with the PI, Dr Mehrotra, for many years to better understand T cell biology as it relates to vitiligo and melanoma, ultimately promoting strategies to enhance effector- or regulatory T cell activity in melanoma tumors or vitiligo skin to promote balanced immune responses in either condition. I further co-direct the SBDRC immune testing facility at Northwestern, that serves the cutaneous biology research community in the Chicagoland area and beyond. This facility offers state-of-the-art equipment to help monitor immune infiltration and activation in various experimental and clinical settings. Here, we can tease apart immune cell populations and characterize them by spatial transciptomics and complex *in situ* multispectral imaging, while also assessing immune activation using cytokine arrays, for example, in both *in vitro* and *in vivo* settings, in bulk and in single cell settings with spatial context. Overall, research in the Le Poole lab covers the areas of cutaneous biology and immunology/immuno-oncology using in vitro and in vivo models. I am excited to fully support the exciting studies proposed in the current application.

Jackie Hodgetts

ANP in Melanoma

The Christie Hospital, Manchester, UK

Jackie Hodgetts is a Nurse Clinician at The Christie Hospital in Manchester and has been working with melanoma patients since completing a master's degree in clinical Practice. She assesses and supports patients through treatment, as well as managing their toxicities.

Jackie has been involved in multiple trials of melanoma treatments, including the early studies of BRAF inhibitors and other targeted therapies and has extensive knowledge and expertise in melanoma treatments and the management of their side effects.

Jackie is a trustee of melanoma focus charity and leads a national helpline for melanoma patients, giving them access to specialist support and information. She has previously been a board member of BASCNS (British Association of Skin cancer nurse specialists). Jackie has published two articles on melanoma in *Cancer Nursing Practice* and *The Nursing Times*, and has jointly published a paper on understanding and managing immune-related adverse events.

Rhover James Robles

CNS in Plastic & Reconstructive Surgery

Mater Misericordiae University Hospital

I am a Plastics Clinical Nurse Specialist in the Mater Misericordiae University Hospital responsible for the Nurse- led Plastics Dressing Clinic which has an attendance of more than 2000 patients a year. My background includes Interventional Radiography Nurse Manager and Senior Staff nurse in a Vascular and Urology ward.

Cathleen Osbourne

NCCP

Cathleen Osborne works as an Assistant Director of Nursing at the National Cancer Control Programme. She works on a number of key projects to implement the survivorship recommendations from the National Cancer Strategy and to support and develop national cancer Nursing initiatives.

Contact details: cathleen.osborne@cancercontrol.ie / 087 202 7344

Her projects include:

- Cancer site specific treatment summary and care plan development
- Menopause and cancer information for patients and health care professionals
- Workforce planning for ambulatory cancer care units
- Stratified Self-Managed Follow Up pathway for patients with prostate cancer (following surgical treatment, radiation therapy and those on active surveillance)
- Stratified Self-Managed Follow Up pathway for patients with breast cancer
- The Life and Cancer- Enhancing Survivorship (LACES) workshop
- Patient Passports

Bernie O'Loughlin

Programme Manager for Cancer Survivorship

NCCP

Bernie O'Loughlin is the Programme Manager for Cancer Survivorship with the National Cancer Control Programme (NCCP). This role drives implementation of cancer survivorship including psychosocial supports and services nationally for cancer patients and their families. Bernie has an academic background in Science (Genetics). She has worked in clinical trials and as the manager of the Symptomatic Breast Services in the Mater Hospital. She is committed to improving patient care and believes this can be best achieved through collaboration and co-operation across sectors and disciplines. Bernie collaborates nationally with many stakeholders including patients, healthcare professionals and voluntary agencies to develop and improve the provision of survivorship care in Ireland.

Prof Breandán Kennedy

Full Professor, UCD School of Biomolecular and Biomedical Science

Director UCD Ocular Pharmacology & Genetics Group

University College Dublin (UCD)

Prof Breandán Kennedy is a leading pharmacologist and geneticist at University College Dublin (UCD) and a Fellow of the UCD Conway Institute. His research is at the forefront of ocular therapeutics, focused on unravelling the genetic mechanisms of human blindness and developing novel pharmacological treatments to restore vision or prevent cancer.

Prof Kennedy's work bridges the gap between fundamental genetics and drug discovery. His primary research goal is to identify genetic and pharmacological treatments for inherited retinal degenerations (IRDs), Age-Related Macular Degeneration (AMD), and uveal melanoma (eye cancer). His lab is internationally recognized for pioneering the use of zebrafish as a powerful in vivo model for human eye disease.

Maria McEnery

Cancer Prevention Officer

National Cancer Control Programme

Maria McEnery is a Cancer Prevention Officer with the HSE's National Cancer Control Programme, where she project manages and coordinates the implementation of the National Skin Cancer Prevention Plan 2023–2026. In this role, she works across all action areas of the plan – including public awareness, children and young people, outdoor workers, outdoor recreation, sunbed users, and monitoring and research – to reduce skin cancer incidence and strengthen SunSmart behaviours at a population level. Her leadership has contributed to the year on year growth of the SunSmart campaign, which was recognised with the Best Public Information Campaign award at the 2024 Awards for Excellence in Public Relations.

Beyond skin cancer prevention, Maria works more broadly in cancer risk reduction, developing and delivering national health promotion and wellbeing initiatives aligned with Sláintecare priorities.

Maria has over a decade of experience in Health Promotion and health project management, including several years working in Australia with Bowel Cancer Australia, where she managed national community engagement programmes, secured significant grant funding, and led award winning digital health initiatives.

Maria is also a co author on multiple peer reviewed publications in cancer prevention and public health, contributing to national research on melanoma costs, sun protection behaviours, and cancer screening participation among underserved groups.

Posters & Abstracts

Oral Presentation Abstracts

O-1 Immune-related endocrine adverse events with ipilimumab and nivolumab in melanoma patients – St Vincent's Private Hospital experience

Jorge Reis[1], Jane Martin[1], Nuno Silva[1], John Crown[2]

1. *Pharmacy Department, St Vincent's Private Hospital, Dublin, Ireland*
2. *Department of Medical Oncology, St Vincent's University Hospital, Dublin, Ireland*

O-2 Incidence trends of cutaneous melanoma in young adults in Ireland: a 30-year population-based analysis

Natasha Christodoulides[1,2,3], Clara Doran[1], Aline Brennan[4], Megan Lim[5], Deidre Murray[4], Shirley Potter[1,2,3]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
2. *Trinity St James's Cancer Institute*
3. *Royal College of Surgeons in Ireland (RCSI)*
4. *National Cancer Registry Ireland (NCRI)*
5. *School of Medicine, Trinity College Dublin*

O-3 Diagnostic accuracy of teledermoscopy in melanoma detection: A comparative study

Melissa Crous, Berbie Bryne, Evelyn Power, Aoife Walsh, Sinead Field

University Hospital Limerick

O-4 To FNA or not? Diagnostic Accuracy and False Negative Rates in Malignant Melanoma: A Six-Year Retrospective Analysis

P Cooper, A Lee, M Dempsey, P Ormond

Department of Dermatology, St James's Hospital, Dublin

O-5 Oncogenic MAPK signalling regulates vitamin D receptor stability and function in BRAFV600E melanoma cells

K Michelle Hau[1], E Patricia Rodriguez[1,2], Evelyn Murphy[2], Paul D Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

O-6 Electrochemotherapy Drives Temporal and Systemic Immune Remodelling in Cutaneous Melanoma In-Transit Metastases: A Multiplex Spatial Analysis

Chowdhury Arif Jahangir[1], Čemažar Maja[2], Klančar Gašper[2], Gašljević Gorana[2], B Perić[3], William M Gallagher[1], Arman Rahman[3]

1. *Cancer Biology and Therapeutics Laboratory, UCD School of Biomolecular and Biomedical Science, UCD Conway Institute, University College Dublin, Dublin, Ireland*
2. *Department of Pathology, Institute of Oncology Ljubljana, Ljubljana, Slovenia*
3. *Department of Surgical Oncology, Institute of Oncology Ljubljana, UCD School of Medicine, University College Dublin, Dublin, Ireland*

O-1

Immune-related endocrine adverse events with ipilimumab and nivolumab in melanoma patients – St Vincent's Private Hospital experience

Jorge Reis[1], Jane Martin[1], Nuno Silva[1], John Crown[2]

1. *Pharmacy Department, St Vincent's Private Hospital, Dublin, Ireland*
2. *Department of Medical Oncology, St Vincent's University Hospital, Dublin, Ireland*

Background:

Combination immunotherapy with ipilimumab and nivolumab significantly improves survival in advanced melanoma but is associated with high incidence of immune-related adverse events (irAEs), particularly endocrine toxicities. Real-world data on the frequency, timing and pattern of thyroid and adrenal dysfunction during combination therapy and subsequent nivolumab maintenance remain limited.

Methods:

Retrospective study of melanoma patients treated with ipilimumab and nivolumab between January 2020 and December 2025. Patients with prior immunotherapy or pre-existing thyroid dysfunction were excluded. Thyroid (TSH) and adrenal (cortisol) function were assessed. Outcomes were analysed by sex, age and treatment regimen [Ipilimumab 3mg/Kg +Nivolumab 1mg/Kg (IPI3/NIVO1) versus Ipilimumab 1mg/Kg +Nivolumab 3mg/Kg (IPI 1/NIVO 3)]

Results:

Eighty-four patients received combination therapy; 65 met inclusion criteria. Endocrine abnormalities occurred in 46 patients (73%). Isolated thyroid derangement occurred in 12.3%, isolated cortisol derangement in 26.2%, and combined thyroid and adrenal dysfunction in 32.3%. Women showed slightly higher rates of thyroid-only abnormalities, while men more frequently developed isolated cortisol derangement; combined dysfunction occurred at similar rates across genders. Endocrine toxicity varied by age, with the highest incidence in women <55 years (85.7%) and men aged 56–75 years (89.5%). Mean time to first thyroid abnormality was 79.4 days (range 14–292), while cortisol abnormalities emerged later (mean 131.2 days; range 18–793). Patients receiving IPI3+NIVO1 had a higher incidence of endocrine toxicity (84.2%) than those treated with IPI1+NIVO3 (57.1%).

Conclusion:

In our observational study, endocrine irAEs were common, frequently involved both thyroid and adrenal axes, and often occurred early for thyroid dysfunction and later for adrenal dysfunction. Higher toxicity was observed with the standard IPI3+NIVO1 regimen compared with the flipped IPI1+NIVO3 regimen. These findings highlight the need for structured and prolonged endocrine monitoring during induction and nivolumab maintenance.

O-2

Incidence trends of cutaneous melanoma in young adults in Ireland: a 30-year population-based analysis

Natasha Christodoulides[1,2,3], Clara Doran[1], Aline Brennan[4], Megan Lim[5], Deidre Murray[4], Shirley Potter[1,2,3]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
2. *Trinity St James's Cancer Institute*
3. *Royal College of Surgeons in Ireland (RCSI)*
4. *National Cancer Registry Ireland (NCRI)*
5. *School of Medicine, Trinity College Dublin*

Background:

Melanoma incidence continues to rise globally, with emerging evidence of distinct epidemiological patterns in younger populations. Young adults represent a unique cohort with differing risk exposures, behavioural factors and long-term survival implications, yet remain under-explored in population-level analysis. We examined temporal trends in melanoma incidence in Ireland, with a particular focus on young adult populations.

Methods:

Population-based melanoma incidence data from the National Cancer Registry of Ireland (NCRI) were analysed using European age-standardised rates (EASR) from 1994 to 2023. Temporal trends were assessed using Joinpoint regression to estimate annual percentage change (APC). Cases were stratified by sex, age group (15–34, 35–49, ≥50 years) and stage at diagnosis (early: stage I/II; late: stage III/IV).

Results:

Melanoma incidence increased overall, driven predominantly by rising rates in older adults and males. In contrast, young adults (15–34 years) demonstrated a distinct pattern: incidence was consistently higher in females than males (mean EASR 8.45 vs 4.41 per 100,000), with a modest but significant increase in females (APC 1.65%, $p<0.05$) and overall (APC 1.05%, $p<0.05$), while rates in males remained stable.

Across all age groups, early-stage melanoma accounted for the majority of diagnoses and increased over time (26.4 to 31.1 per 100,000, 2014–2023). Late-stage incidence remained comparatively low and stable (3.7–5.2 per 100,000), but was consistently higher in males.

A strong age gradient persisted, with individuals ≥50 years demonstrating the highest incidence of both early- and late-stage disease (early-stage up to 56.4; late-stage up to 9.6 per 100,000). The 35–49 group showed intermediate rates, while young adults had low absolute incidence, with stable early-stage rates (~5–7 per 100,000) and minimal late-stage disease (<1 per 100,000).

Conclusion:

Melanoma incidence in Ireland is rising, driven by increasing detection of early-stage disease, reflecting both a true increase in incidence and enhanced diagnostic awareness. However, marked age- and sex-specific disparities persist. Young adults display a distinct epidemiological pattern, with higher incidence in females and stable rates in males, consistent with differing behavioural risk exposures such as intermittent ultraviolet exposure and tanning practices. In contrast, advanced disease remains disproportionately concentrated in older males.

Although absolute incidence in young adults is low, the long-term survivorship burden is significant and growing. These findings identify a critical and potentially modifiable window for intervention. Targeted, age- and sex-specific prevention and early detection strategies are urgently required to alter the trajectory of melanoma incidence. This study provides the first long-term population-based characterisation of melanoma trends in young adults in Ireland and establishes a clear evidence base to inform national policy and prevention efforts.

O-3

Diagnostic accuracy of teledermoscopy in melanoma detection: A comparative study

Melissa Crous, Berbie Bryne, Evelyn power, Aoife Walsh, Sinead Field

University Hospital Limerick

Introduction:

Skin cancer rates including melanoma are increasing nationally. The teledermoscopy service is a targeted skin cancer triage service which aims to enhance appropriate utilisation of our limited face to face consultations by identifying patients with lesion that are time sensitive.

Aim:

Evaluate concordance of clinic consultant principle diagnosis and teledermoscopy consultant diagnosis.

Methods:

A sensitivity analysis investigated concordance of teledermoscopy and clinical consultant assessment of 110 lesions categorised as benign, suspicious, pre-malignant and malignant using a Teledermoscopy software Programme. In total, 109 participants took part in the study of which the 56% were female and the average age was 53.6 (SD =17.5). The most common location of the lesion was the trunk (n=44, 40%) and more than half of patient (n =62, 56%) had melanocytic lesion of which 82% was benign.

Results:

The Kappa value between the clinic consultant and the teledermoscopy consultant was moderate (K=060, 95% CI 0.42–0.79). Both classified 75%(n=82) as benign, 3.66%(n=4) as suspicious and 8.25%(n=9) as malignant yielding a 87% agreement. The sensitivity of the data was 73.68% and the specificity 91.11%. The contingency table demonstrated high concordance between the two extremes of benign and malignant lesion. There was no misclassification of malignant lesions. Discrepancy was seen in the suspicious category where biopsies is often done for diagnostic uncertainty.

Conclusion:

The comparable results between teledermoscopy and in person assessment, supports its reliable modality and a promising direction for future dermatological care.

O-4

To FNA or not? Diagnostic Accuracy and False Negative Rates in Malignant Melanoma: A Six-Year Retrospective Analysis

P Cooper, A Lee, M Dempsey, P Ormond

Department of Dermatology, St James's Hospital, Dublin

Background:

Fine-needle aspiration (FNA) is a common first-line diagnostic tool for suspicious lymphadenopathy in melanoma. However, its reliability in "ruling out" malignancy remains a point of clinical debate. This study evaluates the diagnostic accuracy of FNA and the clinical consequences of false-negative results within an Irish tertiary referral centre.

Methods:

A retrospective review of 67 patients with suspected metastatic malignant melanoma who underwent FNA was conducted over a six-year period (March 2020 – February 2026). Initial FNA results were compared against subsequent reference standards, including core needle biopsy (CNB), sentinel lymph node biopsy (SLNB), or repeat FNA sampling. Statistical analysis determined sensitivity, specificity, and predictive values. Clinical impact was assessed by measuring diagnostic delays and identifying changes in AJCC staging.

Results:

Of the 67 patients, 56.7% (n = 38) were True Positives and 26.9% (n = 18) were True Negatives. 4.5% (n = 3) were inconclusive: (n=1) suspicious and (n = 2) non-diagnostic. 11.9% (n = 8) were identified as False Negatives (FN). Statistical analysis revealed a Sensitivity of 82.6%, a Positive Predictive Value (PPV) of 100%, and a Negative Predictive Value (NPV) of 69.2%. In the FN cohort, the median delay to definitive diagnosis of metastatic disease was 37 days (range 0–108 days). These diagnostic delays resulted in documented disease upstaging in (n = 3) patients (37.5% of the FN cohort), necessitating a transition from localised surgical management to systemic immunotherapy.

Conclusions:

While a positive FNA is 100% predictive of melanoma, an NPV of 69.2% indicates that nearly one in three non-positive results (negative, suspicious, or non-diagnostic) in this cohort harboured metastatic disease which led to significant clinical delays in 7.4% (n = 5) of patients. In our experience, FNA should be utilised strictly as a "rule-in" tool. Any result other than "Malignant" in the presence of clinical suspicion should trigger immediate core needle biopsy to prevent staging delays and optimise therapeutic outcomes.

O-5

Oncogenic MAPK signalling regulates vitamin D receptor stability and function in BRAFV600E melanoma cells

K Michelle Hau[1], E Patricia Rodriguez[1,2], Evelyn Murphy[2], Paul D Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

Aim/Background:

Vitamin D receptor (VDR) signalling has been widely associated with anti-tumour effects in melanoma; however, responses to vitamin D in melanoma cells are variable and poorly understood. We investigated whether oncogenic BRAFV600E/MAPK signalling regulates VDR expression and function in melanoma cells.

Methods:

BRAFV600E melanoma cell lines (A375, SK-MEL-28) were treated with vemurafenib or MEK inhibitor PD98059. VDR mRNA and protein expression were assessed by qPCR and immunoblotting. VDR transcriptional activity was evaluated using target gene expression and promoter-reporter assays. Protein stability was examined for endogenous and exogenous VDR, including effects of proteasome inhibition. VDR ubiquitination was assessed by immunoprecipitation and immunoblotting

Results:

MAPK inhibition reduced VDR mRNA and protein expression. Vemurafenib suppressed ligand-induced CYP24A1 expression and VDR transcriptional activity. Exogenous VDR was also reduced, indicating post-transcriptional regulation. Proteasome inhibition rescued VDR levels, while immunoprecipitation confirmed increased VDR ubiquitination following MAPK inhibition. Melanoma cells displayed detectable basal CYP24A1 expression in the absence of ligand, suggesting altered VDR pathway activity and enhanced vitamin D metabolism.

Conclusion:

BRAFV600E/MAPK signalling maintains VDR protein stability and transcriptional activity in melanoma cells. MAPK inhibition promotes VDR ubiquitination and proteasomal degradation. These findings indicate that VDR signalling is retained but regulated by oncogenic signalling, potentially contributing to constrained or altered vitamin D responses in melanoma

O-6

Electrochemotherapy Drives Temporal and Systemic Immune Remodelling in Cutaneous Melanoma In-Transit Metastases: A Multiplex Spatial Analysis

Chowdhury Arif Jahangir[1], Čemažar Maja[2], Klančar Gašper[2], Gašljević Gorana[2], B Perić[3], William M Gallagher[1], Arman Rahman[3]

1. *Cancer Biology and Therapeutics Laboratory, UCD School of Biomolecular and Biomedical Science, UCD Conway Institute, University College Dublin, Dublin, Ireland*
2. *Department of Pathology, Institute of Oncology Ljubljana, Ljubljana, Slovenia*
3. *Department of Surgical Oncology, Institute of Oncology Ljubljana, UCD School of Medicine, University College Dublin, Dublin, Ireland*

Background:

Electrochemotherapy (ECT) is an effective local treatment for cutaneous melanoma (CM) in-transit metastases; however, its immunomodulatory effects remain incompletely understood. We examined time-dependent and spatial changes in the tumour microenvironment following ECT using multiplex immunohistochemistry (mIHC).

Methods:

A tissue microarray (TMA) was constructed from three CM patients undergoing different regimens: (i) ECT with intravenous (I.V.) bleomycin, (ii) nivolumab followed by ECT with intravenous (i.v.) bleomycin, and (iii) ECT with intratumoral cisplatin. Cores were collected at baseline (untreated), early post-ECT (Day 2–3, treated), and late timepoints (Day 9–10, treated and untreated lesions). A five-marker mIHC panel (CD8, FOXP3, PD-L1, SOX10, DAPI) was used to quantify infiltration of key immune populations and perform tumour-guided spatial analysis.

Results:

ECT induced a time-dependent increase in $CD8^+$ T cell infiltration, with the highest in late-treated lesions. $FOXP3^+$ cell density remained stable, increasing the CD8/FOXP3 ratio and indicating an effector-dominant immune state. Spatial analysis showed reduced distance between $CD8^+$ T cells and tumour cells, reflecting enhanced infiltration. At late time points, treated lesions showed higher $CD8^+$ density and closer tumour proximity than untreated lesions, confirming a local ECT effect. Untreated lesions also showed increased infiltration and partial spatial reorganisation, suggesting systemic effects. PD-$L1^+$ tumour cell density was higher in immune-active tumours, consistent with adaptive resistance. The nivolumab-pretreated patient showed higher baseline immune activity and a distinct response pattern.

Conclusion:

ECT promotes coordinated quantitative and spatial immune remodelling in CM, with increased cytotoxic infiltration and tumour engagement, and evidence of local and potential systemic effects. These findings suggest a possible rationale for integrating ECT with immune checkpoint blockade and highlight its potential role as an immune-priming strategy in CM treatment, warranting further investigation.

Moderated Presentation Abstracts

M-1 Cannabinoid receptor 2 inverse agonisms as a novel therapeutic strategy against metastatic uveal melanoma

Camilla Maria Fontana[1,2], Jessica Spratt[1], Marianna Schwarz[1,3], Niamh Duggan[1,2], Breandán Kennedy[1,2]

1. *School of Biomolecular and Biomedical Science, University College Dublin*
2. *Conway Institute for Biomolecular and Biomedical Research, University College Dublin*
3. *Amsterdam University College, Amsterdam, Netherlands*

M-2 Proteomic Identification of a Metastasis-Associated Protein Signature in Large Extracellular Vesicles Derived from Human Metastatic Melanoma Cells

Xuemei Duan[1], Kieran Wynne[1,3,5], Shirley Potter[2,3,4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology, School of Medicine, University College Dublin, Dublin, Ireland*
2. *School of Medicine, University College Dublin, Dublin, Ireland*
3. *The Conway Institute, University College Dublin, Ireland*
4. *St James's Hospital, Dublin, Ireland*
5. *Systems Biology Ireland, University College Dublin, Belfield, Dublin 4, Ireland*

M-3 Practice Variation in Melanocytic Tumours of Uncertain Malignant Potential (MELTUMP): Survey Data

N Twomey, F Sexton, B Nolan, L Kearney, S O'Shea

South Infirmary Victoria University Hospital, Cork

M-4 NGS Based Molecular Characterisation of Melanoma in an Irish Tertiary Referral Centre

Hayes A[1], Crosbie R[1], Werner R[1], Heffron C[1,2]

1. *Department of Histopathology, Cork University Hospital, Cork, Ireland*
2. *School of Medicine, University College Cork, Cork, Ireland*

M-5 Sentinel lymph node biopsy in pT1b melanoma: Time to align practice with NICE 2022 guidelines?

Lee, YX[1], Lally, A[2], Woods J[1], Dolan R[1], O'Neill T[1]

1. *Plastics and Reconstructive Surgery Department, St Vincent's Hospital, Dublin*
2. *Dermatology Department, St Vincent's Hospital, Dublin*

M-6 St Patrick's Day as a Culturally Resonant and Climatically Valid Trigger for Promotion of SunSmart Behaviours in Ireland

O'Connell G[1], McEnery M[2], Neville B[2], Moloney FJ[1,3]

1. *Department of Dermatology, Mater Misericordiae University Hospital, Dublin*
2. *HSE National Cancer Control Programme, Dublin*
3. *School of Medicine, University College Dublin*

M-1

Cannabinoid receptor 2 inverse agonisms as a novel therapeutic strategy against metastatic uveal melanoma

Camilla Maria Fontana[1,2], Jessica Spratt[1], Marianna Schwarz[1,3], Niamh Duggan[1,2], Breandán Kennedy[1,2]

1. *School of Biomolecular and Biomedical Science, University College Dublin*
2. *Conway Institute for Biomolecular and Biomedical Research, University College Dublin*
3. *Amsterdam University College, Amsterdam, Netherlands*

Background:

Uveal melanoma (UM) is the most common primary intraocular malignancy, with Ireland reporting the highest incidence worldwide. Despite excellent local control, about 50% of patients develop metastases within 5–7 years of diagnosis, resulting in a median survival of only 13 months. Available systemic therapies have limited efficacy, as both chemotherapy and immune checkpoint inhibitors show poor response rates, and current immunotherapy options extend median survival only up to 22 months.

Cannabinoid receptors demonstrate a complex role in cancer biology. While their expression correlates with improved survival in some cancers (e.g., lung), overexpression is associated with poor prognosis in others (e.g., prostate, pancreatic, colorectal, and breast). This study investigates the role of cannabinoid receptors in UM and explores the therapeutic potential of their modulation in metastatic disease.

Methods:

The bioactivity of CB1 and CB2 agonists and inverse agonists was assessed using long-term proliferation assays in primary (Mel270) and metastatic (OMM2.5, MM28) UM cell lines via the Incucyte Live Cell Analysis System. CB2 inverse agonist toxicity was evaluated in zebrafish embryos by assessing vitality, development, and morphology.

Results:

Targeting CB1 did not alter UM proliferation nor viability, whereas CB2 inverse agonism significantly reduced cell proliferation. Among the compounds tested, SR144528 (10 μM) markedly inhibited proliferation without cytotoxicity, GP1a displayed moderate inhibition and toxicity at higher concentrations (20 μM), and JTE-907 showed limited efficacy. In zebrafish assays, SR144528 caused no developmental abnormalities, while GP1a and JTE-907 induced toxicity and developmental delays, respectively.

Conclusion:

CB2 inverse agonism represents a promising therapeutic approach for metastatic UM. SR144528 demonstrated potent antiproliferative effects across multiple UM cell lines and was well tolerated in zebrafish embryos, supporting further preclinical evaluation in animal models.

M-2

Proteomic Identification of a Metastasis-Associated Protein Signature in Large Extracellular Vesicles Derived from Human Metastatic Melanoma Cells

Xuemei Duan[1], Kieran Wynne[1,3,5], Shirley Potter[2,3,4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology, School of Medicine, University College Dublin, Dublin, Ireland*
2. *School of Medicine, University College Dublin, Dublin, Ireland*
3. *The Conway Institute, University College Dublin, Ireland*
4. *St James's Hospital, Dublin, Ireland*
5. *Systems Biology Ireland, University College Dublin, Belfield, Dublin 4, Ireland*

Background:

Extracellular vesicles (EVs), comprising proteins, lipids, and nucleic acids, are key mediators of intercellular communication across tissues and play important roles in melanoma progression. Based on size, EVs are broadly classified into small EVs (sEVs, <200 nm) and large EVs (lEVs, >200 nm). However, the specific contributions of EV subpopulations to melanoma metastasis remain incompletely understood. In this study, we isolated and characterised EV subtypes from the melanoma cell line FM55 to investigate their roles in tumour progression.

Methods:

EVs were isolated by ultracentrifugation of conditioned medium of melanoma cells derived from a primary tumor (designated FM55-P) and from a tumor metastasis (designated FM55-M) of the same melanoma patient. Vesicles were further separated into sEVs and lEVs. Protein profiles were analysed by SDS-PAGE followed by Ponceau S staining. Differentially-expressed protein bands were excised and subjected to liquid chromatography–mass spectrometry (LC–MS) for constituent protein identification.

Results:

Ponceau S staining revealed a prominent and distinct 30 kDA-protein band that was detected only in the lEV fraction of FM55-M cells. LC–MS analysis identified multiple proteins, including the classically-associated proteins CD63, CD9, C81, but also high differentially expressed lEV proteins including ATP5FC1, PHB1, HSD17B13, SLC25A5 and MLEC. These proteins are associated with mitochondrial metabolism, lipid metabolic processes, chaperone-mediated protein folding, and vesicle-associated intracellular trafficking—processes closely linked to tumour progression and metastasis. Notably, many identified proteins are involved in intracellular transport and membrane dynamics, suggesting that lEVs may carry functionally relevant cargo that contributes to metastatic behaviour. This enrichment was not observed in FM55-P-derived EVs, indicating a metastasis-specific alteration in EV composition.

Conclusion:

This study identifies a previously-unrecognised protein signature enriched in large EVs derived from metastatic melanoma cells, suggesting a potential role for lEVs in promoting melanoma metastasis. These results provide new insights into EV heterogeneity in human melanoma and lay the foundation for future studies exploring metastasis-associated EV biomarkers and therapeutic targets.

M-3

Practice Variation in Melanocytic Tumours of Uncertain Malignant Potential (MELTUMP): Survey Data

N Twomey, F Sexton, B Nolan, L Kearney, S O'Shea

South Infirmary Victoria University Hospital, Cork

Aim/Background:

MELTUMP describes melanocytic lesions with atypical but non-definitive malignant features, leaving biological potential uncertain. Evidence is limited and management varies. We aimed to characterise current clinical practice in Ireland and the UK.

Methods:

An online cross-sectional survey was distributed to dermatologists and plastic surgeons via professional societies. Items addressed investigation triggers, excision margins, sentinel lymph node biopsy (SLNB), follow-up, ancillary testing, multidisciplinary (MDT) discussion, and guideline use. Descriptive statistics were reported; inter-specialty comparisons used χ^2 or Fisher's exact test.

Results:

Thirty-six clinicians responded (20 dermatology, 15 plastic surgery, 1 general surgery); 89% were consultants. Pathologist opinion was most influential (94%), followed by thickness (56%), ulceration (53%), mitotic activity (50%), and age (47%); 76% considered adolescence highest risk. Wide local excision was recommended by 97%, with preferred margins of 5 mm (50%) or 10 mm (39%), without specialty difference (p=0.62). SLNB was generally reserved for melanoma reclassification (67%); 17% would consider it for adverse features (p=0.47). Follow-up varied: melanoma-equivalent regimens (44%), fixed five years (22%), or discharge post-WLE (17%). Ancillary diagnostics were widely available (86%), most often PRAME (69%) and BAP1 (58%), with no specialty variation (p=1.00). MDT discussion was universal (92%). Only 11% used guidelines, though 72% felt consensus recommendations would improve care (p=0.70).

Conclusion:

This first UK-Ireland survey demonstrates substantial variation in MELTUMP management, particularly regarding margins, SLNB, and follow-up, despite near-universal MDT access and ancillary testing. Minimal guideline use contrasts with strong demand for consensus, highlighting the need for clear recommendations to standardise practice

M-4

NGS Based Molecular Characterisation of Melanoma in an Irish Tertiary Referral Centre

Hayes A[1], Crosbie R[1], Werner R[1], Heffron C[1,2]

1. *Department of Histopathology, Cork University Hospital, Cork, Ireland*
2. *School of Medicine, University College Cork, Cork, Ireland*

Aim/Background:

Next-generation sequencing (NGS) has expanded the molecular characterisation of melanoma, identifying key driver mutations with prognostic and therapeutic relevance while also uncovering variants of uncertain significance (VUS). Despite this, many centres continue to rely on histopathology and limited single-gene testing, underutilising NGS as a broader prognostic tool. This study aimed to characterise the NGS profile of melanoma cases in our centre from 2023 to 2025 and assess the frequency and patterns of genomic alterations.

Methods:

All melanoma cases undergoing NGS over a 3-year period were reviewed. DNA from formalin fixed paraffin embedded (FFPE) tissue was analysed using the 50-gene Oncomine Precision Assay on the Ion Torrent Genexus platform. Variant interpretation followed CAP/AMP/ASCO and NCCN guidelines, with actionable Tier I variants reported in line with NCCP requirements.

Results:

A total of 112 cases were sequenced: 57 showed detectable variants, 54 had no variants, and 1 was insufficient. Multiple alterations were identified in 42 cases. The most frequent mutations were NRAS (37%), TP53 (17%), CDKN2A (11%), BRAF (12%), MAP2K1 (4%), PTEN (4%), PIK3CA (4%), CTNNB1 (4%), and ERBB4 (4%). Percentages reflect mutation frequency relative to the total number of sequenced cases.

Co-mutation analysis showed BRAF co-mutated in 7/13 cases, most frequently with CDKN2A (4/7) and MAP2K1 (2/7). NRAS was co-mutated in 18/41 cases, most frequently with TP53 (7/18), CDKN2A (5/18) and CTNNB1 (3/18). These patterns highlight substantial molecular heterogeneity. VUS identified have not yet undergone orthogonal validation.

Conclusion:

The mutation spectrum aligns with recognised melanoma subtypes and carries prognostic significance. NRAS and PTEN mutations are associated with poorer outcomes, while CTNNB1 activation is linked to reduced immunotherapy response. The high rate of co-mutations supports the value of NGS in refining prognostic assessment and guiding personalised management.

M-5

Sentinel lymph node biopsy in pT1b melanoma: Time to align practice with NICE 2022 guidelines?

Lee, YX[1], Lally, A[2], Woods J[1], Dolan R[1], O'Neill T[1]

1. *Plastics and Reconstructive Surgery Department, St Vincent's Hospital, Dublin*
2. *Dermatology Department, St Vincent's Hospital, Dublin*

Background:

Sentinel lymph node biopsy (SLNB) provides staging information in melanoma but remains controversial in pT1b disease due to low positivity rates and procedure-related morbidity. We evaluated whether adopting NICE 2022 guidelines (ulceration, lymphovascular invasion, or mitotic index ≥2/mm²) would optimise SLNB utilisation compared with current nomogram-based practice.

Methods:

A retrospective analysis of 81 patients with pT1b melanoma (2020–2025) was performed. SLNB utilisation in current practice, guided by Memorial Sloan Kettering (MSKCC) and Melanoma Institute Australia (MIA) nomograms, was compared with projected utilisation based on NICE criteria. Descriptive statistics, concordance and correlation analysis, and group comparisons were performed, with p-values reported.

Results:

Current nomogram-based practice resulted in 67.9% SLNB utilisation, with no positive nodes identified (0/55). MSKCC and MIA demonstrated moderate correlation ($r=0.62$, $p<0.001$) but limited exact agreement (41%). NICE criteria identified 18 patients (22%) who had significantly higher predicted risk than non-eligible patients (MSKCC: 5.22±3.10 vs 3.47±1.63, $p=0.002$; MIA: 9.17±4.60 vs 6.75±3.36, $p=0.017$). Adoption of NICE criteria would reduce SLNB utilisation from 67.9% to 22% (~46% reduction; 37 procedures avoided). Recurrence-free survival was 96.3%, with no clear difference between MIA and NICE strategies. MSKCC did not capture any recurrence.

Conclusion:

Current practice demonstrates high SLNB utilisation with low diagnostic yield in pT1b melanoma. In this Irish cohort, international nomograms may overestimate SLN positivity. NICE criteria may enable selective SLNB, improving efficiency and resource utilisation. These findings support guideline-led selection complemented by nomograms, while recognising limitations of a small sample size and the need for multicentre validation.

M-6

St Patrick's Day as a Culturally Resonant and Climatically Valid Trigger for Promotion of SunSmart Behaviours in Ireland

O'Connell G[1], McEnery M[2], Neville B[2], Moloney FJ[1,3]

1. Department of Dermatology, Mater Misericordiae University Hospital, Dublin
2. HSE National Cancer Control Programme, Dublin
3. School of Medicine, University College Dublin

Aim/Background:

The Ultraviolet Index (UVI) was developed to warn the public about solar hazards, and to serve as a tool to encourage sun safe behaviours. A UVI >/=3.0 is promoted as the trigger at which the Irish public should carry out SunSmart Behaviours (Slip, Slop, Slap, Slide, Seek). Using real world data collected in Ireland over the past 25 years, we investigated 17th of March as an appropriate date to highlight the promotion of SunSmart Behaviours in Ireland.

Methods:

Real-world UVI data collected by Met Eireann at Valentia weather station over the past 25 years was collated using Excel. Maximum UVI daily values (MaxUVI) were recorded. Mean, median and maximum values for the MaxUVI were calculated for the month of March. Subgroup analysis of the two weeks preceding and following March 17th was carried out to determine the prevalence of days in which the MaxUVI was ≥3.0 (MaxUVI≥3).Finally, linear regression was used to analyse trends in MaxUVI and MaxUVI> for the month of March over the past 25 years.

Results:

We determined that 17th of March aligned closely with the beginning of days in which the MaxUVI≥3 is prevalent. Over the past 25 years there were only 5 days in which the MaxUVI≥3 preceding March 17th. This is in comparison 83 occurrences in two weeks following March 17th. In addition, both mean and maximum recorded UVI was significantly higher following 17th of March (table 1). Linear regression did not identify any trend of escalating MaxUVI or MaxUVI>3 in the month of March over the past 25 years.

	March	2–16 March	17–30 March
Sum of days from 2000–2024 with MaxUVI≥3	95	5	83
Mean no. of days per year with MaxUVI≥3	3.653846	0.153846	3.461538
Mean UVI	2.076538	1.6379	2.377646
Maximum recorded UVI	4.816	3.316	4.816

Conclusion:

17th of March (St Patrick's day) is an appropriate date to highlight the promotion of SunSmart Behaviours in Ireland . It is exceptionally rare for MaxUVI≥3 before this date, and frequent for MaxUVI≥3following this date. Our modelling has identified MaxUVI or MaxUVI≥3in March is not increasing over the past 25 years. Finally, 17th of March is culturally resonant, and thus potentially a memorable date on which to commence promotion of sun-protective behaviours.

Poster Presentation Abstracts

Clinical Research

P-1 **Syringotropic spread in cutaneous melanoma: a case series of four patients with deep eccrine involvement**

Brennan C[1], Fabre A[2]

1. *Histopathology SHO, St Vincent's University Hospital*
2. *Clinical Professor at UCD School of Medicine and Consultant Histopathologist, St Vincent's University Hospital*

P-2 **Occult ring melanoma of the ciliary body presenting as unilateral glaucoma with heterochromia**

Budweg X, Bourke L, Horgan N, Murtagh P

The Royal Victoria Eye & Ear, Ocular Oncology Service

P-3 **Melanoma and skin cancer awareness and protection among the farming community in Ireland**

Linda Chanders

Trinity College, Dublin

P-4 **Cost-effectiveness of a CP-GEP (Merlin)–guided strategy for sentinel lymph node biopsy in cutaneous melanoma: an Irish population-based analysis**

Doran C[1], Christodoulides N[1,2,3], McMenamin M[4], Beausang E[1], Dempsey M[1], Healy C[1], Ormond P[5], Moran B[5], Barry R[5], Kelleher F[6], O'Hanlon Brown C[6], Arentsten T[7], Potter S[1,2,3]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin, Ireland*
2. *Trinity St James's Cancer Institute, Dublin, Ireland*
3. *Royal College of Surgeons in Ireland, Dublin, Ireland*
4. *Department of Histopathology, St James's Hospital, Dublin, Ireland*
5. *Department of Dermatology, St James's Hospital, Dublin, Ireland*
6. *Department of Medical Oncology, St James's Hospital, Dublin, Ireland*
7. *SkylineDx, Amsterdam, Netherlands*

P-5 **Local recurrence and metastases with melanoma in situ – time to reconsider the role of wide local excision?**

C Drumm[1], L Holcroft[1], R Kelly[2], R Brennan[1], M Roche[1,3], C Feighery[1], N Kearney[1]

1. *Our Lady of Lourdes Hospital Drogheda*
2. *Mater Misericordiae University Hospital*
3. *Beaumont Hospital*

P-6 **Trends in melanoma incidence, stage at diagnosis, and survival by socioeconomic deprivation in Ireland: a 20-year review**

YiXuan Goh[1], Laura Finneran[2], Theresa Redaniel[2], Yasmine Safta[1], Olwyn Conlon[1], Maeve Herlihy[1], Aoife Granahan[1], Síona Ní Raghallaigh[1]

1. *Department of Dermatology, Beaumont Hospital, Dublin 9*
2. *National Cancer Registry Ireland, Cork*

P-7 **The Impact of the COVID-19 Pandemic on Recurrent Melanoma and Newly Presenting Metastatic Melanoma**

Cristina Grechin[1], Nicholas Stefanovic[1], Rory Patterson[2], Tamer Guirguis[2], Rory O'Sullivan-Sexton[3], Muireann Roche[1]

1. Dermatology Department, Beaumont Hospital, Dublin, Ireland
2. Plastic Surgery Department, Beaumont Hospital, Dublin, Ireland
3. Trinity College Dublin, Ireland

P-8 **NGSBased Molecular Characterisation of Melanoma in an Irish Tertiary Referral Centre**

Hayes A[1], Crosbie R[1], Werner R[1], Heffron C[1,2]

1. Department of Histopathology, Cork University Hospital, Cork, Ireland
2. School of Medicine, University College Cork, Cork, Ireland

P-9 **Untreated malignant melanoma in an ageing immune system: a case report**

Claudine Howard-James[1], Kelsey O'Donnell[1], Fergal J Moloney[1,2]

1. Department of Dermatology, Mater Misericordiae University Hospital, Dublin 7
2. School of Medicine, University College Dublin, Dublin 4

P-10 **The Impact of Artificial Intelligence on Clinical Decision-Making in Modern Oncology**

Idris AF, Lim J, Thistlethwaite F

Advanced Immunotherapy and Cell Therapy (AICT), The Christie NHS Foundation Trust, Manchester, UK

P-11 **When Melanoma Surprises – An Uncommon Case in a Young Patient**

Irwin J, Maviva N, Podmore P

Altnagelvin Hospital, Western Health and Social Care Trust

P-12 **An Audit of Adherence to Post-Treatment Ultrasound Surveillance Guidelines in Cutaneous Melanoma**

A Kenny, M Murphy, L Wrafter, J Kelly

Plastic Surgery Department, Galway University Hospital

P-13 **Sentinel lymph node biopsy in pT1b melanoma: Time to align practice with NICE 2022 guidelines?**

Lee YX[1], Lally A[2], Woods J[1], Dolan R[1], O'Neill T[1]

1. Plastics & Reconstructive Surgery Department, St Vincent's Hospital, Dublin
2. Dermatology Department, St Vincent's Hospital, Dublin

P-14 **Wearable UV sensors for the prevention of skin cancer: A systematic review**

Katie Nolan, Kenneth Joyce

Department of Plastic & Reconstructive Surgery, Galway University Hospital, Ireland

P-15 **St Patrick's Day as a Culturally Resonant and Climatically Valid Trigger for Promotion of SunSmart Behaviours in Ireland**

O'Connell G[1], McEnery M[2], Neville B[2], Moloney FJ[1,3]

1. Department of Dermatology, Mater Misericordiae University Hospital, Dublin
2. HSE National Cancer Control Programme, Dublin
3. School of Medicine, University College Dublin

P-16 **Real-World Comparison of Dabrafenib–Trametinib versus Encorafenib–Binimetinib in BRAF-Mutant Advanced Melanoma in Northern Ireland**

O'Neill, C

Belfast Health And Social Care Trust

P-17 **Practice variation in melanocytic tumors of uncertain malignant potential (MELTUMP): Survey data**

N Twomey, F Sexton, B Nolan, L Kearney, S O'Shea

South Infirmary Victoria University Hospital, Cork

P-18 **Incidence trends of cutaneous melanoma in young adults in Ireland: a 30-year population-based analysis**

Natasha Christodoulides[1,2,3], Clara Doran[1], Aline Brennan[4], Megan Lim[5], Deidre Murray[4], Shirley Potter[1,2,3]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
2. *Trinity St James's Cancer Institute*
3. *Royal College of Surgeons in Ireland (RCSI)*
4. *National Cancer Registry Ireland (NCRI)*
5. *School of Medicine, Trinity College Dublin*

P-19 **To FNA or not? Diagnostic Accuracy and False Negative Rates in Malignant Melanoma: A Six-Year Retrospective Analysis**

P Cooper, A Lee, M Dempsey, P Ormond

Department of Dermatology, St James's Hospital, Dublin

P-20 **Diagnostic accuracy of teledermoscopy in melanoma detection: A comparative study**

Melissa Crous, Berbie Bryne, Evelyn power, Aoife Walsh, Sinead Field

University Hospital Limerick

P-21 **The use of Electrochemotherapy as an adjunct for cutaneous metastases of melanoma in the era of immunotherapy**

G Fenn[1], L O'Birchenough[1], K Russell-Ryan[2], A J P Clover[1]

1. *Plastic and Reconstructive Surgery Department, Cork University Hospital, Wilton, Cork*
2. *Mirai Medical, Oranmore, Galway*

P-22 **Can we get the diagnosis right with written clinical information alone? Diagnostic concordance from referral letter to face-to-face dermatology review in a pigmented lesion clinic**

C Keegan, G Callaghan, M Roche, C Feighery, N Kearney

Our Lady of Lourdes Hospital, Drogheda

P-23 **Oligometastatic recurrent melanoma in a renal transplant patient on immune-suppressive therapy – the balance for graft preservation**

Gabmen Kennedy[1], Sangeen Jabbar[1], Criostoir O Suilleabhan[2], Sean Leavey[3], Paula Calvert[1]

1. *Dept of Medical Oncology, University Hospital Waterford (UHW)*
2. *Hepato-Pancreatico Biliary surgery, Mercy Hospital Cork*
3. *Nephrology Dept, UHW*

P-24 **The Bread and Mould Model: A Medical Student–Developed Educational Innovation for Teaching Melanoma Excisional Margins**

Heather Croghan-Miksch (medical student), Kelsey O'Donnell, Christine S Quinlan

UCD student and affiliated with MMUH

P-25 **Primary Bladder Melanoma: A Case Report**

Leya Motala[1], Eilís Ní Chinnéide[1], Dearbhail Ni Chaoimh[2], Aisha Saleem[3], Shamin Gholami Noudeh[4], Rizwan Ahmad[4], Jaipreet Singh[1]

1. *Histopathology Department, Connolly Hospital Blanchardstown, Dublin*
2. *Medical Oncology Department, Beaumont Hospital, Dublin*
3. *Urology Department, Connolly Hospital Blanchardstown, Dublin*
4. *Dermatology Department, Connolly Hospital Blanchardstown, Dublin*

P-26 **The Rare Collision of Melanocytic Neoplasia with Dermatofibroma**

Leya Motala[1], Eilís Ní Chinnéide[1], Shamin Gholami Noudeh[2], Rizwan Ahmad[2], Jaipreet Singh[1]

1. *Histopathology Department, Connolly Hospital Blanchardstown, Dublin*
2. *Dermatology Department, Connolly Hospital Blanchardstown, Dublin*

P-27 **Development of a National Clinician Approved Digital Platform for Melanoma Patient Education in Ireland**

K O'Donnell[1], S Potter[2], N Christodoules[2], K Curtin[3], M Staunton[3], X Viega[4], U Kearns[4], D Ryan[4]

1. *Department of Oncology, Mater Misericordiae University Hospital, Dublin*
2. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
3. *Melanoma Support Ireland*
4. *MyPatientSpace*

P-28 **Immune-related endocrine adverse events with ipilimumab and nivolumab in melanoma patients – St Vincent's Private Hospital experience**

Jorge Reis[1], Jane Martin[1], Nuno Silva[1], John Crown[2]

1. *Pharmacy Department, St Vincent's Private Hospital, Dublin, Ireland*
2. *Department of Medical Oncology, St Vincent's University Hospital, Dublin, Ireland*

P-29 **Don't Let It Get Under Your Skin: An Evaluation of Sun Safety Awareness and Beauty-Driven UV Exposure in the Irish Education System**

Roney A, Abdallah L, Abdallah L, Chanders L

Trinity College

P-30 **Early real-world experience with adjuvant pembrolizumab for resected stage IIB/IIC melanoma following reimbursement in Ireland: a single-centre series**

Arifa Salim[1], Konrad Timon[1], Louise Fleming[2], Aoife Lally[2], Sarah E Lochrin[1]

1. *Department of Medical Oncology, St Vincent's University Hospital, D04 T6F4 Dublin, Ireland*
2. *Department of Dermatology, St Vincent's University Hospital, D04 T6F4 Dublin, Ireland*

Basic Research

P-31 **Discovery and biological evaluation of novel cysteinyl leukotriene receptor 1 antagonists for the treatment of uveal melanoma**

Billy J Brennan[1], Alina Qaisar[1], Camilla M Fontana[2,3], Lasse D Jensen[4], Breandán N Kennedy[2,3], Niamh M O'Boyle[1]

1. *School of Pharmacy and Pharmaceutical Sciences, Panoz Institute and Trinity Biomedical Sciences Institute, The University of Dublin Trinity College*
2. *UCD Conway Institute of Biomolecular and Biomedical Research, University College Dublin*
3. *UCD School of Biomolecular and Biomedical Science, University College Dublin*
4. *BioReperia AB, Wahlbecksgatan, 582 16 Linköping, Sweden*

P-32 **Extracellular Vesicle-Associated LRG1 in Melanoma-Microenvironment Crosstalk**

Natasha Christodoulides[1,2,3,4,5], Yashna Chabria[2,3,4], Stephanie Bollard[1,5], Lorraine O'Driscoll[2,3,4], Shirley Potter[1,4,5]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
2. *Trinity St James's Cancer Institute*
3. *Royal College of Surgeons in Ireland (RCSI)*
4. *National Cancer Registry Ireland (NCRI)*
5. *School of Medicine, Trinity College Dublin*

P-33 **Proteomic Identification of a Metastasis-Associated Protein Signature in Large Extracellular Vesicles Derived from Human Metastatic Melanoma Cells**

Xuemei Duan[1], Kieran Wynne[1,3,5], Shirley Potter[2,3,4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology, School of Medicine, University College Dublin, Dublin, Ireland*
2. *School of Medicine, University College Dublin, Dublin, Ireland*
3. *The Conway Institute, University College Dublin, Ireland*
4. *St James's Hospital, Dublin, Ireland*
5. *Systems Biology Ireland, University College Dublin, Belfield, Dublin 4, Ireland*

P-34 **Receptor Tyrosine Kinase-like Orphan Receptor 1 (ROR1) inhibitor ARI-1 modulates the growth of uveal melanoma cells and causes cell death via the ferroptosis pathway**

Niamh Duggan[1], Eve O'Reilly[1,2], Toni Oladimeji[1,2], Ellie Swords[1,2], Camilla Fontana[1,2], Narod Kebabci[1,3], Colm Ryan[1,4], Nora Rauch[5], Kieran Wynne[4,5], John Crown[6], Breandán Kennedy[1,2]

1. *UCD Conway Institute, University College Dublin, D04 V1W8 Dublin, Ireland*
2. *UCD School of Biomolecular and Biomedical Science, University College Dublin, D04 V1W8 Dublin, Ireland*
3. *UCD School of Computer Science, University College Dublin, D04 V1W8 Dublin, Ireland*
4. *Systems Biology Ireland, School of Medicine, University College Dublin, Belfield Dublin 4, Ireland*
5. *UCD School of Medicine, University College Dublin, D04 V1W8 Dublin, Ireland*
6. *Department of Medical Oncology, St Vincent's University Hospital, D04 T6F4 Dublin, Ireland*

P-35 **Cannabinoid receptor 2 inverse agonisms as a novel therapeutic strategy against metastatic uveal melanoma**

Camilla Maria Fontana[1,2], Jessica Spratt[1], Marianna Schwarz[1,3], Niamh Duggan[1,2], Breandán Kennedy[1,2]

1. *School of Biomolecular and Biomedical Science, University College Dublin*
2. *Conway Institute for Biomolecular and Biomedical Research, University College Dublin*
3. *Amsterdam University College, Amsterdam, Netherlands*

P-36 **Electrochemotherapy Drives Temporal and Systemic Immune Remodelling in Cutaneous Melanoma In-Transit Metastases: A Multiplex Spatial Analysis**

Chowdhury Arif Jahangir[1], Čemažar Maja[2], Klančar Gašper[2], Gašljević Gorana[2], B Perić[3], William M Gallagher[1], Arman Rahman[3]

1. *Cancer Biology and Therapeutics Laboratory, UCD School of Biomolecular and Biomedical Science, UCD Conway Institute, University College Dublin, Dublin, Ireland*
2. *Department of Pathology, Institute of Oncology Ljubljana, Ljubljana, Slovenia*
3. *Department of Surgical Oncology, Institute of Oncology Ljubljana, UCD School of Medicine, University College Dublin, Dublin, Ireland*

P-37 **'Farmfluencers': Prevalence of Skin Cancer Awareness Messaging Among Irish Agricultural Social Media Content Creators: A Cross-Sectional Content Analysis**

Alison Long[1] Supervising author Prof Anne-Marie Tobin[2]

1. *St James's Hospital, Dublin, Ireland*
2. *Tallaght University Hospital, Dublin, Ireland*

P-38 **Selective NR4A modulation reveals differential vulnerabilities across melanoma subtypes**

Rebekah Mooney[1], E Patricia Rodriguez[1,2], Evelyn P Murphy[2], Paul Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

P-39 **SUMOylation constrains PPARγ transcriptional activity in melanoma cells**

E Patricia Rodriguez[1,2], Evelyn Murphy[2] and Paul Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

P-40 **Evaluating the role of frailty scores in determining indication for sentinel lymph node biopsy in elderly melanoma patients**

Chloe Spillane[1], Maud Van Den Hurk[1], Dervla McManus[2], Eiran Gannon[1], Laura Wrafter[1], Joseph Siby[1], Kenneth Joyce[1]

1. *Galway University Hospital, Galway, Ireland*
2. *University of Galway, Galway, Ireland*

P-41 **Investigating the Therapeutic Potential of Cannabinoid Receptor 2 Inverse Agonists against Metastatic Uveal Melanoma**

Jessica Spratt[1], Camilla Maria Fontana[2], Breandán Kennedy[3]

1. *School of Biomolecular & Biomedical Science, University College Dublin*
2. *School of Biomedical Science, Conway Institute, University College Dublin*
3. *School of Biomolecular & Biomedical Science, Conway Institute, University College Dublin*

P-42 **Proteomics signature of oncogenic protein signaling-suppression in cancer-associated fibroblasts in human melanoma**

Joanna Stefan[1], Cristina Casalou[2], Aoife Lally[4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology*
2. *chool of Biology and Environmental Science*
3. *Conway Institute, University College Dublin, Ireland*
4. *Dermatology Department at St Vincent's University Hospital, Dublin*

P-43 **Proteomic analysis of metabolic pathway regulation in human melanoma cancer-associated fibroblasts in vitro**

Joanna Stefan[1], Cristina Casalou[2], Aoife Lally[4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology*
2. *School of Biology and Environmental Science*
3. *Conway Institute, University College Dublin, Ireland*
4. *Dermatology Department at St Vincent's University Hospital, Dublin*

P-44 **Context-Dependent Role of KSR1 in Regulating Therapeutic Response in Cutaneous Melanoma**

Ellie Swords[1,2,3], Steffen Bakken[1,2], Ashish Neve[1,2], Nora Rauch[1], Breandán N Kennedy[2,3], Jens Rauch[1,3]

1. *Systems Biology Ireland, School of Medicine, University College Dublin, Dublin D04 V1W8, Ireland*
2. *UCD Conway Institute, University College Dublin*
3. *UCD School of Biomolecular and Biomedical Science, University College Dublin*

P-45 **Oncogenic MAPK signalling regulates vitamin D receptor stability and function in BRAFV600E melanoma cells**

K Michelle Hau[1], E Patricia Rodriguez[1,2], Evelyn Murphy[2], Paul D Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

P-1

Syringotropic Spread in Cutaneous Melanoma: A Case Series of Four Patients with Deep Eccrine Involvement

Brennan C, Fabre A

1. *Histopathology SHO, St Vincent's University Hospital*
2. *Clinical Professor at UCD School of Medicine and Consultant Histopathologist, St Vincent's University Hospital*

Background:

Syringotropic melanoma is a rare histopathological variant characterised by the extension of malignant melanocytes into eccrine structures, allowing spread into the deep reticular dermis and subcutaneous tissue. Recognition is important as it may affect Breslow thickness and stage.

Aim:

We describe three cases of syringotropic melanoma and review their clinicopathologic features in the context of the literature.

Methods:

We retrospectively identified four melanomas from the St Vincent's University Hospital database fulfilling criteria for syringotropic involvement. Clinical information was provided by the requisition forms and authorised pathology reports. A literature review was conducted in English using the Pubmed and Google Scholar database with the search term "syringotropic melanoma." Immunohistochemistry was used to confirm syringotropic involvement.

Results:

Three patients were female, aged 81, 83 and 27, with lesions on the face, sole of foot and arm respectively. One patient was male, 75 with a lesion on his scalp. A summary of the core data items for our cases is provided in table one. Melanoma subtypes included superficial spreading, lentigo maligna and acral lentiginous melanoma. All cases showed dermal invasion (Clark IV), with Breslow thickness 2mm, 2.5mm, 1.4mm and 2mm respectively. Syringotropic involvement was confirmed using immunohistochemistry for SOX10, PRAME and Mel A, recognising eccrine cells positive for SOX10 and negative for Mel A. Conventional adverse prognostic markers include lymphovascular invasion for one case, and absent tumour infiltrating lymphocytes (TILs) for three.

In our literature review, ten papers were found with a total of 48 cases of syringotropism. The breakdown of cases is as follows; 34 had syringotropism without invasion, 13 cases had syringocentric invasion with all but one resulting in an increase in Breslow thickness, and 1 case showed syringocentric invasion which may have contributed to Breslow thickness.

Conclusion:

Syringotropic melanoma is rare and may present across multiple anatomical sites. Recognition of syringotropism is important to avoid underestimating tumour invasion and, in its presence, consideration should be given to extra levels and immunohistochemistry.

Table 1:

Case	Clinical details	Diagnosis	Growth Phase	Clark Level	Breslow Thickness	Ulceration	Mitotic rate/mm^2	Microsatellites	Lymphovascular invasion	TILs*	PNI*	Regression	pTNM Stage
1	81 YO, skin excision right cheek.	Malignant melanoma, lentigo maligna subtype.	Vertical	IV	2mm	Absent	0	Absent	Absent	Brisk	Absent	Absent	pT2a
2	83 YO, excisional biopsy melanoma left sole of foot	Malignant melanoma, acral subtype.	Vertical	IV	2.5mm	Absent	2	Absent	Present	Absent	Absent	Absent	pT3a
3	27 YO, excisional biopsy of pigmented lesion, left arm	Malignant Melanoma, superficial spreading subtype.	Vertical	IV	1.4mm	Absent	0	Absent	Absent	Absent	Absent	Absent	pT2a
4	75 YO, pigmented scalp excision.	Malignant Melanoma, lentigo maligna subtype.	Vertical	IV	2mm	Absent	1	Absent	Absent	Absent	Absent	Absent	pT3a

**TILs= Tumour infiltrating lymphocytes. **PNI=Perineural invasion*

P-2

Occult ring melanoma of the ciliary body presenting as unilateral glaucoma with heterochromia

Budweg X, Bourke L, Horgan N, Murtagh P

The Royal Victoria Eye & Ear, Ocular Oncology Service

Background:

Ring melanoma of the ciliary body is a rare form of uveal melanoma that can present insidiously and mimic other anterior segment pathologies. Delayed diagnosis may occur when the condition masquerades as unilateral glaucoma.

Methods:

We report the case of a 62-year-old Caucasian man with unilateral glaucoma and longstanding heterochromia of the left iris first documented in 2007. He was referred in May 2024 to a glaucoma service with presumed anterior segment dysgenesis or uveitic glaucoma. Intraocular pressure remained elevated despite maximal medical therapy, and a glaucoma drainage device was inserted in September 2024.

In May 2025 he was re-referred with anterior chamber cellular deposits coating the corneal endothelium and iris, and a small hyphaema. Dilated iris vessels raised concern for herpetic or neovascular glaucoma. He received intravitreal bevacizumab and subsequently underwent pars plana vitrectomy, anterior chamber washout, phacoemulsification, and intraocular lens implantation.

Results:

In the postoperative period, a raised iris lesion was observed, and the patient was referred to the ocular oncology service at RVEEH. A pigmented subconjunctival bleb overlying the glaucoma drainage tube was noted. Ultrasound biomicroscopy (UBM) demonstrated 360° ciliary body and iris thickening with maximal thickness of 6.2 mm, consistent with ring melanoma.

Multidisciplinary discussion favoured uveal melanoma with extra-scleral extension. The patient was managed with aspiration of bleb fluid and biopsy of the conjunctiva which confirmed uveal melanoma, and on the same day following rapid turnaround of cytology/histology, he underwent enucleation with orbital biopsies. Imaging of the head and neck did not demonstrate any regional disease and liver MRI showed no evidence of metastases.

Conclusion:

This case highlights the diagnostic challenge of occult ciliary body melanoma masquerading as unilateral glaucoma. Early UBM in cases of unilateral glaucoma with heterochromia may facilitate earlier diagnosis and reduce the risk of inadvertent extra-ocular tumour seeding, e.g. via glaucoma drainage devices.

P-3

Melanoma and skin cancer awareness and protection among the Farming Community in Ireland

Linda Chanders

Trinity College, Dublin

Background:

Agricultural workers in Ireland represent an occupational cohort at extreme risk of skin cancer, experiencing six to eight times the cumulative ultraviolet radiation (UVR) exposure of indoor workers. Outdoor workers account for 26.6% of all skin cancer deaths in Ireland, equating to approximately one sun-related occupational death per week. This risk is further compounded by chemical co-carcinogenesis; handling agents such as glyphosate in unshaded environments increases the odds ratio for malignancy to 4.68. This study aims to evaluate the current levels of skin cancer awareness, knowledge, and protective behaviours within the Irish farming community to identify critical gaps in prevention.

Methods:

A cross-sectional descriptive survey was conducted, targeting the Irish agricultural sector (Female 44.44% and Male 55.56%). Data was collected from participants (n=40) regarding their self-rated knowledge of melanoma, ability to identify symptoms, and specific sun protection factor (SPF) usage patterns across different seasons. Participants had the option to skip sections (n=7)

Results:

The survey revealed a significant deficit in health literacy. Only 5% (n=2) of respondents rated their knowledge of skin cancer and melanoma as "High" or "Very High," while 52.5% rated it as "Low" or "Very Low." Furthermore, 72.5% of farmers admitted they could not identify most signs of the disease. Protective behaviours were inconsistent and heavily seasonal; 22.5% (n=9) reported using no sunscreen at all. While 87.5% use SPF in summer, this figure collapses to just 12.5% during winter months, despite the risk of cumulative UVR damage. It found 40% of the cohort use SPF 30 or lower, while 37.5% typically use SPF 50+. Additionally, 7.5% of the cohort identified current skin concerns requiring a GP consultation,

Conclusion:

Irish farmers exhibit a dangerous "knowledge-behaviour gap." Critically low awareness of early detection signs, combined with the absence of year-round protection despite cumulative UVR and chemical risks, necessitates urgent, occupation-specific educational interventions to reduce mortality in this high-risk group.

P-4

Cost-effectiveness of a CP-GEP (Merlin)–guided strategy for sentinel lymph node biopsy in cutaneous melanoma: an Irish population-based analysis

Doran C[1], Christodoulides N[1,2,3], McMenamin M[4], Beausang E[1], Dempsey M[1], Healy C[1], Ormond P[5], Moran B[5], Barry R[5], Kelleher F[6], O'Hanlon Brown C[6], Arentsten T[7], Potter S[1,2,3]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin, Ireland*
2. *Trinity St James's Cancer Institute, Dublin, Ireland*
3. *Royal College of Surgeons in Ireland, Dublin, Ireland*
4. *Department of Histopathology, St James's Hospital, Dublin, Ireland*
5. *Department of Dermatology, St James's Hospital, Dublin, Ireland*
6. *Department of Medical Oncology, St James's Hospital, Dublin, Ireland*
7. *SkylineDx, Amsterdam, Netherlands*

Background:

Sentinel lymph node biopsy (SLNB) is the standard staging investigation for clinically node-negative cutaneous melanoma; however, up to 85% of procedures are negative, exposing patients to unnecessary surgery, morbidity, and costs. The Merlin (clinicopathologic–gene expression profile CP-GEP) assay integrates tumour biology with traditional risk factors to identify patients at low risk of nodal metastasis. It is likely to enter routine practice. We evaluated the cost-effectiveness of the strategy.

Methods:

A multicentre retrospective cohort study was conducted using National Cancer Registry of Ireland pathology, surgical, and hospital-costing datasets. Patients with clinically node-negative melanoma (predominantly pT1b–pT2a) eligible for SLNB were included. A decision tree with Markov transition states compared a standard care strategy with a Merlin-guided strategy, in which SLNB is omitted in low-risk patients. Analyses were performed from the Irish public payer (HSE) perspective over a lifetime horizon. Outcomes included SLNB utilisation, downstream healthcare costs, recurrence, survival, and quality-adjusted life years (QALYs). Cost-effectiveness was expressed as incremental cost-effectiveness ratios (ICERs; €/QALY).

Results:

Model-based estimates demonstrate that Merlin-guided strategy reduces SLNB utilisation, particularly in early-stage melanoma. Avoidance of unnecessary surgery and related morbidity lowers per-patient costs. At a population level, this results in meaningful cost savings while maintaining acceptable oncologic outcomes. The strategy is expected to be cost-effective at the accepted Irish willingness-to-pay threshold.

Conclusions:

This study provides the first Irish real-world cost evaluation of genomic risk stratification in melanoma. A Merlin-guided SLNB strategy represents a cost-effective approach to melanoma staging, reducing unnecessary surgery while optimising resource utilisation within the Irish healthcare system. These findings support integration of genomic risk stratification and provide an evidence base for prospective implementation.

P-5

Local recurrence and metastases with melanoma in situ – time to reconsider the role of wide local excision?

C Drumm[1], L Holcroft[1], R Kelly[2], R Brennan[1], M Roche[1,3], C Feighery[1], N Kearney[1]

1. *Our Lady of Lourdes Hospital Drogheda*
2. *Mater Misericordiae University Hospital*
3. *Beaumont Hosipital*

Aim:

The current guidelines recommend wide local excision (WLE) with a 5mm margin for melanoma in situ (MIS). A 2025 systematic review highlighted the lack of strong evidence to support this practice. This study aimed to assess local recurrence, metastasis and melanoma-specific survival of non-LM and non-acral lentiginous (non-ALM) subtypes of MIS.

Methods:

This retrospective cohort study included all patients diagnosed with a non-LM/ALM MIS at our centre from 2023-2025 inclusive. Anonymised data was collected from medical records and the melanoma database.

Results:

A total of 69 patients, with a mean age of 62 years (SD=17, range 20-98), had 71 non-LM/ALM MIS. The mean tumour diameter was 1.2cm (SD=0.8, range 0.1–4.0), with the upper extremity (n=24 [33.8%]) and trunk (n=23 [32.4%]) most commonly affected, followed by the lower extremity (n=15 [21.1%]), and the head and neck (n=9 [12.7%]).

All initial excisional biopsies (n=62 [87.3%]) had clear margins, with the remaining 9 (12.7%) lesions having a punch or incisional biopsy. A WLE was performed for 66 tumours (92.9%), 1 patient refused to attend for WLE, and the remaining 4 tumours had been excised by 4mm at initial excision. The mean WLE margin was 0.5cm (SD=0.1, range 0.2–1.0) and 1 patient had residual disease near the margin following initial excision. In this case, the initial tumour measured 2.5cm on the plantar aspect of the foot and the WLE margin was 0.3cm.

Over a mean follow-up of 0.6 years (SD=0.6, range: 0–2.6), no patients had a local recurrence, and 1 had a metastasis and melanoma-specific death. The initial tumour had clear margins on excisional biopsy and WLE, with a standard 0.5cm margin. The metastasis occurred within 1 year and no other primary melanoma lesion was found.

Conclusion:

This study is limited by a small sample size and single-centre design, but adds to the limited evidence regarding the current guideline recommendation of re-excision with 5mm margins. The majority of our patients had clear margins on excisional biopsy with residual disease on WLE in just 1 patient. Given the significant morbidity with WLE, particularly on cosmetically or functionally sensitive sites, further research is needed to strengthen the evidence supporting this practice.

P-6

Trends in melanoma incidence, stage at diagnosis, and survival by socioeconomic deprivation in Ireland: a 20-year review

YiXuan Goh[1], Laura Finneran[2], Theresa Redaniel[2], Yasmine Safta[1], Olwyn Conlon[1], Maeve Herlihy[1], Aoife Granahan[1], Síona Ní Raghallaigh[1]

1. Department of Dermatology, Beaumont Hospital, Dublin 9
2. National Cancer Registry Ireland, Cork

Background:

In Ireland, socioeconomic status affects melanoma outcomes with the most deprived group having lower incidence of melanoma, but poorer outcomes with lower survival rates. This study examines trends in incidence, stage at diagnosis and net survival across deprivation quintiles from 2004 to 2023.

Methods:

Data was obtained from the National Cancer Registry Ireland. Deprivation quintiles are based on patient addresses which are geocoded to electoral division level, and stratified from least to most deprived. Data was grouped into four five-year time periods (2004–2008, 2009–2013, 2014–2018, 2019–2023).

Results:

Melanoma incidence rose in all quintiles over the years. It was consistently higher in less deprived populations. This increased from 28.6 to 41.0 per 100,000 in the least deprived quintile compared with a smaller increase from 24.7 to 27.7 per 100,000 in the most deprived, from the earliest to most recent period.

Stage at diagnosis showed consistent socioeconomic variation. Individuals in the least deprived quintile had a higher proportion of Stage I diagnoses (50.4–65.8% across periods), while the most deprived quintile had lower proportions (48.3–60.4%). The least deprived quintile also had lower Stage IV diagnoses (1.6–4.4%), compared to the most deprived (2.3–6.2%). This trend did not change significantly over time.

Five-year net survival improved across all groups, increasing from 84.0% to 95.2% in the least deprived and from 79.7% to 84.0% in the most deprived. The least deprived group consistently had higher survival rates. However, the survival gap widened from approximately 4 to over 11 percentage points.

Conclusion:

Despite overall improvement in melanoma outcomes in Ireland, socioeconomic inequalities persist in the cancer pathway. Higher incidence but earlier stage diagnosis in less deprived population suggests greater detection. Lower incidence and later-stage presentation in deprived group may reflect delayed diagnosis. Strategies to promote earlier detection in deprived populations are essential to reduce inequality and improve outcomes.

P-7

The Impact of the COVID-19 Pandemic On Recurrent Melanoma And Newly Presenting Metastatic Melanoma

Cristina Grechin[1], Nicholas Stefanovic[1], Rory Patterson[2], Tamer Guirguis[2], Rory O'Sullivan-Sexton[3], Muireann Roche[1]

1. *Dermatology Department, Beaumont Hospital, Dublin, Ireland*
2. *Plastic Surgery Department, Beaumont Hospital, Dublin, Ireland*
3. *Trinity College Dublin, Ireland*

Background:

This study aimed to compare recurrent and newly metastatic melanoma cases diagnosed in 2018–2019 with those in 2022–2023 to assess the pandemic's impact.

Methods:

A retrospective chart review was performed of 119 patients diagnosed with recurrent and newly metastatic melanoma at a tertiary referral centre (Beaumont Hospital, Ireland) during the specified two time periods.

Results:

Recurrent melanoma cases increased from 13 pre-pandemic to 29 post-pandemic (123% increase, p=0.014), with patients aged 80–89 years most affected in both cohorts. The primary tumour stage most associated with recurrence shifted from pT2a pre-pandemic to pT4b post-pandemic. In both groups, over 70% of recurrences occurred within five years of initial diagnosis.

Newly diagnosed metastatic melanoma cases increased from 25 to 52 post-pandemic (108% increase, p=0.002), predominantly affecting patients aged 70–79 years. The proportion of metastatic melanoma of unknown primary origin increased from 4% to 19%.

Total melanoma diagnoses rose markedly from 91 to 191 cases (109% increase) over the study period. Proportional analysis demonstrated stable recurrence rates of approximately 15% (p=0.83) and stable rates of newly metastatic presentation at approximately 27% (p=0.99), indicating no significant change in melanoma biology or detection patterns.

Conclusion:

COVID-19 indirectly affected melanoma care by delaying presentations and increasing case volume, without altering disease biology or treatment effectiveness. Stable recurrence and metastatic rates affirm the robustness of surveillance. As the incidence of melanoma continues to rise, maintaining vigilance, ensuring rapid referrals, and sustaining dermatology and oncology resources are essential to meet the growing demand.

P-8

NGS-Based Molecular Characterisation of Melanoma in an Irish Tertiary Referral Centre

Hayes A[1], Crosbie R[1], Werner R[1], Heffron C[1,2]

[1] Department of Histopathology, Cork University Hospital, Cork, Ireland
[2] School of Medicine, University College Cork, Cork, Ireland

Aim/Background:

Next-generation sequencing (NGS) has expanded the molecular characterisation of melanoma, identifying key driver mutations with prognostic and therapeutic relevance while also uncovering variants of uncertain significance (VUS). Despite this, many centres continue to rely on histopathology and limited single-gene testing, underutilising NGS as a broader prognostic tool. This study aimed to characterise the NGS profile of melanoma cases in our centre from 2023–2025 and assess the frequency and patterns of genomic alterations.

Methods:

All melanoma cases undergoing NGS over a 3-year period were reviewed. DNA from formalin fixed paraffin embedded (FFPE) tissue was analysed using the 50-gene Oncomine Precision Assay on the Ion Torrent Genexus platform. Variant interpretation followed CAP/AMP/ASCO and NCCN guidelines, with actionable Tier I variants reported in line with NCCP requirements.

Results:

A total of 112 cases were sequenced: 57 showed detectable variants, 54 had no variants, and 1 was insufficient. Multiple alterations were identified in 42 cases. The most frequent mutations were NRAS (37%), TP53 (17%), CDKN2A (11%), BRAF (12%), MAP2K1 (4%), PTEN (4%), PIK3CA (4%), CTNNB1 (4%), and ERBB4 (4%). Percentages reflect mutation frequency relative to the total number of sequenced cases.

Co-mutation analysis showed BRAF co-mutated in 7/13 cases, most frequently with CDKN2A (4/7) and MAP2K1 (2/7). NRAS was co-mutated in 18/41 cases, most frequently with TP53 (7/18), CDKN2A (5/18) and CTNNB1 (3/18). These patterns highlight substantial molecular heterogeneity. VUS identified have not yet undergone orthogonal validation.

Conclusions:

The mutation spectrum aligns with recognised melanoma subtypes and carries prognostic significance. NRAS and PTEN mutations are associated with poorer outcomes, while CTNNB1 activation is linked to reduced immunotherapy response. The high rate of co-mutations supports the value of NGS in refining prognostic assessment and guiding personalised management.

P-9

Untreated malignant melanoma in an ageing immune system: a case report

Claudine Howard-James[1], Kelsey O'Donnell[1], Fergal J Moloney[1,2]

1 Department of Dermatology, Mater Misericordiae University Hospital, Dublin 7
2 School of Medicine, University College Dublin, Dublin 4

Background:

Little is known about the natural history of untreated cutaneous melanoma. In an ageing population with escalating skin cancer rates, the complexity of melanoma management in frail elderly patients is increasingly relevant.

Methods/Results:

An 89-year-old female presented in 2023 with a pigmented lesion of the left dorsal forearm. Her background was notable for moderate dementia, pT2a melanoma of the leg in 2022, multiple previous keratinocyte cancers, and a recent breast cancer diagnosis.

Clinical examination revealed an atypical melanocytic lesion. Punch biopsy demonstrated invasive lentigo maligna melanoma, at least 1mm Breslow thickness (pT1b). There was adjacent grey macular pigmentation, biopsy revealing regression but no malignancy. There was no lymphadenopathy.

Multidisciplinary consensus was that she was unsuitable for full staging or systemic therapy. Risks and benefits of surgery or radiation treatment for local control were outlined to the patient and family. They expressed a strong preference for a watchful waiting approach due to her cognitive status, comorbidities, and potential distress perioperatively.

Over three years of follow-up there has been a steady deterioration in frailty status and cognition, but no clinical evidence of nodal or systemic spread. Her breast cancer has not progressed on Tamoxifen. The family's decision remained that without quality-of-life impact, conservative management and surveillance was in her best interest.

The grey macular patch extended over 18 months before evolving into a field of palpable nodules. In the subsequent 15 months the nodules regressed and flattened. Recently a larger 3cm ulcerated nodule developed within the field, prompting referral for radiation for local control.

Conclusion:

This case offers a rare insight into the evolution of untreated cutaneous melanoma in the elderly. In one cohort of patients >90 years with melanoma, cause of death was due to other medical conditions in 90%. In this case, over 36 months of clinical surveillance, there was evidence of local and in-transit progression, subsequent regression, then further progression without overt metastasis. Increased response to melanoma immunotherapies has been demonstrated with advancing age, and immunosenescence in this case may play a role in maintaining localised disease.

P-10

The Impact of Artificial Intelligence on Clinical Decision-Making in Modern Oncology

Idris AF, Lim J, Thistlethwaite F

Advanced Immunotherapy and Cell Therapy (AICT), The Christie NHS Foundation Trust, Manchester, UK

Aim/Background:

Artificial intelligence (AI) is increasingly integrated into oncology, particularly in data-intensive domains such as melanoma and early-phase clinical trials. While AI enhances analysis of complex datasets, its role in real-world clinical decision-making remains uncertain. This study explores whether AI can replace or augment oncologist-led decision-making.

Methods:

A qualitative, practice-based analysis was conducted using clinical experience from early-phase trials within an Experimental Cancer Medicine Centre. Decision-making processes in melanoma, immunotherapy, and cell therapy were examined, focusing on patient selection, treatment sequencing, and toxicity management under conditions of uncertainty.

Results:

AI demonstrates strong capability in predicting treatment response through integration of genomic, transcriptomic, and clinical data, with increasing evidence of improved predictive performance compared to conventional biomarkers. However, real-world decisions frequently depend on contextual factors not captured in structured datasets, including dynamic performance status, prior toxicity trajectories, logistical constraints, and patient preference. In early-phase trials and cell therapy, decisions are iterative and multidisciplinary, requiring interpretation beyond probabilistic outputs. Similarly, immunotherapy-related toxicities are dynamic and clinically nuanced, often requiring early recognition based on experiential judgement rather than measurable data alone.

Conclusion:

AI is a powerful tool for enhancing prediction and data integration in oncology but cannot replace clinical judgement. Decision-making extends beyond data analysis to include contextual interpretation, ethical responsibility, and patient-centred care. The future model is one of augmented intelligence, where oncologists act as clinical integrators of AI-derived insights. This role is particularly critical in melanoma and early-phase clinical trials, where uncertainty and complexity are greatest.

P-11

When Melanoma Surprises – An Uncommon Case in a Young Patient

Irwin J, Maviva N, Podmore P

Altnagelvin Hospital, Western Health and Social Care Trust

Abstract:

Amelanotic melanomas are less common than those that present clinically with pigmentation at between 2–10% of cases, and they are also challenging to diagnose even amongst experienced professionals in Dermatology. Lesions can often present initially as benign-looking pink/red macules or papules with a small proportion displaying light-brown pigmentation. Often the differential diagnoses can include dermal naevus, haemangioma, pyogenic granuloma, or as in this case a keloid scar.

Due to the complexities surrounding identification of these lesions, this can result in delayed diagnosis and subsequent referral to oncology services for treatment. Therefore, it is important to share learnt experience from clinical cases.

This is a case of a young man in his 20s who presented to our skin clinic, with a 2–3 year history of a pink nodule on the lobe of his left ear. This was analysed using dermoscopy and the appearance was in keeping with a keloid scar. Unfortunately, it continued to grow and he presented at a later date when it was biopsied displaying a malignant melanoma.

Despite improved technologies and access to treatments, it is still important to risk-stratify patients with thorough history-taking. The gentleman in this case was Fitzpatrick skin type 1 and had red hair. He had a prolonged time in Australia which in combination with aforementioned factors, increased his risk of melanoma. In relation to this case, it would be important to remember to ask about previous ear piercings which would be relevant in the case of a keloid.

P-12

An Audit of Adherence to Post-Treatment Ultrasound Surveillance Guidelines in Cutaneous Melanoma

A Kenny, M Murphy, L Wrafter, J Kelly

Plastic Surgery Department, Galway University Hospital

Background:

The NCCP National Clinical Guideline on Radiological Staging and Surveillance of Patients with Cutaneous Melanoma (HSE, May 2024) recommends that patients with Stage III positive sentinel lymph node (SLNB) cutaneous melanoma who have not had a complete lymph node dissection should receive ultrasound (US) surveillance of the draining nodal basin every four to six months for years 1 to 3, and every 6 months for years 4 to 5 (Recommendation 2.2.7). The national target compliance is 90%.

Aim:

To assess compliance of the GUH Plastic Surgery melanoma service with NCCP Recommendation 2.2.7 and identify gaps in surveillance.

Methods:

A retrospective review of the US surveillance database was performed. 87 patients were included. Patients were classified as having a missed scan (scheduled next scan date had passed without a completed scan documented in the database), not yet due (less than 6 months post-SLNB), or up to date. Those not yet due were excluded from the compliance denominator. Descriptive statistics were used throughout.

Results:

Of 87 patients, 11 were not yet due and excluded from analysis, leaving 76 eligible patients. 65 (85.5%) had missed a surveillance scan. Ten patients (11.5%) had no US scan history recorded in the database. 6 were deceased at the time of data collection, these were excluded for evaluation of up to date scans – 11/70 (15.7%) patients had up to date surveillance, falling well short of the 90% target.

Conclusion:

US nodal basin surveillance compliance at GUH falls significantly below the national standard – 15.7% vs target 90% compliance. Patients with overdue scans require immediate contact and scheduling. These findings will be presented to the MDT to agree a coordinated, standardised scheduling and documentation process for US surveillance involving our radiology colleagues and all stakeholders. Re-audit is planned for September 2026.

P-13

Sentinel lymph node biopsy in pT1b melanoma: Time to align practice with NICE 2022 guidelines?

Lee, YX[1], Lally, A[2], Woods J[1], Dolan R[1], O'Neill T[1]

1. *Plastics and Reconstructive Surgery Department, St Vincent's Hospital, Dublin*
2. *Dermatology Department, St Vincent's Hospital, Dublin*

Background:

Sentinel lymph node biopsy (SLNB) provides staging information in melanoma but remains controversial in pT1b disease due to low positivity rates and procedure-related morbidity. We evaluated whether adopting NICE 2022 guidelines (ulceration, lymphovascular invasion, or mitotic index ≥2/mm²) would optimise SLNB utilisation compared with current nomogram-based practice.

Methods:

A retrospective analysis of 81 patients with pT1b melanoma (2020–2025) was performed. SLNB utilisation in current practice, guided by Memorial Sloan Kettering (MSKCC) and Melanoma Institute Australia (MIA) nomograms, was compared with projected utilisation based on NICE criteria. Descriptive statistics, concordance and correlation analysis, and group comparisons were performed, with p-values reported.

Results:

Current nomogram-based practice resulted in 67.9% SLNB utilisation, with no positive nodes identified (0/55). MSKCC and MIA demonstrated moderate correlation ($r=0.62$, $p<0.001$) but limited exact agreement (41%). NICE criteria identified 18 patients (22%) who had significantly higher predicted risk than non-eligible patients (MSKCC: 5.22±3.10 vs 3.47±1.63, $p=0.002$; MIA: 9.17±4.60 vs 6.75±3.36, $p=0.017$). Adoption of NICE criteria would reduce SLNB utilisation from 67.9% to 22% (~46% reduction; 37 procedures avoided). Recurrence-free survival was 96.3%, with no clear difference between MIA and NICE strategies. MSKCC did not capture any recurrence.

Conclusion:

Current practice demonstrates high SLNB utilisation with low diagnostic yield in pT1b melanoma. In this Irish cohort, international nomograms may overestimate SLN positivity. NICE criteria may enable selective SLNB, improving efficiency and resource utilisation. These findings support guideline-led selection complemented by nomograms, while recognising limitations of a small sample size and the need for multicentre validation.

P-14

Wearable UV sensors for the prevention of skin cancer: A systematic review

Katie Nolan, Kenneth Joyce

Department of Plastic & Reconstructive Surgery, Galway University Hospital, Ireland

Background:

Ultraviolet exposure is a predictable and modifiable risk factor for the development of skin cancer. Greater awareness of the importance of skin cancer prevention and the rise of wearable smart devices enable users to access regular and continuous health monitoring with non-invasive assessment of personalised biomarkers. There are estimated 15 commercially available wearable UV sensors on the market with many more prototypes reported in the literature. This is the first systematic review of wearable UV sensors employed for UV exposure awareness in a personalised medicine setting and providing data on behavioural changes regarding UV safety and sun protection.

Methods:

This systematic review was performed to identify studies that examined wearable UV sensors for skin cancer prevention between the years 2000 and 2025. PubMed, MEDLINE and EMBASE were searched according to PRISMA guideline. 14 studies met inclusion criteria. Primary outcomes included UV exposure accuracy, sunburn events, participant behavioural change and marketable prototype.

Results:

We identified 10 proof of concept studies that included human testing, 2 RCT studies and 2 cohort studies. Various substrates were tested with 6 wearable devices utilising colour change upon UV exposure using photochromatic dyes, 7 photo diodes sensors that exported data to smartphone apps (4 of these commercially available) and 1 solar panel UV measuring device. 71% of devices were wristband models making them easy to wear and portable. 5 studies surveyed patients post UV exposure and assessed behavioural change based on UV sensing data finding that UV sensors increased sunscreen application, encouraged shade-seeking behaviour and reduced UV exposure in patients with a history of melanoma.

Conclusion:

Wearable UV sensors are cheap and commercially available methods to identify excess UV exposure, enhance protective behaviours and reduce the incidence of skin cancer. Further data is required to establish the most effective modality however dissemination to patient population could prove a helpful adjunct to skin cancer prevention and UV exposure awareness.

P-15

St Patrick's Day as a Culturally Resonant and Climatically Valid Trigger for Promotion of SunSmart Behaviours in Ireland

O'Connell G[1],McEnery M[2], Neville B[2], Moloney FJ[1,3]

1. *Department of Dermatology, Mater Misericordiae University Hospital, Dublin*
2. *HSE National Cancer Control Programme, Dublin*
3. *School of Medicine, University College Dublin*

Aim/Background:

The Ultraviolet Index (UVI) was developed to warn the public about solar hazards, and to serve as a tool to encourage sun safe behaviours. A UVI >/=3.0 is promoted as the trigger at which the Irish public should carry out SunSmart Behaviours (Slip, Slop, Slap, Slide, Seek). Using real world data collected in Ireland over the past 25 years, we investigated 17th of March as an appropriate date to highlight the promotion of SunSmart Behaviours in Ireland.

Methods:

Real-world UVI data collected by Met Eireann at Valentia weather station over the past 25 years was collated using Excel. Maximum UVI daily values (MaxUVI) were recorded. Mean, median and maximum values for the MaxUVI were calculated for the month of March. Subgroup analysis of the two weeks preceding and following March 17th was carried out to determine the prevalence of days in which the MaxUVI was ≥3.0 (MaxUVI≥3).Finally, linear regression was used to analyse trends in MaxUVI and MaxUVI> for the month of March over the past 25 years.

Results:

We determined that 17th of March aligned closely with the beginning of days in which the MaxUVI≥3 is prevalent. Over the past 25 years there were only 5 days in which the MaxUVI≥3 preceding March 17th. This is in comparison 83 occurrences in two weeks following March 17th. In addition, both mean and maximum recorded UVI was significantly higher following 17th of March (table 1). Linear regression did not identify any trend of escalating MaxUVI or MaxUVI>3 in the month of March over the past 25 years.

	March	2–16 March	17–30 March
Sum of days from 2000–2024 with MaxUVI≥3	95	5	83
Mean no. of days per year with MaxUVI≥3	3.653846	0.153846	3.461538
Mean UVI	2.076538	1.6379	2.377646
Maximum recorded UVI	4.816	3.316	4.816

Conclusion:

17th of March (St Patrick's day) is an appropriate date to highlight the promotion of SunSmart Behaviours in Ireland . It is exceptionally rare for MaxUVI≥3 before this date, and frequent for MaxUVI≥3following this date. Our modelling has identified MaxUVI or MaxUVI≥3in March is not increasing over the past 25 years. Finally, 17th of March is culturally resonant, and thus potentially a memorable date on which to commence promotion of sun-protective behaviours.

P-16

Real-World Comparison of Dabrafenib–Trametinib versus Encorafenib–Binimetinib in BRAF-Mutant Advanced Melanoma in Northern Ireland

O'Neill, C

Belfast Health And Social Care Trust

Background

BRAF/MEK inhibitors are established treatments for patients with BRAF-mutant unresectable/metastatic melanoma; however, no head-to-head comparisons exist to evaluate outcomes or tolerability. This retrospective analysis aimed to compare outcomes of Dabrafenib–Trametinib (DT) and Encorafenib–Binimetinib (EB) in patients in Northern Ireland, with a focus on patients with poor prognostic features.

Methods

This retrospective cohort study included 150 patients treated between 2014–2025: 48 received DT and 102 received EB. Baseline data included demographics, ECOG performance status (PS) and M stage at treatment initiation. Outcomes included response rates, progression-free survival (PFS) and overall survival (OS). A subgroup analysis was performed for those with CNS metastases, poor PS and high LDH levels. Evaluation of tolerability included grade 3–4 adverse events (AEs) and commonly reported toxicities.

Results

PFS was significantly longer in the Encorafenib-Binimetinib group (7.7 months vs 4.5 months, p=0.036) with a longer OS trend (12.5 months vs 10.5 months, p=0.12). PFS benefit persisted despite a higher proportion of EB patients starting treatment with ECOG ≥2 (48% vs 29%, p=0.04). In patients with ECOG ≥2, PFS outcomes were similar between groups (5.6 months vs 4.1 months, p=0.18). In patients with CNS metastases, EB was associated with longer PFS (10.3 months vs 4.3 months, p=0.011). In pretreated patients, OS was significantly longer with EB (18 months vs 10.7 months, p=0.01). Among patients with LDH >2× ULN, PFS was similar (5.2 months vs 3.9 months, p=0.77). Overall, AE rates were comparable; however, pyrexia occurred more commonly with DT, whereas transaminitis and ocular toxicity occurred more commonly with EB.

Conclusion

In this real-world cohort of BRAF-mutant advanced melanoma, EB demonstrated a significant PFS advantage over DT, particularly in patients with poor prognostic features such as CNS metastases or prior treatment, while overall survival and tolerability were broadly comparable. This is relevant in a high-risk population with limited salvage options and supports the use of EB as the preferred regimen in this context.

P-17

Practice Variation in Melanocytic Tumours of Uncertain Malignant Potential (MELTUMP): Survey Data

N Twomey, F Sexton, B Nolan, L Kearney, S O'Shea

South Infirmary Victoria University Hospital, Cork

Aim/Background:

MELTUMP describes melanocytic lesions with atypical but non-definitive malignant features, leaving biological potential uncertain. Evidence is limited and management varies. We aimed to characterise current clinical practice in Ireland and the UK.

Methods:

An online cross-sectional survey was distributed to dermatologists and plastic surgeons via professional societies. Items addressed investigation triggers, excision margins, sentinel lymph node biopsy (SLNB), follow-up, ancillary testing, multidisciplinary (MDT) discussion, and guideline use. Descriptive statistics were reported; inter-specialty comparisons used χ^2 or Fisher's exact test.

Results:

Thirty-six clinicians responded (20 dermatology, 15 plastic surgery, 1 general surgery); 89% were consultants. Pathologist opinion was most influential (94%), followed by thickness (56%), ulceration (53%), mitotic activity (50%), and age (47%); 76% considered adolescence highest risk. Wide local excision was recommended by 97%, with preferred margins of 5 mm (50%) or 10 mm (39%), without specialty difference (p=0.62). SLNB was generally reserved for melanoma reclassification (67%); 17% would consider it for adverse features (p=0.47). Follow-up varied: melanoma-equivalent regimens (44%), fixed five years (22%), or discharge post-WLE (17%). Ancillary diagnostics were widely available (86%), most often PRAME (69%) and BAP1 (58%), with no specialty variation (p=1.00). MDT discussion was universal (92%). Only 11% used guidelines, though 72% felt consensus recommendations would improve care (p=0.70).

Conclusion:

This first UK-Ireland survey demonstrates substantial variation in MELTUMP management, particularly regarding margins, SLNB, and follow-up, despite near-universal MDT access and ancillary testing. Minimal guideline use contrasts with strong demand for consensus, highlighting the need for clear recommendations to standardise practice

P-18

Incidence trends of cutaneous melanoma in young adults in Ireland: a 30-year population-based analysis

Natasha Christodoulides[1,2,3], Clara Doran[1], Aline Brennan[4], Megan Lim[5], Deidre Murray[4], Shirley Potter[1,2,3]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
2. *Trinity St James's Cancer Institute*
3. *Royal College of Surgeons in Ireland (RCSI)*
4. *National Cancer Registry Ireland (NCRI)*
5. *School of Medicine, Trinity College Dublin*

Background:

Melanoma incidence continues to rise globally, with emerging evidence of distinct epidemiological patterns in younger populations. Young adults represent a unique cohort with differing risk exposures, behavioural factors and long-term survival implications, yet remain under-explored in population-level analysis. We examined temporal trends in melanoma incidence in Ireland, with a particular focus on young adult populations.

Methods:

Population-based melanoma incidence data from the National Cancer Registry of Ireland (NCRI) were analysed using European age-standardised rates (EASR) from 1994 to 2023. Temporal trends were assessed using Joinpoint regression to estimate annual percentage change (APC). Cases were stratified by sex, age group (15–34, 35–49, ≥50 years) and stage at diagnosis (early: stage I/II; late: stage III/IV).

Results:

Melanoma incidence increased overall, driven predominantly by rising rates in older adults and males. In contrast, young adults (15–34 years) demonstrated a distinct pattern: incidence was consistently higher in females than males (mean EASR 8.45 vs 4.41 per 100,000), with a modest but significant increase in females (APC 1.65%, $p<0.05$) and overall (APC 1.05%, $p<0.05$), while rates in males remained stable.

Across all age groups, early-stage melanoma accounted for the majority of diagnoses and increased over time (26.4 to 31.1 per 100,000, 2014–2023). Late-stage incidence remained comparatively low and stable (3.7–5.2 per 100,000), but was consistently higher in males.

A strong age gradient persisted, with individuals ≥50 years demonstrating the highest incidence of both early- and late-stage disease (early-stage up to 56.4; late-stage up to 9.6 per 100,000). The 35–49 group showed intermediate rates, while young adults had low absolute incidence, with stable early-stage rates (~5–7 per 100,000) and minimal late-stage disease (<1 per 100,000).

Conclusion:

Melanoma incidence in Ireland is rising, driven by increasing detection of early-stage disease, reflecting both a true increase in incidence and enhanced diagnostic awareness. However, marked age- and sex-specific disparities persist. Young adults display a distinct epidemiological pattern, with higher incidence in females and stable rates in males, consistent with differing behavioural risk exposures such as intermittent ultraviolet exposure and tanning practices. In contrast, advanced disease remains disproportionately concentrated in older males.

Although absolute incidence in young adults is low, the long-term survivorship burden is significant and growing. These findings identify a critical and potentially modifiable window for intervention. Targeted, age- and sex-specific prevention and early detection strategies are urgently required to alter the trajectory of melanoma incidence. This study provides the first long-term population-based characterisation of melanoma trends in young adults in Ireland and establishes a clear evidence base to inform national policy and prevention efforts.

P-19

To FNA or not? Diagnostic Accuracy and False Negative Rates in Malignant Melanoma: A Six-Year Retrospective Analysis

P Cooper, A Lee, M Dempsey, P Ormond

Department of Dermatology, St James's Hospital, Dublin

Background:

Fine-needle aspiration (FNA) is a common first-line diagnostic tool for suspicious lymphadenopathy in melanoma. However, its reliability in "ruling out" malignancy remains a point of clinical debate. This study evaluates the diagnostic accuracy of FNA and the clinical consequences of false-negative results within an Irish tertiary referral centre.

Methods:

A retrospective review of 67 patients with suspected metastatic malignant melanoma who underwent FNA was conducted over a six-year period (March 2020 – February 2026). Initial FNA results were compared against subsequent reference standards, including core needle biopsy (CNB), sentinel lymph node biopsy (SLNB), or repeat FNA sampling. Statistical analysis determined sensitivity, specificity, and predictive values. Clinical impact was assessed by measuring diagnostic delays and identifying changes in AJCC staging.

Results:

Of the 67 patients, 56.7% (n = 38) were True Positives and 26.9% (n = 18) were True Negatives. 4.5% (n = 3) were inconclusive: (n=1) suspicious and (n = 2) non-diagnostic. 11.9% (n = 8) were identified as False Negatives (FN). Statistical analysis revealed a Sensitivity of 82.6%, a Positive Predictive Value (PPV) of 100%, and a Negative Predictive Value (NPV) of 69.2%. In the FN cohort, the median delay to definitive diagnosis of metastatic disease was 37 days (range 0–108 days). These diagnostic delays resulted in documented disease upstaging in (n = 3) patients (37.5% of the FN cohort), necessitating a transition from localised surgical management to systemic immunotherapy.

Conclusions:

While a positive FNA is 100% predictive of melanoma, an NPV of 69.2% indicates that nearly one in three non-positive results (negative, suspicious, or non-diagnostic) in this cohort harboured metastatic disease which led to significant clinical delays in 7.4% (n = 5) of patients. In our experience, FNA should be utilised strictly as a "rule-in" tool. Any result other than "Malignant" in the presence of clinical suspicion should trigger immediate core needle biopsy to prevent staging delays and optimise therapeutic outcomes.

P-20

Diagnostic accuracy of teledermoscopy in melanoma detection: A comparative study

Melissa Crous, Berbie Bryne, Evelyn power, Aoife Walsh, Sinead Field

University Hospital Limerick

Introduction:

Skin cancer rates including melanoma are increasing nationally. The teledermoscopy service is a targeted skin cancer triage service which aims to enhance appropriate utilisation of our limited face to face consultations by identifying patients with lesion that are time sensitive.

Aim:

Evaluate concordance of clinic consultant principle diagnosis and teledermoscopy consultant diagnosis.

Methods:

A sensitivity analysis investigated concordance of teledermoscopy and clinical consultant assessment of 110 lesions categorised as benign, suspicious, pre-malignant and malignant using a Teledermoscopy software Programme. In total, 109 participants took part in the study of which the 56% were female and the average age was 53.6 (SD =17.5). The most common location of the lesion was the trunk (n=44, 40%) and more than half of patient (n =62, 56%) had melanocytic lesion of which 82% was benign.

Results:

The Kappa value between the clinic consultant and the teledermoscopy consultant was moderate (K=060, 95% CI 0.42 -0.79). Both classified 75%(n=82) as benign, 3.66%(n=4) as suspicious and 8.25%(n=9) as malignant yielding a 87% agreement. The sensitivity of the data was 73.68% and the specificity 91.11%. The contingency table demonstrated high concordance between the two extremes of benign and malignant lesion. There was no misclassification of malignant lesions. Discrepancy was seen in the suspicious category where biopsies is often done for diagnostic uncertainty.

Conclusion:

The comparable results between teledermoscopy and in person assessment, supports its reliable modality and a promising direction for future dermatological care.

P-21

The use of Electrochemotherapy as an adjunct for cutaneous metastases of melanoma in the era of immunotherapy

G Fenn[1], L O'Birchenough[1], K Russell-Ryan[2], A J P Clover[1]

1. Plastic and Reconstructive Surgery Department, Cork University Hospital, Wilton, Cork
2. Mirai Medical, Oranmore, Galway

Background:
The treatment for cutaneous metastatic melanoma was significantly improved with the advancements in immunotherapy, however, there remains a cohort of patients who develop cutaneous metastases despite optimal systemic and locoregional control. Electrochemotherapy (ECT) is well established as a treatment for cutaneous metastatic melanoma with high therapeutic response. ECT can be used in patients with disseminated disease and remains a useful treatment option for loco regional control even in the palliative setting

Methods:
This is a retrospective review of five years of cases from Cork University Hospital, currently the only centre offering this treatment nationally. Cases were accrued both locally and nationally after MDT discussion and optimisation of other options. Response rates per lesion and per patient were assessed using RESIST Criteria.

Results:
27 patients (211 lesions) were treated with ECT. Lesions with a minimum 3-month follow-up (n=146 lesions; n=19 patients) were included. 104 lesions across 16 ECT-naïve patients and 42 in 3 patients who received multiple treatments. 17 patients were treated under GA, and 2 patients under LA

In ECT-naïve lesions, the overall response rate (ORR) at 3 months was 88.4%; 74% (n=77) Complete Response (CR) and 14.4% (n=15) Partial Response (PR). Responses were durable, with CR rates of 79% at 6 months and 90% at 12 months among evaluable lesions. Lesions with partial response or progression were managed with excision or repeat ECT.

ECT is highly effective in patients who are retreated with ECT, with 97.6% ORR at 3 months (CR=30; PR=11). Responses remained durable over time, with CR maintained in all evaluable lesions beyond 6 months, including follow-up to 5 years.

Conclusion:
ECT remains an excellent option for locoregional control in patients with progressive cutaneous metastases where other standard treatments have failed. ECT provides durable control on occasion or often palliation in patients with symptomatic lesions.

	3M	6M	12M	18M	24M	30 M	36M	48M	60M
CR	77 74%	50 79%	38 90%	31 100%	31 100%	17 100%	7 100%	7 100%	7 100%
PR	15 14.4%	6 10%	4 10%	0	0	0	0	0	0
DP	4 3.9%	0	0	0	0	0	0	0	0
UTA	1 1%	0	0	0	0	0	0	0	0
DNA	7 6.7%	7 11%	0	0	0	0	0	0	0
Available #	104	63	42	31	31	17	7	7	7
W/D	0	23	44	55	55	62	62	62	62

P-22

Can we get the diagnosis right with written clinical information alone? Diagnostic concordance from referral letter to face-to-face dermatology review in a pigmented lesion clinic

C Keegan, G Callaghan, M Roche, C Feighery, N Kearney

Our Lady of Lourdes Hospital, Drogheda

Aim:

Dermatology triage frequently relies on written referral information despite being a visual specialty. Inaccurate referral impressions affect the prioritisation of patients most in need. We aimed to evaluate concordance between consultant diagnostic impression based on referral letters, subsequent clinical assessment and histopathologic diagnosis in a pigmented lesion clinic.

Methods:

A prospective cross-sectional study of referrals to a pigmented lesion clinic was conducted over a two-month period. Consultant diagnostic impression based on the referral letter (referral impression) was documented prior to face-to-face review and compared with the diagnosis following examination (clinical impression). For lesions that underwent biopsy or excision, the clinical impression was compared with the histopathological diagnosis.

Results:

A total of 265 patients were included. Five lesions had resolved at clinic review and were excluded from analysis. Among the remaining 260 cases, concordance between referral and clinical impression was observed in 155 cases (59.62%). Forty-nine patients (18%) proceeded to biopsy or excision. Results at the time of analysis were available for 48 lesions. Concordance between clinical and histological diagnosis was observed in 31 cases (64.58%).

Conclusion:

Concordance between referral impression and clinical impression was modest, highlighting the diagnostic complexity of pigmented lesions and limited information which can be provided using written information alone. These findings highlight the need for improvements in referral quality. Primary care education and the implementation of photograph attachments may be useful strategies to improve referral quality, enhance triage accuracy and optimise service utilisation.

P-23

Oligometastatic recurrent melanoma in a renal transplant patient on immune-suppressive therapy – the balance for graft preservation

Gabmen Kennedy, Sangeen Jabbar, Criostoir O Suilleabhan, Sean Leavey, Paula Calvert

1. *Dept of Medical Oncology, University Hospital Waterford (UHW)*
2. *Hepato-Pancreatico Biliary surgery, Mercy Hospital Cork*
3. *Nephrology Dept, UHW*

Introduction:

Systemic therapy for Malignant Melanoma has been revolutionised by the advent of immunotherapy. Organ transplant recipients have an increased risk of cancer, rising from 5% at 5 years to over 25% at 20 years due to long-term immunosuppressive therapy. Managing locally-advanced or metastatic melanoma in this patient group involves a balance between the risk of graft rejection related to the use of immunotherapy, versus the risk of death from progressing melanoma.

Methods:

We report the case of a 63 year old male recipient of a renal transplant, secondary to IgA nephropathy in 1988. He had subsequent diagnosis of multiple different cancers including prostate cancer (treated with brachytherapy), multiple cutaneous basal and squamous cell carcinoma (resected), stage 2b malignant melanoma excised from the right cheek in February 2018, and incidental discovery of a renal cell carcinoma-in the native kidney- during staging for the melanoma -managed by nephrectomy. His long-term immunosuppressive therapy was with Cyclosporin due to Sirolimus intolerance.

He has had 2 oligometastatic melanoma recurrences less than 1 year apart, the first being a 30mm metastatic melanoma lung deposit in March 2025 for which he had right lower lobectomy, BRAF negative. The second recurrence was in January 2026 where biopsy proved a rare site of metastatic melanoma in the gallbladder, for which he underwent cholecystectomy. For each recurrence, he opted for surgical management of metastatic disease, to avoid potential renal transplant rejection, related to immunotherapy.

Conclusion:

Transplant rejection and a return to dialysis is observed in 40-50% of renal transplant recipients who receive immunotherapy for recurrent cancer. This case highlights the entity of oligometastatic recurrent melanoma and the role of surgical management in delaying or avoiding Immunotherapy in this group of patients. It emphasises the need for multi-disciplinary discussions between nephrology, medical and surgical oncology, and patients on immunosuppressive therapy for organ transplantation, to facilitate an informed decision about treatment options.

P-24

The Bread and Mould Model: A Medical Student–Developed Educational Innovation for Teaching Melanoma Excisional Margins

Heather Croghan-Miksch (medical student), Kelsey O'Donnell, Christine S Quinlan

UCD student and affiliated with MMUH

Background:

Determining appropriate excisional margins for cutaneous melanoma is a challenging aspect of surgical oncology, particularly for lesions with a Breslow thickness of 1–2 mm, where oncological clearance must be balanced with preservation of function and cosmesis. Understanding microscopic tumour extension beyond the visible lesion can be difficult for patients, medical students, and clinicians. As a medical student involved in melanoma clinics and surgical teaching, I observed this gap, highlighting the need for clear, accessible educational tools to support patient counselling and clinical education

Methods:

The Bread and Mould Model was developed as a novel, low-cost educational tool to illustrate the rationale for wide local excision margins. A slice of bread represents skin and underlying tissue, visible mould the tumour, and invisible microscopic spores subclinical spread. A complementary graphic was created to enhance clarity and reproducibility. The model was designed to support teaching and communication with patients, medical students, and clinicians through a clear and memorable visual metaphor for tumour spread and surgical margin planning.

Results:

The model was presented to senior clinicians, who evaluated its educational value positively. Its innovation was recognised with the inaugural Jose Varas UCD Student Prize in Plastic and Reconstructive Surgery, awarded for distinction in medical student–led educational innovation.

Conclusion:

The Bread and Mould Model is a novel medical student–developed educational innovation that enhances understanding of melanoma excision margins. By transforming an abstract concept into a clear and accessible visual representation, it has strong potential to improve melanoma education, support informed consent, and strengthen clinical communication. Future implementation and evaluation will assess its impact in clinical and teaching settings.

P-25

Primary Bladder Melanoma: A Case Report

Leya Motala[1], Eilís Ní Chinnéide[1], Dearbhail Ni Chaoimh[2], Aisha Saleem[3], Shamin Gholami Noudeh[4], Rizwan Ahmad[4], Jaipreet Singh[1]

1. *Histopathology Department, Connolly Hospital Blanchardstown, Dublin*
2. *Medical Oncology Department, Beaumont Hospital, Dublin*
3. *Urology Department, Connolly Hospital Blanchardstown, Dublin*
4. *Dermatology Department, Connolly Hospital Blanchardstown, Dublin*

Background:

Primary bladder melanoma is exceedingly rare with fewer than 50 cases reported, resulting in significant diagnostic and therapeutic challenges. Determining whether it is a primary or metastatic lesion poses further difficulties, especially considering that the primary lesion may have regressed by the time of diagnosis.

Bladder melanoma is an aggressive tumour with frequent metastasis and dismal survival. Histological assessment with positive immunohistochemical (IHC) staining for melanocyte markers is essential to confirm the diagnosis.

This report details a case of primary bladder melanoma.

Case History:

An elderly female presented with macroscopic haematuria and a history of recurrent urinary tract infections over the past 4 months. An admission ultrasound scan revealed a solid intravesical mass, and cystoscopy confirmed a massive, invasive-appearing tumour. Histological examination of tumour chippings demonstrated a high grade invasive urothelial carcinoma (stage pT2).

Haematuria recurred and tumour coagulation was performed. Histology of new chippings showed sheets of pleomorphic cells with focal pigment and muscle invasion. IHC staining was positive for melanocytic markers and negative for cytokeratins and lymphoid markers. A new diagnosis of primary bladder melanoma was made in the absence of alternative primary sites. A mutation panel was requested.

CT scan revealed sacral and possible further metastases. Medical oncology review recommended consideration for systemic therapy pending BRAF results. Unfortunately, no targetable mutation was detected. The patient rapidly deteriorated and demised before further treatment.

Conclusion:

Primary bladder melanoma is an exceptionally rare and aggressive malignancy with frequent metastasis and poor survival. A greater database of case reports and further research are needed to enhance outcomes for patients with this dreadful diagnosis.

P-26

The Rare Collision of Melanocytic Neoplasia with Dermatofibroma

Leya Motala[1], Eilís Ní Chinnéide[1], Shamin Gholami Noudeh[2], Rizwan Ahmad[2], Jaipreet Singh[1]

1. Histopathology Department, Connolly Hospital Blanchardstown, Dublin
2. Dermatology Department, Connolly Hospital Blanchardstown, Dublin

Background:

Collision lesions are an uncommon phenomenon characterised by histologically distinct, spatially independent lesions co-occurring at the same site. Collision lesions involving dermatofibroma (DF) and melanocytic lesions are exceedingly rarely reported in the literature, with only 18 cases documented to date.

The proximity of the lesions and potential similarities in morphology, considering their wide range of histological appearances, pose diagnostic challenges. DF-melanocytic collision lesions may appear to be single, deeply invasive melanocytic neoplasms, or the fibrohistiocytic proliferation may mask melanocytic atypia.

Awareness of the association between the 2 entities will aid their accurate diagnosis. This case series describes 5 cases of such collision lesions.

Methods:

A search of the Connolly Hospital Blanchardstown laboratory information system, which was implemented in January 2008, retrieved 5 DF-melanocytic collision lesions.

Results:

Three male and two female patients ranging from 36 to 60 years of age were identified. The clinical diagnosis was either uncertain, or varied between DF, dysplastic naevus, and basal cell carcinoma as single entities. Histological analysis revealed collision lesions involving DF or cellular DF with benign junctional, compound or intradermal naevi, and 1 with a dysplastic naevus. All 5 lesions occurred on the upper limbs. Interestingly, the upper limb was the most commonly affected site amongst the cases previously reported in the literature.

Conclusion:

DF-melanocytic collision lesions pose diagnostic challenges, potentially mimicking malignancy, or masking histologic atypia. Due to their rarity, there remains much to be learned regarding their presentation, dermoscopic findings, and whether the entities share a causal relationship. Further research and additional case reports are needed to fully elucidate the nature of such collision lesions.

P-27

Development of a National Clinician Approved Digital Platform for Melanoma Patient Education in Ireland

K O'Donnell[1], S Potter[2], N Christodoules[2], K Curtin[3], M Staunton[3], X Viega[4], U Kearns[4], D Ryan[4]

1. *Department of Oncology, Mater Misericordiae University Hospital, Dublin*
2. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
3. *Melanoma Support Ireland*
4. *MyPatientSpace*

Aim/Background:

Melanoma incidence in Ireland is increasing, creating a growing need for accessible, reliable, and standardised patient education. Information provision varies across services, and patients frequently access unregulated online resources, contributing to confusion and anxiety. This project aimed to develop a national, clinician-approved digital platform to provide consistent, evidence-based melanoma information tailored to the Irish healthcare context, with planned launch in May 2026.

Methods:

A multidisciplinary group of Irish melanoma clinicians, nurses, patients and developers codesigned a secure web based app via MyPatientSpace. Content was informed by national guidance, international best practice, and expert consensus. A user-centred design approach was employed, incorporating iterative feedback from patients and healthcare professionals during pre-production testing. The platform was designed to complement clinical consultations and includes structured education, treatment pathway information, self-management advice, and signposting to Irish-based support services.

Results:

The platform provides centralised, clinician-validated melanoma information specific to the Irish setting. Key features include stage-specific educational content, treatment modalities, and management of treatment-related side effects. It also integrates resources to support psychosocial wellbeing and survivorship. Pre-launch user feedback demonstrates high acceptability, improved patient understanding, and increased confidence in navigating diagnosis and treatment. Clinicians report enhanced consistency in information delivery and identify the platform as a valuable adjunct to routine care.

Conclusion:

This national digital platform represents an innovative approach to melanoma patient education in Ireland, addressing gaps in consistency and accessibility of information. It supports patient engagement and informed decision-making while complementing existing clinical services. Following its launch in May 2026, formal evaluation will assess its impact on patient experience, knowledge, and integration into melanoma care pathways, with potential for scalability across oncology services.

P-28

Immune-related endocrine adverse events with ipilimumab and nivolumab in melanoma patients – St Vincent's Private Hospital experience

Jorge Reis[1], Jane Martin[1], Nuno Silva[1], John Crown[2]

1. *Pharmacy Department, St Vincent's Private Hospital, Dublin, Ireland*
2. *Department of Medical Oncology, St Vincent's University Hospital, Dublin, Ireland*

Background:

Combination immunotherapy with ipilimumab and nivolumab significantly improves survival in advanced melanoma but is associated with high incidence of immune-related adverse events (irAEs), particularly endocrine toxicities. Real-world data on the frequency, timing and pattern of thyroid and adrenal dysfunction during combination therapy and subsequent nivolumab maintenance remain limited.

Methods:

Retrospective study of melanoma patients treated with ipilimumab and nivolumab between January 2020 and December 2025. Patients with prior immunotherapy or pre-existing thyroid dysfunction were excluded. Thyroid (TSH) and adrenal (cortisol) function were assessed. Outcomes were analysed by sex, age and treatment regimen [Ipilimumab 3mg/Kg +Nivolumab 1mg/Kg (IPI3/NIVO1) versus Ipilimumab 1mg/Kg +Nivolumab 3mg/Kg (IPI 1/NIVO 3)]

Results:

Eighty-four patients received combination therapy; 65 met inclusion criteria. Endocrine abnormalities occurred in 46 patients (73%). Isolated thyroid derangement occurred in 12.3%, isolated cortisol derangement in 26.2%, and combined thyroid and adrenal dysfunction in 32.3%. Women showed slightly higher rates of thyroid-only abnormalities, while men more frequently developed isolated cortisol derangement; combined dysfunction occurred at similar rates across genders. Endocrine toxicity varied by age, with the highest incidence in women <55 years (85.7%) and men aged 56–75 years (89.5%). Mean time to first thyroid abnormality was 79.4 days (range 14–292), while cortisol abnormalities emerged later (mean 131.2 days; range 18–793). Patients receiving IPI3+NIVO1 had a higher incidence of endocrine toxicity (84.2%) than those treated with IPI1+NIVO3 (57.1%).

Conclusion:

In our observational study, endocrine irAEs were common, frequently involved both thyroid and adrenal axes, and often occurred early for thyroid dysfunction and later for adrenal dysfunction. Higher toxicity was observed with the standard IPI3+NIVO1 regimen compared with the flipped IPI1+NIVO3 regimen. These findings highlight the need for structured and prolonged endocrine monitoring during induction and nivolumab maintenance.

P-29

Don't Let It Get Under Your Skin: An Evaluation of Sun Safety Awareness and Beauty-Driven UV Exposure in the Irish Education System

Roney A, Abdallah L, Abdallah L, Chanders L

Trinity College

Background:

Ireland possesses one of Europe's highest rates of skin cancer, yet sun safety education is not currently a mandatory component of the national school curriculum. This study, "Don't Let It Get Under Your Skin," investigates critical gaps in sun safety awareness and the rising influence of "unsafe" beauty trends - including tanning oils, sunbeds, and UV nail lamps, among Irish youth and the wider community. The objective was to measure cross-generational knowledge and advocate for the integration of structured sun safety education into the Social, Personal and Health Education (SPHE) curriculum.

Method:

A mixed-methods study employed stratified sampling across primary schools, secondary schools, school staff, and active retirement groups in Carlow. Quantitative data was collected via digital and paper-based surveys (N=386). Qualitative interviews and open-ended queries were used to explore the impact of beauty standards and appearance-driven UV behaviours.

Results:

Significant deficits in health literacy were identified: 46.4% of all participants reported never being taught sun safety, and 51% of secondary students recalled no such education in school. Knowledge of UV levels was critically low, with only 14.1% of students understanding their significance. Behavioural protection was inconsistent; only 28.8% of participants applied sunscreen daily, while reapplication rates were just 32%. Misconceptions were widespread: 47.8% of students incorrectly believed sunburn is impossible on cloudy days, and 47% were uncertain regarding the safety of UV nail lamps or tanning beds. Qualitative findings highlighted "appearance pressure," with 56% of students reporting they feel "prettier" when tanned.

Conclusion:

Widespread misconceptions and a pronounced "knowledge-behaviour gap" exist across all age groups in Ireland. The findings demonstrate that current informal education is insufficient to counter social media-driven beauty trends. There is an urgent requirement for a structured, national sun safety curriculum to foster long-term protective habits and reduce the incidence of preventable malignant melanoma and other skin cancers.

P-30

Early real-world experience with adjuvant pembrolizumab for resected stage IIB/IIC melanoma following reimbursement in Ireland: a single-centre series

Arifa Salim[1], Konrad Timon[1], Louise Fleming[2], Aoife Lally[2], Sarah E Lochrin[1]

1. *Department of Medical Oncology, St Vincent's University Hospital, D04 T6F4 Dublin, Ireland*
2. *Department of Dermatology, St Vincent's University Hospital, D04 T6F4 Dublin, Ireland*

Background:

Adjuvant pembrolizumab has shown significant RFS benefit in stage IIB/C melanoma and was reimbursed in Ireland in Dec 2024 based on the KEYNOTE-716 trial. At St Vincent's University Hospital, approximately 10–12 patients are diagnosed annually. This study describes early real-world outcomes following reimbursement.

Methods:

We retrospectively reviewed consecutive patients with resected stage IIB/C melanoma who started adjuvant pembrolizumab (200 mg Q3W or 400 mg Q6W) at St Vincent's University Hospital from 1 Dec 2024 to 31 Dec 2025. Demographics, clinicopathology, treatment, irAEs, and recurrence outcomes were collected; RFS was calculated from treatment start to recurrence or last follow-up

Results:

Between Dec 2024 and Dec 2025, five patients with stage IIC melanoma (no stage IIB cases) received adjuvant pembrolizumab. Median age was 72 years (range 61-86) and 60% were male. Median Breslow thickness was 5.8 mm; all tumours were ulcerated. BRAF V600 mutations were present in 40% and NRAS mutations in 20% . All had negative SLNB. Median time from SLNB to therapy was 11 weeks (range 5-21)

Three patients (60%) experienced irAEs; two grade 1-2 and one grade 3 (hepatitis) event. One patient discontinued therapy due to toxicity; four remain on treatment at data cut-off.

At median follow-up of 6.2 months, one patient developed recurrent metastatic disease after discontinuation and died. The remaining four have no recurrence and remain on pembrolizumab, with a median of 6 treatments (range 1-8) received to date.

Conclusion:

This single-centre experience suggests adjuvant pembrolizumab is feasible and generally well tolerated in routine Irish practice. One recurrence and melanoma-related death occurred following treatment discontinuation due to toxicity. Interpretation is limited by small sample size and lack of data on treatment uptake/refusal. Longer follow-up is required to assess recurrence-free survival, completion rates, and long-term safety. The observed toxicity profile was consistent with prior studies and underscores the need to balance immune-related risks against the established RFS benefit in the absence of a confirmed overall survival advantage.

P-31

Discovery and biological evaluation of novel cysteinyl leukotriene receptor 1 antagonists for the treatment of uveal melanoma

Billy J Brennan[1], Alina Qaisar[1], Camilla M Fontana[2,3], Lasse D Jensen[4], Breandán N Kennedy[2,3], Niamh M O'Boyle[1]

1. *School of Pharmacy and Pharmaceutical Sciences, Panoz Institute and Trinity Biomedical Sciences Institute, The University of Dublin Trinity College*
2. *UCD Conway Institute of Biomolecular and Biomedical Research, University College Dublin*
3. *UCD School of Biomolecular and Biomedical Science, University College Dublin*
4. *BioReperia AB, Wahlbecksgatan, 582 16 Linköping, Sweden*

Background:

Uveal melanoma (UM), the most common primary intraocular malignancy in adults, has high metastatic potential. Therapies available for metastatic disease are limited. Previous research has correlated high cysteinyl leukotriene receptor 1 (CysLTR1) expression with low UM patient survival and has shown CysLTR involvement in UM clinical features and angiogenic pathways. CysLTR1 antagonists have been shown to inhibit UM proliferation in vitro and in zebrafish xenograft models. Here, we report the discovery of novel CysLTR1 antagonists and their biological evaluation for UM treatment.

Methods:

Ligand-based virtual screening was utilised to identify CysLTR1 hits. Four commercially available hits (M1, M2, M3, M6) were tested for their ability to inhibit leukotriene D4-induced calcium ion mobilisation in CHO cells transfected with CysLTR1. Two hits (M1, M6) were tested for lethal and non-lethal toxicities in zebrafish. The antiangiogenic activity of M1 and M6 was evaluated in zebrafish, focusing on intersegmental vessel (ISV) and subintestinal vessel (SIV) formation. The antiproliferative activity of the four hits was evaluated in vitro in OMM2.5, a metastatic UM cell line. OMM2.5 cells treated with the hits were imaged every 6 hours with an Incucyte® system. Images were quantified using Incucyte® analysis software. After 96 hours incubation, an MTT endpoint assay was conducted.

Results:

Of the four hits selected for receptor-binding studies, M6 significantly inhibited control agonist response, M1 was a moderate inhibitor while two hits (M2 and M3) did not significantly inhibit CysLTR1. In zebrafish, M1 and M6 exhibited no significant lethal toxicity and minimal non-lethal toxicities. M1 and M6 demonstrated significant inhibition of ISV length. M6 reduced the average number of SIV sprouts and the average SIV area. In vitro, M1 and M6 showed statistically significant inhibition of OMM2.5 proliferation.

Conclusion:

This study describes the discovery of novel CysLTR1 antagonists with promising biological activity in the context of UM treatment. Future directions will include medicinal chemistry approaches to hit optimisation, combined with further biological evaluation.

P-32

Extracellular vesicle-associated LRG1 in melanoma-microenvironment crosstalk

Natasha Christodoulides[1,2,3,4,5], Yashna Chabria[2,3,4], Stephanie Bollard[1,5], Lorraine O'Driscoll[2,3,4], Shirley Potter[1,4,5]

1. *Department of Plastic and Reconstructive Surgery, St James's Hospital, Dublin*
2. *Trinity St James's Cancer Institute*
3. *Royal College of Surgeons in Ireland (RCSI)*
4. *National Cancer Registry Ireland (NCRI)*
5. *School of Medicine, Trinity College Dublin*

Background:
Melanoma incidence continues to rise globally, with emerging evidence of distinct epidemiological patterns in younger populations. Young adults represent a unique cohort with differing risk exposures, behavioural factors and long-term survival implications, yet remain under-explored in population-level analysis. We examined temporal trends in melanoma incidence in Ireland, with a particular focus on young adult populations.

Methods:
Population-based melanoma incidence data from the National Cancer Registry of Ireland (NCRI) were analysed using European age-standardised rates (EASR) from 1994 to 2023. Temporal trends were assessed using Joinpoint regression to estimate annual percentage change (APC). Cases were stratified by sex, age group (15–34, 35–49, ≥50 years) and stage at diagnosis (early: stage I/II; late: stage III/IV).

Results:
Melanoma incidence increased overall, driven predominantly by rising rates in older adults and males. In contrast, young adults (15–34 years) demonstrated a distinct pattern: incidence was consistently higher in females than males (mean EASR 8.45 vs 4.41 per 100,000), with a modest but significant increase in females (APC 1.65%, $p<0.05$) and overall (APC 1.05%, $p<0.05$), while rates in males remained stable.

Across all age groups, early-stage melanoma accounted for the majority of diagnoses and increased over time (26.4 to 31.1 per 100,000, 2014–2023). Late-stage incidence remained comparatively low and stable (3.7–5.2 per 100,000), but was consistently higher in males.

A strong age gradient persisted, with individuals ≥50 years demonstrating the highest incidence of both early- and late-stage disease (early-stage up to 56.4; late-stage up to 9.6 per 100,000). The 35–49 group showed intermediate rates, while young adults had low absolute incidence, with stable early-stage rates (~5–7 per 100,000) and minimal late-stage disease (<1 per 100,000).

Conclusion:
Melanoma incidence in Ireland is rising, driven by increasing detection of early-stage disease, reflecting both a true increase in incidence and enhanced diagnostic awareness. However, marked age- and sex-specific disparities persist. Young adults display a distinct epidemiological pattern, with higher incidence in females and stable rates in males, consistent with differing behavioural risk exposures such as intermittent ultraviolet exposure and tanning practices. In contrast, advanced disease remains disproportionately concentrated in older males.

Although absolute incidence in young adults is low, the long-term survivorship burden is significant and growing. These findings identify a critical and potentially modifiable window for intervention. Targeted, age- and sex-specific prevention and early detection strategies are urgently required to alter the trajectory of melanoma incidence. This study provides the first long-term population-based characterisation of melanoma trends in young adults in Ireland and establishes a clear evidence base to inform national policy and prevention efforts.

P-33

Proteomic Identification of a Metastasis-Associated Protein Signature in Large Extracellular Vesicles Derived from Human Metastatic Melanoma Cells

Xuemei Duan[1], Kieran Wynne[1,3,5], Shirley Potter[2,3,4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology, School of Medicine, University College Dublin, Dublin, Ireland*
2. *School of Medicine, University College Dublin, Dublin, Ireland*
3. *The Conway Institute, University College Dublin, Ireland*
4. *St James's Hospital, Dublin, Ireland*
5. *Systems Biology Ireland, University College Dublin, Belfield, Dublin 4, Ireland*

Background:

Extracellular vesicles (EVs), comprising proteins, lipids, and nucleic acids, are key mediators of intercellular communication across tissues and play important roles in melanoma progression. Based on size, EVs are broadly classified into small EVs (sEVs, <200 nm) and large EVs (lEVs, >200 nm). However, the specific contributions of EV subpopulations to melanoma metastasis remain incompletely understood. In this study, we isolated and characterised EV subtypes from the melanoma cell line FM55 to investigate their roles in tumour progression.

Methods:

EVs were isolated by ultracentrifugation of conditioned medium of melanoma cells derived from a primary tumor (designated FM55-P) and from a tumor metastasis (designated FM55-M) of the same melanoma patient. Vesicles were further separated into sEVs and lEVs. Protein profiles were analysed by SDS-PAGE followed by Ponceau S staining. Differentially-expressed protein bands were excised and subjected to liquid chromatography–mass spectrometry (LC–MS) for constituent protein identification.

Results:

Ponceau S staining revealed a prominent and distinct 30 kDA-protein band that was detected only in the lEV fraction of FM55-M cells. LC–MS analysis identified multiple proteins, including the classically-associated proteins CD63, CD9, C81, but also high differentially expressed lEV proteins including ATP5FC1, PHB1, HSD17B13, SLC25A5 and MLEC. These proteins are associated with mitochondrial metabolism, lipid metabolic processes, chaperone-mediated protein folding, and vesicle-associated intracellular trafficking—processes closely linked to tumour progression and metastasis. Notably, many identified proteins are involved in intracellular transport and membrane dynamics, suggesting that lEVs may carry functionally relevant cargo that contributes to metastatic behaviour. This enrichment was not observed in FM55-P-derived EVs, indicating a metastasis-specific alteration in EV composition.

Conclusion:

This study identifies a previously-unrecognised protein signature enriched in large EVs derived from metastatic melanoma cells, suggesting a potential role for lEVs in promoting melanoma metastasis. These results provide new insights into EV heterogeneity in human melanoma and lay the foundation for future studies exploring metastasis-associated EV biomarkers and therapeutic targets.

P-34

Receptor Tyrosine Kinase-like Orphan Receptor 1 (ROR1) inhibitor ARI-1 modulates the growth of uveal melanoma cells and causes cell death via the ferroptosis pathway

Niamh Duggan[1], Eve O'Reilly[1,2], Toni Oladimeji[1,2], Ellie Swords[1,2], Camilla Fontana[1,2], Narod Kebabci[1,3], Colm Ryan[1,4], Nora Rauch[5], Kieran Wynne[4,5], John Crown[6], Breandán Kennedy[1,2]

1. *UCD Conway Institute, University College Dublin, D04 V1W8 Dublin, Ireland*
2. *UCD School of Biomolecular and Biomedical Science, University College Dublin, D04 V1W8 Dublin, Ireland*
3. *UCD School of Computer Science, University College Dublin, D04 V1W8 Dublin, Ireland*
4. *Systems Biology Ireland, School of Medicine, University College Dublin, Belfield Dublin 4, Ireland*
5. *UCD School of Medicine, University College Dublin, D04 V1W8 Dublin, Ireland*
6. *Department of Medical Oncology, St Vincent's University Hospital, D04 T6F4 Dublin, Ireland*

Aim/Background:

Uveal melanoma (UM) is the most common primary intraocular malignancy in adults. Although local tumour control has improved, survival remains poor because of the high rate of metastatic spread, particularly to the liver. More effective therapies for metastatic UM (mUM) are urgently needed. CRISPR screening identified receptor tyrosine kinase-like orphan receptor 1 (ROR1) as a candidate therapeutic target. ROR1 is aberrantly expressed in several cancers and signals through pathways including MAPK/ERK and PI3K/AKT, which are linked to tumour progression. ARI-1, a therapeutic targeting ROR1, has shown anti-tumour activity in other cancers, but has not been evaluated in UM. This study assessed the effects of ARI-1 in mUM cells.

Methods:

ROR1 expression in UM cells was assessed by qPCR. The effects of ARI-1 on cell proliferation and survival were evaluated over 96 hours using Incucyte live-cell imaging and MTT assays. Proteomic analysis was performed following 6-hour and 24-hour ARI-1 exposure, and differential protein abundance with pathway enrichment was used to identify affected signalling networks.

Results:

qPCR confirmed high ROR1 expression in OMM2.5 cells. ARI-1 treatment inhibited cell proliferation and survival over 96 hours, with an IC50 of 36 µM. Proteomic analysis at 6 and 24 hours showed significant changes consistent with suppression of canonical ROR1-associated signalling pathways. Several ferroptosis-related proteins were also altered, suggesting ferroptosis as a possible mechanism of ARI-1 action.

Conclusions:

These findings identify ROR1 as a relevant therapeutic target in mUM and show that ARI-1 reduces OMM2.5 cell proliferation and survival. The proteomic data support inhibition of ROR1-associated signalling and suggest a possible ferroptosis-related mechanism. Together, these results highlight ARI-1 as a promising candidate for further investigation in metastatic UM.

P-35

Cannabinoid receptor 2 inverse agonisms as a novel therapeutic strategy against metastatic uveal melanoma

Camilla Maria Fontana[1,2], Jessica Spratt[1], Marianna Schwarz[1,3], Niamh Duggan[1,2], Breandán Kennedy[1,2]

1. *School of Biomolecular and Biomedical Science, University College Dublin*
2. *Conway Institute for Biomolecular and Biomedical Research, University College Dublin*
3. *Amsterdam University College, Amsterdam, Netherlands*

Background:

Uveal melanoma (UM) is the most common primary intraocular malignancy, with Ireland reporting the highest incidence worldwide. Despite excellent local control, about 50% of patients develop metastases within 5–7 years of diagnosis, resulting in a median survival of only 13 months. Available systemic therapies have limited efficacy, as both chemotherapy and immune checkpoint inhibitors show poor response rates, and current immunotherapy options extend median survival only up to 22 months.

Cannabinoid receptors demonstrate a complex role in cancer biology. While their expression correlates with improved survival in some cancers (e.g., lung), overexpression is associated with poor prognosis in others (e.g., prostate, pancreatic, colorectal, and breast). This study investigates the role of cannabinoid receptors in UM and explores the therapeutic potential of their modulation in metastatic disease.

Methods:

The bioactivity of CB1 and CB2 agonists and inverse agonists was assessed using long-term proliferation assays in primary (Mel270) and metastatic (OMM2.5, MM28) UM cell lines via the Incucyte Live Cell Analysis System. CB2 inverse agonist toxicity was evaluated in zebrafish embryos by assessing vitality, development, and morphology.

Results:

Targeting CB1 did not alter UM proliferation nor viability, whereas CB2 inverse agonism significantly reduced cell proliferation. Among the compounds tested, SR144528 (10 μM) markedly inhibited proliferation without cytotoxicity, GP1a displayed moderate inhibition and toxicity at higher concentrations (20 μM), and JTE-907 showed limited efficacy. In zebrafish assays, SR144528 caused no developmental abnormalities, while GP1a and JTE-907 induced toxicity and developmental delays, respectively.

Conclusion:

CB2 inverse agonism represents a promising therapeutic approach for metastatic UM. SR144528 demonstrated potent antiproliferative effects across multiple UM cell lines and was well tolerated in zebrafish embryos, supporting further preclinical evaluation in animal models.

P-36

Electrochemotherapy Drives Temporal and Systemic Immune Remodelling in Cutaneous Melanoma In-Transit Metastases: A Multiplex Spatial Analysis

Chowdhury Arif Jahangir[1], Čemažar Maja[2], Klančar Gašper[2], Gašljević Gorana[2], B Perić[3], William M Gallagher[1], Arman Rahman[3]

1. *Cancer Biology and Therapeutics Laboratory, UCD School of Biomolecular and Biomedical Science, UCD Conway Institute, University College Dublin, Dublin, Ireland*
2. *Department of Pathology, Institute of Oncology Ljubljana, Ljubljana, Slovenia*
3. *Department of Surgical Oncology, Institute of Oncology Ljubljana, UCD School of Medicine, University College Dublin, Dublin, Ireland*

Background:

Electrochemotherapy (ECT) is an effective local treatment for cutaneous melanoma (CM) in-transit metastases; however, its immunomodulatory effects remain incompletely understood. We examined time-dependent and spatial changes in the tumour microenvironment following ECT using multiplex immunohistochemistry (mIHC).

Methods:

A tissue microarray (TMA) was constructed from three CM patients undergoing different regimens: (i) ECT with intravenous (I.V.) bleomycin, (ii) nivolumab followed by ECT with intravenous (i.v.) bleomycin, and (iii) ECT with intratumoral cisplatin. Cores were collected at baseline (untreated), early post-ECT (Day 2–3, treated), and late timepoints (Day 9–10, treated and untreated lesions). A five-marker mIHC panel (CD8, FOXP3, PD-L1, SOX10, DAPI) was used to quantify infiltration of key immune populations and perform tumour-guided spatial analysis.

Results:

ECT induced a time-dependent increase in $CD8^+$ T cell infiltration, with the highest in late-treated lesions. $FOXP3^+$ cell density remained stable, increasing the CD8/FOXP3 ratio and indicating an effector-dominant immune state. Spatial analysis showed reduced distance between $CD8^+$ T cells and tumour cells, reflecting enhanced infiltration. At late time points, treated lesions showed higher $CD8^+$ density and closer tumour proximity than untreated lesions, confirming a local ECT effect. Untreated lesions also showed increased infiltration and partial spatial reorganisation, suggesting systemic effects. PD-$L1^+$ tumour cell density was higher in immune-active tumours, consistent with adaptive resistance. The nivolumab-pretreated patient showed higher baseline immune activity and a distinct response pattern.

Conclusion:

ECT promotes coordinated quantitative and spatial immune remodelling in CM, with increased cytotoxic infiltration and tumour engagement, and evidence of local and potential systemic effects. These findings suggest a possible rationale for integrating ECT with immune checkpoint blockade and highlight its potential role as an immune-priming strategy in CM treatment, warranting further investigation.

P-37

'Farmfluencers': Prevalence of Skin Cancer Awareness Messaging Among Irish Agricultural Social Media Content Creators: A Cross-Sectional Content Analysis

Alison Long[1], Supervising author Prof Anne-Marie Tobin[2]

1. *St.James's Hospital*
2. *Tallaght University Hospital*

Background:

Farmers and agricultural workers experience heightened occupational ultraviolet (UV) radiation exposure and are at increased risk of skin cancer. Social media content creators focusing on farming and agricultural lifestyles may serve as influential sources of occupational health information within farming communities. The dissemination of skin health information amongst this group of creators has not yet been evaluated.

Aim:

To determine the prevalence and nature of skin cancer awareness messaging among Irish farming-focused social media content creators.

Methods:

A cross-sectional content analysis was conducted using a sample of 20 Irish farming content creators on Instagram. Eligible creators self-identified as farming or agriculture-focused, had at least 3,000 followers, and had been active within the previous 6 months. For each creator, the 20 most recent posts were sampled, yielding 400 posts for analysis (posted between May 2022 and April 2026). Posts were coded for skin cancer prevention behaviours and awareness messaging, including hat use, protective clothing, sunscreen use, and skin-check messaging. The primary outcome was creator-level prevalence of skin cancer awareness content.

Results:

Among 20 Irish farming influencers analysed, only one creator mentioned sun hat use (0.25% of total posts analysed), this occurred within a sponsored post. No creators promoted skin cancer awareness or sunscreen use within the sampled posts. The average number of Instagram followers was 42,430, highlighting these content creators' ability to reach those with agricultural interests.

Conclusion:

Skin cancer prevention behaviours and awareness messaging appears to be underrepresented amongst Irish agricultural content creators, despite the occupational relevance of UV exposure. Given the large social media following, farming influencers are uniquely positioned for effective occupational skin cancer awareness campaigns within their online communities.

P-38

Selective NR4A modulation reveals differential vulnerabilities across melanoma subtypes

Rebekah Mooney[1], E Patricia Rodriguez[1,2], Evelyn P Murphy[2], Paul Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

Background/Aim:

NR4A nuclear receptors (NR4A1-3) regulate stress-adaptive transcriptional networks influencing physiological processes relevant to cancer, cell-state plasticity and inflammation. Small-molecule NR4A modulators exist that differ how they engage receptor activity. Cytosporone B (CsnB) though binding with high affinity to the ligand binding, while C-DIM12 appears to function through a distinct, indirect mechanism.

To assess if such divergent modes of NR4A modulation translate into subtype-specific responses for melanoma, we examined their effects across melanoma lines representing different mutational and differentiation states.

Methods:

A375 and SK-MEL-28 (BRAFV600E) and MeWo (NF1) melanoma cells were treated with increasing concentrations of CsnB or C-DIM12. Viability was quantified relative to untreated controls, and IC50 values and maximal efficacy (E_min; % viability at highest concentration) were determined from three independent assays

Results:

CsnB achieved only marginal growth inhibition, failing to reach an IC50 in SK-MEL-28 or MeWo cells, with modest response in A375 (38μM). In contrast, C-DIM12 induced robust and quantifiable inhibition across all lines (IC50: 16μM A375, 24μM SK-MEL-28, 28μM MeWo), and efficacy of response with BRAFV600E-mutant cell lines demonstrating most striking loss of viability at maximal concentration tested (E_min). These data highlight potential differential sensitivity that may reflect variations in melanoma cell state in addition to mutation status. Preliminary A375 expression data support a link between NR4A modulation and transcriptional networks associated with MITF-driven differentiation states. The contrasting profiles of CsnB and C-DIM12 suggest that their divergent mechanisms of NR4A engagement underlie the distinct cellular responses observed.

Conclusion:

NR4A modulation is a tractable but compound-specific therapeutic strategy in melanoma. C-DIM12 shows potent and efficacious activity across diverse melanoma subtypes, whereas CsnB does not elicit comparable responses. These findings support further investigation of NR4A-targeting agents, particularly C-DIM12, for mechanistic and therapeutic development.

P-39

SUMOylation constrains PPARγ transcriptional activity in melanoma cells

E Patricia Rodriguez[1,2], Evelyn Murphy[2], Paul Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

Aim:

To investigate how post-translational modifications regulate PPARγ activity in melanoma cells.

Background:

Peroxisome proliferator-activated receptor gamma (PPARγ) is a nuclear hormone receptor that regulates transcriptional programmes controlling metabolism and differentiation. There is increasing interest in the therapeutic potential of PPARγ ligands in melanoma; however, receptor activity may be influenced by oncogenic signalling pathways, including constitutive MAPK activity associated with BRAFV600E mutations. In metabolic systems, phosphorylation of PPARγ at S112 is considered a dominant regulatory event that can facilitate SUMO-dependent repression, but the relevance of this hierarchical regulation in melanoma remains unclear.

Methods:

PPARγ transcriptional activity was assessed using PPRE-driven luciferase reporter assays in A375 melanoma cells. SUMO-deficient (K63R, K107R) and phosphorylation-deficient (S112A) PPARγ mutants were generated by site-directed mutagenesis. SUMOylation was further examined through co-expression of SUMO-specific proteases (SENP1, SENP2). MAPK signalling was modulated using BRAF inhibitors, and SUMOylation assessed by immunoprecipitation and immunoblotting.

Results:

PPARγ exhibited ligand-dependent transcriptional responses in melanoma cells. Co-expression of SENP1 and SENP2 enhanced receptor activity, indicating that SUMOylation constrains transcriptional output. Mutation of K63 and K107 increased transactivation, supporting their role in SUMO-dependent repression. In contrast, mutation of S112 did not significantly alter receptor activity despite constitutive MAPK signalling. BRAF inhibition reduced endogenous PPARγ activity, indicating MAPK pathway modulation. Biochemical analyses revealed higher molecular weight PPARγ species consistent with SUMOylation.

Conclusion:

These findings demonstrate that SUMOylation is a key regulator of PPARγ activity in melanoma cells and suggest that, in contrast to metabolic systems, SUMO-dependent repression may occur independently of prior phosphorylation at S112. This supports a model in which oncogenic signalling rewires nuclear receptor regulation in melanoma.

P-40

Evaluating the role of frailty scores in determining indication for sentinel lymph node biopsy in elderly melanoma patients

Chloe Spillane[1], Maud Van Den Hurk[1], Dervla McManus[2], Eiran Gannon[1], Laura Wrafter[1], Joseph Siby[1], Kenneth Joyce[1]

1. Galway University Hospital, Galway, Ireland
2. University of Galway,Galway,Ireland

Background:

The prognostic and therapeutic benefits of sentinel lymph node biopsy (SLNBx) in elderly melanoma patients remain debated. Frailty is increasingly recognised as an important predictor of surgical and oncologic risk.

Aims:

This study aims to examine the association between frailty and SLNBx-related management decisions within a plastic surgery service.

Methods:

A retrospective cohort study was conducted of patients ≥60 years diagnosed with melanoma stage ≥T1b between January 2020 and December 2025 in a single tertiary hospital. Frailty was assessed using the Clinical Frailty Scale (CFS) pre-operatively and >6 weeks post-operatively. Primary outcomes included CFS scores, SLNBx histology, and post-operative complications.

Results:

A total of 184 patients were included (median age 72 years, range 60-92). SLNBx was performed in 87% (n=160), with 19.4% (n=31) positive for melanoma. SLNBx utilisation rates were 92.2% (n=94, CFS 1-3), 90.3% (n=56, CFS 4-5), and 54.6% (n=6, CFS ≥6). SLNBx complications occurred in 16.7% (n=17), 19.4% (n=12), and 9.1% (n=1) of these groups respectively. Median CFS increased with tumour stage, ranging from '3-managing well' in pT1a to '4-vulnerable' in pT4b, with similar post-operative trends. Overall, frailty worsened post-operatively in 16.3% (n=30), affecting 15.7% (n=16) of CFS 1-3, 16.1% (n=10) of CFS 4-5, and 27.3% (n=3) of CFS ≥6.

Conclusions:

Frail patients, particularly those with CFS ≥6, were less likely to be offered a SLNBx. Post-operative deterioration in frailty was more common in higher-risk groups despite comparable complication rates. Routine frailty assessment may support surgical decision-making for older melanoma patients.

P-41

Investigating the Therapeutic Potential of Cannabinoid Receptor 2 Inverse Agonists against Metastatic Uveal Melanoma

Jessica Spratt[1], Camilla Maria Fontana[2], Breandán Kennedy[3]

1. *School of Biomolecular & Biomedical Science, University College Dublin*
2. *School of Biomedical Science, Conway Institute, University College Dublin*
3. *School of Biomolecular & Biomedical Science, Conway Institute, University College Dublin*

Aim/Background:

Uveal melanoma (UM) is the most common intraocular malignancy in adults, with Ireland exhibiting the highest incidence rates worldwide. Secondary metastases are unfortunately common, occurring in approximately 50% of UM patients. Metastatic uveal melanoma (mUM) is an aggressive disease that is poorly controlled by current treatments. There is a major unmet clinical need for therapies that can improve long-term survival in those with mUM. This study investigated the potential of cannabinoid receptor 2 (CB2) inverse agonism, a novel therapeutic strategy against mUM.

Methods:

Expression of the CB2 receptor by UM cells was investigated using semi-quantitative and quantitative polymerase chain reaction (PCR). The effects of three CB2-selective inverse agonists, SR144528, JTE907 and GP1a, on the growth and survival of mUM cells were then characterised in vitro, using IncuCyte live cell analysis and an MTT assay. A toxicity assay was performed using the model organism Danio rerio (Zebrafish), to characterise the potential toxic effects of these CB2 inverse agonists. Finally, a protocol was set up to perform zebrafish xenografts, to support future in vivo investigations of drug efficacy.

Results:

The results confirmed that the gene for CB2 is expressed by both primary and metastatic UM cell lines. The in vitro analysis showed that the mUM cell line tested (OMM2.5) is sensitive to CB2 inverse agonists, and that SR144528 and JTE907 had anti-proliferative effects, whereas GP1a was cytotoxic. The results of the toxicity assay found that SR144528 was the safest of the three agents for Zebrafish embryos and larvae, having no significant effect on malformations, vitality and development up until 120 hours post fertilisation.

Conclusion:

Altogether, this research supported CB2 inverse agonism as a strategy against mUM and identified SR144528 as a promising candidate therapeutic due to its significant anti-proliferative effects on mUM cells, and favourable safety profile in zebrafish larvae. Future studies will elucidate the efficacy of CB2 inverse agonists using in vivo zebrafish xenograft models of mUM.

P-42

Proteomics signature of oncogenic protein signaling-suppression in cancer-associated fibroblasts in human melanoma

Joanna Stefan[1], Cristina Casalou[2], Aoife Lally[4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology*
2. *School of Biology and Environmental Science*
3. *Conway Institute, University College Dublin, Ireland*
4. *Dermatology Department at St Vincent's University Hospital, Dublin*

Aim/Background:

Cancer-associated fibroblasts (CAFs) were cultivated from a skin biopsy from a leg with in-transit metastasis of an NRAS-mutated, BRAF-wild type, melanoma (female patient, 82yr) in purpose to perform proteomics analysis. Control fibroblasts were cultivated from healthy abdominal skin.

Methods:

LC/MS was conducted with subsequent proteomics data analysis (Perseus and IPA for expression fold-change (FC) difference to controls. LC/MS proteomics data were subjected to differential protein expression analysis and to the Upstream Regulators of Ingenuity Pathway Analysis (IPA).

Results:

CAFs isolated from a melanoma patient's biopsy show the following protein expression pattern:

EGFR Pathway Suppression as a Central Tumor-Regulating Node: IPA Upstream Regulators analysis indicated that EGFR is decreased as a central node (Z-score=-2.67) compared to healthy dermal fibroblasts. Decreased EGFR signaling leads to a broad suppression of processes associated with tumor development and progression: Upregulated: Copper Metabolism Domain Containing 1, Z-score= 2.0, Tumor protein p73, Z-score= 2.12. Downregulated: Fibroblast Growth Factor Receptor 1, Z- score= -2.298, Hepatocyte growth factor, Z-score= -2.53, Carbohydrate-Responsive Element-Binding Protein, Z-score= -3.89, Neuregulin 1, Z-score= -2.12).

CDKN1A/p21-Mediated Tumor Suppression and Cell Cycle Control: Upregulated: CDKN1A (p21, Z-score= 3.08) can be triggered by several upstream mechanisms e.g., Transcription Factor 3, Z-score= 2.53).

Inhibition of Metastasis-Related Cellular Properties: The network reveals a concerted inhibition of cell motility and colony formation/cell proliferation processes. Downregulated: Eukaryotic Translation Initiation Factor members incl. EIF2S1, FC= -2.5, EIF2S3, FC= -2.08, EIF2B2, FC= -2.77); Hepatocyte growth factor/MYC (Z-score= -4.38); loss-of-function MYCN (Z-score= -2.25).

Conclusion:

These data suggest the presence of a cancer-protective subpopulation of CAFs that may suppresses oncogenic protein signaling via complex kinase and transcriptional regulatory mechanism.

P-43

Proteomic analysis of metabolic pathway regulation in human melanoma cancer-associated fibroblasts in vitro

Joanna Stefan[1], Cristina Casalou[2], Aoife Lally[4], Desmond J Tobin[1,3]

1. *Charles Institute of Dermatology*
2. *School of Biology and Environmental Science*
3. *Conway Institute, University College Dublin, Ireland*
4. *Dermatology Department at St Vincent's University Hospital, Dublin*

Aim/Background:

Cancer-associated fibroblasts (CAFs) were cultivated from a skin biopsy from a leg with in-transit metastasis of an NRAS-mutated, BRAF-wild type, melanoma (female patient, 82yr) in purpose to perform proteomics analysis. Control fibroblasts were cultivated from healthy abdominal skin.

Methods:

LC/MS was conducted with subsequent proteomics data analysis (Perseus) for expression fold-change (FC) difference to controls. The following cancer protein-associated signaling pathways were identified.

Results:

CAFs isolated from a melanoma patient's biopsy show the following protein expression pattern:

Regulation of Metabolic Pathways & Cancer Suppression: Upregulated: Enolase 1, FC= +15.45; Aconitase 2; FC= +1.92; Down-regulated: Acetyl-CoA Acetyltransferase 2; FC= -1.73, Hexokinase 2; FC= -2.17.

Control of Cell Cycle, Growth, and Proliferation: Downregulation: Cyclin-dependent kinase 6, FC= -2.71, Proliferating cell nuclear antigen, FC= -3.89, Mitogen-Activated Protein Kinase 1, FC= -4.03 and Eukaryotic Initiation Factors family members (EIF1, FC= -3.16, EIF2S3, FC= -2.08, EIF2B2, FC= -2.77, EIF2S1, FC= -2.50].

Modulation of Cytoskeleton and Cell Motility: Upregulated: Actin Alpha 2, Smooth Muscle, FC= 1.68, Actin Gamma 1, FC= 4.92, F-actin-capping protein subunit beta, FC= 2.06, alpha-tropomyosin, FC= 2.66, Vasodilator-stimulated phosphoprotein, FC= 2.87, which may help regulated cancer progression.

Modulation of Immune Response and Stress Signaling:

Proteins Related to Immune Response and Upregulated: Human Leukocyte Antigen-B, FC= 4.89; Intercellular Adhesion Molecule 1, FC=9.85, Interferon Induced Protein With Tetratricopeptide Repeats 2, FC=5.28 & IFIT3, FC=5.54, S100 calcium-binding protein P, FC=9.13, Myxovirus resistance 1, FC=5.10, and related to stress response: Heat Shock Protein Family A Member 8, FC=2.14 & HSPB6, FC= 2.14, Alpha-crystallin B chain, FC=3.68, Thioredoxin Reductase 1, FC= 2.35 also act against cancer development.

Conclusion:

These data suggest presence of a cancer-protective subpopulation of CAFs (e.g., an Actin Alpha 2, Smooth Muscle-positive) that may inhibit cancer-promoting metabolic and cell signaling pathways.

P-44

Context-Dependent Role of KSR1 in Regulating Therapeutic Response in Cutaneous Melanoma

Ellie Swords[1,2,3], Steffen Bakken[1,2], Ashish Neve[1,2], Nora Rauch[1], Breandán N Kennedy[2,3], Jens Rauch[1,3]

1. *Systems Biology Ireland, School of Medicine, University College Dublin, Dublin D04 V1W8, Ireland*
2. *UCD Conway Institute, University College Dublin*
3. *UCD School of Biomolecular and Biomedical Science, University College Dublin*

Background:

Cutaneous malignant melanoma is characterised by aberrant activation of the RAF-ERK signalling pathway, most commonly driven by activating mutations in BRAF (~50%) and NRAS (~30%). While RAF and MEK inhibitors (i) are effective in BRAF-mutant melanoma, they show limited efficacy in NRAS-driven disease. The PI3K pathway has also been implicated in melanoma progression, prompting investigation into combination targeting strategies. We identified Kinase Suppressor of RAS 1 (KSR1), a RAF-ERK scaffold protein, as a potential novel therapeutic target. Notably, KSR1 knockout mice are phenotypically normal yet resistant to RAS-driven tumorigenesis. However, the role of KSR1 in melanoma cell survival and drug response remains unclear. This study aimed to address this by examining the effects of RAF, MEK, AKT, and PI3K inhibition in relation to KSR1 expression.

Methods:

Wild-type (WT) and CRISPR/Cas9-generated KSR1 knockout (KO) SK-MEL-239 and MEL-JUSO melanoma cell lines were treated with RAFi, MEKi, AKTi, or PI3Ki for 72 hours. Cell viability was assessed using MTS assays, and protein expression was analysed by Western blotting. Colony formation assays were performed in SK-MEL-239 WT and KO cells following PI3K inhibition. In parallel, inhibitor-induced signalling changes were characterised using phosphoproteomics, coupled with gene set enrichment and bioinformatics analyses.

Results:

Our data indicate that WT MEL-JUSO cells displayed greater sensitivity to MEKi compared to KSR1 KO cells, while no significant difference in sensitivity to RAFi was observed. In contrast, KSR1 depletion in SK-MEL-239 cells altered sensitivity to both RAFi and MEKi. Preliminary data indicate differential responses to PI3Ki between SK-MEL-239 WT and KSR1 KO cells. These findings are supported by phosphoproteomic and bioinformatics analyses encompassing over 18,000 phosphosites. Additionally, KSR1 expression was found to correlate with overall survival in an oncogene-dependent manner.

Conclusion:

KSR1 depletion can sensitise cutaneous melanoma cells to MAPK and PI3K pathway inhibition, although this effect is strongly dependent on oncogenic context and signalling network configuration. Future work will focus on evaluating combination therapies across a broader panel of melanoma cell lines.

P-45

Oncogenic MAPK signalling regulates vitamin D receptor stability and function in BRAFV600E melanoma cells

K Michelle Hau[1], E Patricia Rodriguez[1,2], Evelyn Murphy[2], Paul D Thompson[1]

1. *School of Biomedical Sciences, Ulster University*
2. *School of Medicine, University of Limerick*

Aim/Background:

Vitamin D receptor (VDR) signalling has been widely associated with anti-tumour effects in melanoma; however, responses to vitamin D in melanoma cells are variable and poorly understood. We investigated whether oncogenic BRAFV600E/MAPK signalling regulates VDR expression and function in melanoma cells.

Methods:

BRAFV600E melanoma cell lines (A375, SK-MEL-28) were treated with vemurafenib or MEK inhibitor PD98059. VDR mRNA and protein expression were assessed by qPCR and immunoblotting. VDR transcriptional activity was evaluated using target gene expression and promoter-reporter assays. Protein stability was examined for endogenous and exogenous VDR, including effects of proteasome inhibition. VDR ubiquitination was assessed by immunoprecipitation and immunoblotting

Results:

MAPK inhibition reduced VDR mRNA and protein expression. Vemurafenib suppressed ligand-induced CYP24A1 expression and VDR transcriptional activity. Exogenous VDR was also reduced, indicating post-transcriptional regulation. Proteasome inhibition rescued VDR levels, while immunoprecipitation confirmed increased VDR ubiquitination following MAPK inhibition. Melanoma cells displayed detectable basal CYP24A1 expression in the absence of ligand, suggesting altered VDR pathway activity and enhanced vitamin D metabolism.

Conclusion:

BRAFV600E/MAPK signalling maintains VDR protein stability and transcriptional activity in melanoma cells. MAPK inhibition promotes VDR ubiquitination and proteasomal degradation. These findings indicate that VDR signalling is retained but regulated by oncogenic signalling, potentially contributing to constrained or altered vitamin D responses in melanoma.

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