Saturday
29th
November
2025

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Hospital
London
UK

COLLEGE OF MEDICINE AND INTEGRATED HEALTH

THE 2025 COLLEGE OF MEDICINE ANNUAL STUDENT CONFERENCE: BOOK OF ABSTRACTS

The Future of Healthcare:
Facing Challenges and Embracing Opportunities Together

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The College of Medicine Student Council
College of Medicine and Integrated Health
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It is our pleasure to welcome you to the 2025 College of Medicine Annual Student Conference, *The Future of Healthcare: Facing Challenges and Embracing Opportunities Together*, held on Saturday, 29th November 2025, in London and online.

This student-led conference was created as a platform for healthcare students from across disciplines to come together to share ideas, research, and perspectives on the future of health and medicine. The event reflects the College of Medicine and Integrated Health's commitment to collaboration, innovation, and whole-person care.

Throughout the day, participants engaged with a diverse programme of keynote talks, workshops, and student research presentations, featuring speakers from across healthcare, policy, academia, and lived experience. The breadth of topics explored highlights both the complexity of modern healthcare and the importance of interdisciplinary approaches in addressing its challenges.

The Student Research Showcase forms a central part of this conference, providing students with the opportunity to present original research, receive feedback, and contribute to national conversations in healthcare education and practice. The abstracts in this book reflect the enthusiasm, originality, and scholarly engagement of healthcare students from diverse backgrounds.

We hope this conference and the research presented within this book encourage continued curiosity, collaboration, and commitment to improving healthcare for individuals and communities alike. Thank you for being part of this event and for contributing to a shared vision for the future of healthcare.

With best wishes,

College of Medicine Student Council
College of Medicine and Integrated Health

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Identifying individuals at genetic risk of developing type 1 diabetes
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Upregulation of DEK Expression in Uterine Myomas and Cervical Cancer as a Potential Prognostic Factor
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The long-term impact of regular sleep patterns in childhood on physical, emotional, and cognitive development: a literature review
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Oran Barak

Abstracts / Conclusions were compiled by the editorial team based on content provided in student posters. Minor edits were made for clarity and consistency where required.

Identifying individuals at genetic risk of developing type 1 diabetes

Riya Rao, Farhadh Uddin, Shiraz Ali

Type 1 Diabetes (T1D) is an autoimmune condition caused by the T-cell-mediated destruction of insulin-producing beta cells of the islets of Langerhans in the pancreas (1)(2). Insulin is a peptide hormone that regulates blood sugar by moving it into the cells (3). Without insulin, glucose builds up in the blood, causing hyperglycemia (3). Symptoms include thirst, frequent urination, weight loss, fatigue, and blurred vision, with diabetic ketoacidosis as a potential complication (4). T1D often begins in childhood or adolescence but can occur at any age (4). It results from genetic and environmental factors (1), though the exact cause is unclear. Management requires lifelong insulin therapy, blood sugar monitoring, and lifestyle adjustments (5). Research continues to improve treatments and develop cures. T1D has been shown to have a strong genetic component (4). One gene that has been explored is the Human Leukocyte Antigen (HLA) gene. Some individuals carry certain alleles of the gene that may put them at a greater risk of developing type 1 diabetes. HLA is a group of genes located on chromosome 6 which encode proteins that play a crucial role in presenting antigens to T cells, helping to activate and regulate the immune response (7)(6). In T1D, these HLA molecules present self-antigens from the body's insulin or the pancreatic islets, such as Glutamic Acid Decarboxylase (GAD)(6), triggering an autoimmune response. HLA genes account for approximately 50% of the genetic risk, with specific HLA class II allele haplotypes being strongly linked to T1D susceptibility (4). HLA-DR3 and HLA-DR4 are two alleles that have been strongly linked with T1D (1).

Hence, it is useful to identify if patients have these particular genes which may predispose them to developing T1D in order to support them and have targeted therapies. However, possession of these genes does not mean they will definitely develop T1D.

Factors associated with willingness to participate in a peanut immunotherapy trial:
•Residence in Dublin
•Previous history of anaphylaxis
•Existing patient of the CHI allergy service
Hsin Min Fang, Hourihane J, Crealey M

A retrospective review of the recruitment data of all 100 eligible participants attending the CHI Allergy
service
• Eligible patients were categorised into 2 groups:
• Interested: patients who expressed interest and provided consent to participate
• Not interested: patients whose parents were not interested in participating.
• Descriptive statistics were used to analyse demographic details.
• A chi-square test was performed on the distance and age data.

Bridging Clinical Practice and Planetary Health: Lessons from São Paulo
Shahid Ahmadi

Brazil's model offers profound lessons for UK healthcare. The SUS demonstrates how public systems can maintain universality even in adversity, but it also exposes how environmental degradation amplifies inequality. In the UK, planetary health means decarbonising hospitals and tackling the diseases of affluence. In Brazil, it means ensuring access to clean water, nutrition, and sanitation.

Both systems share a moral duty: to link planetary wellbeing with patient care. Sustainable healthcare cannot be achieved without recognising that social justice and climate justice are the same.

Reproducing Synthesis of Trivalent PROTAC and Evaluating Protein Degradation using the Nanoluc HiBiT Detection System
Jona Garcia , Yifan Huang

The synthesis of 1,2,5T-EG2-MeVHL was successfully reproduced, and its activity closely matched the published version, although slightly reduced degradation due to purity differences.

Using the Nanoluc HiBiT assay, BRD4 degradation was assessed across several PROTACs. The assay produced clear, dose-dependent responses. 1,2,5T-EG2-MeVHL and MZ1 showed the strongest degradation profiles.
To evaluate the effect of structural variation, four isomers were tested. 1,2,6T showed superior activity, highlighting the importance of linker positioning in PROTAC design.
HiBiT data were then compared to Western blot results. For most compounds, including MZ1, results were consistent. However, 1,2,3T and 1,2,4T showed discrepancies between HiBiT and WB data. A likely explanation is the use of different cell lines for the two assays, which may vary in BRD4 or E3 ligase expression and affect degradation efficiency. This highlights the importance of assay context and supports the need to confirm results using different methods.

Overall, this work confirms successful synthesis, validates HiBiT as a sensitive assay for BRD4 degradation, and demonstrates the structural dependence of PROTAC activity.
PROTAC 1,2,5T-EG2-MeVHL was successfully synthesised
HiBiT Assay clearly showed BRD4 protein degradation
1,2,5T-MeVHL and MZ1 were the most effective PROTACs at degrading BRD4
HiBiT results were similar to published western blot results confirming validity
Differences in 1,2,3T and 1,2,4T results likely due to differences in cell types.

Exploring the spatial and cellular microenvironment of paediatric cancers
Harshika Mohan Raj, Joseph Toker, Jessica Taylor, Elizabeth Cooper, Oscar Baldwin, Richard J. Gilbertson

Tumour and developmental samples display similar intercellular communications. Progenitor populations may persist in their developmental state and continue to proliferate, forming MBs.

Characteristic mutations potentially give rise to tumours of a specific cell lineage.

TME features abundant microglia in comparison to WT; however, tumour-associated microglia share morphological and molecular traits from normal development.

MHC-I expression in tumours and early development is reduced relative to adulthood.

Neurobiological mechanisms underlying the Placebo effect in Depression.
Evaluate the efficacy of placebo as a potential treatment in Treatment-resistant Depression.
Megan Rafat
Dr Anna Battaglia

Placebo effects involve dopamine, opioid, and neuroplastic pathways.

These mechanisms are blunted in TRD, reducing placebo efficacy.

Despite lower response rates, placebos remain clinically relevant in TRD.

Open-label placebos offer ethical, expectation-based interventions.

Future focus: Personalised therapies and future trials should stratify TRD patients based on neurobiological profiles.

Overfilled Syndrome and Filler Fatigue: Recognising and Preventing Aesthetic Overtreatment
R. Benzadi, t. Mussa

The need for careful clinical decision-making in aesthetic practice is highlighted by overfilling syndrome and filler-fatigue.

Current increasing consumer pull makes the need for ethical guidance, patient education, and individualised treatment plans essential.

Regulation requiring that only qualified healthcare professionals perform aesthetic procedures and standardisation of clinician education may be necessary. This includes the conflicting use of the term "surgeon" by doctors.

An active regulatory body with clear guidance on this field can help combat overfilling syndrome and filler fatigue, as well as education campaigns.

Evaluating Dietary Guidelines in Type 1 Diabetes
Henry Goldsmith

The current evidence is inconclusive as to whether reducing carbohydrate intake leads to better long-term outcomes for patients with Type 1 Diabetes. Although it is worth appreciating the cost and complexity of running nutrition-based intervention trials, more research into this specific topic would be extremely beneficial.

However, data across many studies (including one highlighted in this poster) has repeatedly shown that decreased carbohydrate intake has resulted in significantly lower insulin demands within Type 1 Diabetic patients

A study carried out by Gregory et al. (2019) codecreased carbohydrate, which included that ‘chronic exposure of insulin-sensitive tissues to iatrogenic hyperinsulinemia leads to insulin resistance in those tissues’

These two pieces of information provide a mechanistic pathway indicating that increased carbohydrate intake, leading to increased insulin use, could hasten the development of insulin resistance in Type 1 Diabetics.

In reality, it is important to recognise that asking patients to potentially reduce carbohydrates can be difficult due to various reasons, such as:

- Carbohydrates are generally the cheapest and most easily accessible food
- The potential benefits of reducing carbohydrates are reliant on the individual replacing them with a 'healthy' protein/fat source

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The Influence of Microbial Antigens on the Immune System: Investigating HSPB1, LTA, and Peptidoglycan in Inflammatory Processes
Stella Deugo

These results indicate that tumour progression arises from both external stimuli and intrinsic immune activity.

HSPB1 balances cytokine secretion, dHSPB1 triggers transient inflammation, and LTA/PEP strongly activate cytokines. HL60 showed elevated TNF-a and IL-1ß, while THP-1 displayed increased IL-10 and IL-4, suggesting a shift toward an anti-inflammatory, tumour-permissive profile.

Overall, natural cytokine fluctuations may foster a tumour-promoting environment, emphasizing that immune balance is crucial to prevent inflammation-driven cancer progression.

Dietary Advice for Cancer Patients: Steering People Away from Restrictive Approaches with Integrative Practice
Jessica Yam

More research is needed to see if an appropriately managed restrictive diet could be used in the future as an adjunctive tool or treatment, but they cannot be confidently recommended at present. Instead, clinicians should consider patients' individual motivations and circumstances and work holistically to foster moderate, plant-centred diets aimed at supporting overall wellbeing. My placement at PBUK has provided me with a toolbox of practical tips to achieve this, which I can use myself and will be able to share with my future patients. In my future practice, I will strive to provide support to my patients to lessen anxieties around food and steer them away from the harms of overly restrictive diets.

DPYD genotyping prior to fluoropyrimidine treatment: a retrospective cohort study
Sara A. Ladak, Monika K. Krzyzanowska, Lucy X. Ma, Carly C. Barron

The DPYD testing rate at our centre was lower than expected, at 69.7%

•The prevalence of detected DPYD variants was higher than previously reported, at

5.6%; HapB3 (heterozygous) was the most common pathogenic variant

• Barriers to implementation of DPYD genotyping and incorporation strategies must be further explored

• Future work to determine FP dose reduction based on DPYD variant status and subsequent impact on patient toxicity is needed

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Bridging Need and Acceptability: Expanding SURG-Water at Rural Maternity Centres in Malawi
Shaimaa Abuhaimed, Christabel Kambala, Zsofia Torok, Kevin McGuigan, Jakub Gajewsk, Chiara Pittalis

Persistent water scarcity compromises care quality and increases staff workload. Maternity health centres face critical challenges in maintaining hygiene, cleaning, and infection prevention due to limited and unreliable water sources. The SURG-Water technology could help address these gaps and meet the clean water needs of rural health centres. The system provides on-site treated water, which could improve hygiene, reduce the burden on staff and guardians, and strengthen infection prevention in maternity care.

Water scarcity in maternity centres compromises care, hygiene, and staff workload. The SURG-Water technology can provide reliable, treated onsite water, reducing infection risk and easing water burdens. Successful deployment and uptake rely on training, maintenance, and community engagement. making it a practical, acceptable solution to meet critical facility needs.

The invisibility of female physiology on orthopaedic implants: a literature review
Joelle

Invisibility of female physiology could be due to technical problems and systemic bias

These findings highlight trends that require deeper investigations, but causal mechanisms remain to be validated
through more rigorous, sex-stratified trials.

Robotic-assisted surgical systems offer precision in implant placement, allowing for real-time adjustments based on
individual anatomical data. This could mitigate the risks associated with size mismatch and malalignment—especially in female patients with smaller joint structures and unique pelvic morphology.

AI can incorporate preoperative gait analysis and motion capture data, enabling implants to be tailored not just to
static anatomy, but to dynamic movement patterns.

Penicillin Allergy de-labelling using the PENFAST tool at a Cheltenham Primary Care Centre
Tobias Leach, Emily Truscott

Wrongful penicillin allergy labelling is common, with an estimated 5.6% of UK health records documenting a penicillin allergy, despite only around 5% of these representing a true allergy on formal testing. Such labels often result in the use of second-line antibiotics, which may be less effective, increase antimicrobial resistance, and lead to poorer patient outcomes.

This quality improvement project aimed to identify patients with a recorded penicillin allergy in primary care and stratify their risk of true allergy using the validated PENFAST decision tool. A search of SystemOne electronic patient records identified patients aged 18–30 years with a penicillin allergy label. Records were reviewed for documented reactions and prior penicillin use. Patients were contacted via AccuRx and invited to complete the PENFAST questionnaire, with risk scores confirmed by telephone.

Twenty-three patient records were identified, of which six patients responded. Three patients were classified as low risk and, following telephone consultation and consent, had their penicillin allergy label safely removed. An educational session on penicillin allergy de-labelling and use of PENFAST was also delivered to practice staff.

Wrongful penicillin allergy labelling remains a significant contributor to increased healthcare costs and poorer clinical outcomes. This project demonstrates that non-allergists in primary care can safely remove incorrect penicillin allergy labels using structured risk stratification tools such as PENFAST, with potential for wider implementation in future cycles.

The Effects of Air Pollution on Mental Health: Linking Research on Cytokine-Induced Depression & Discussing The Implications For Public Health
Ayesha Zaheer

The association between pollutants and common mental disorders

Various studies point to air pollution increasing the risk of developing common mental health disorders (CMDs)
Significant causal association between NO2 and schizophrenia at SNP rs12203592'

Also, the association between anxiety and NOx and PM/NO2 and major depressive disorder

(MDD)

Applicable to long & short term exposure; a longitudinal study in Rome, Italy, found ambient air pollution increased risk for all three above mentioned CMDs

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What influences the uptake of cervical screening among women-who-have-sex-with-women?
Elena Hardiman, Dr Chloe Asker, Dr Cornelia Guell

Our analysis highlights the intricate variables affecting cervical screening uptake in WSW globally, including
"Perception of Risk," "Heteronormativity in Healthcare," and "Fear of Negative Social Attitudes". To enhance screening rates, targeted educational and promotional initiatives for both WSW and healthcare providers are needed.

Future research should focus on public health guideline alignment and identify factors specific to the United Kingdom that affect cervical screening uptake among WSW.

Fear vs. Empowerment: Which awareness message makes people care more about Breast cancer?
Ayesha Anjum

Compared to fear-based messaging, empowerment-based messaging more successfully promotes long-term engagement, confidence, and readiness to act. Fear may draw attention, but empowerment keeps people moving. The greatest behavioural impact can result from a comprehensive approach that begins with urgency and turns into empowerment.

NEWS vs Patient Wellbeing: A comparison between NEWS and patient-reported wellness
Munduchirayil Ajimon, L.

The efficiency of implementing Martha's rule in clinical practice is complex and influenced by multiple parameters.

Studies have shown that NEWS can influence patient wellbeing1, but our project has shown that, although this is true, it isn't a true reflection. Patient well-being differs across the type of ward they're admitted to. NEWS has been shown to influence well-being scores in patients who are acutely ill and can achieve immediate treatment and improvement. However, in wards with
medically fit patients, NEWS does not play an important role.

Patient admission and mortality are highest on Mondays and our samples were only collected on Fridays, which may be a potential bias. This could be for future interest to survey the NEWS-wellbeing correlation during other significant days.

Tracheal Tug Since Birth: A Case of Neuroendocrine Hyperplasia of Infancy
Samantha Bloom, Michael O'Connor, Dr. Catalin Soroiu, Dr. Michael Horgan, Dr. Fiona Ringholz

NEHI is a rare lung disease and is often diagnosed late due to overlapping symptoms with more common differentials such as pneumonia or bronchiolitis (3, 15). Due to its rarity, NEHI is also unknown to many primary care physicians (15). In a retrospective study by Liptzin et al. (12), 199 patients with NEHI, 75 of whom were confirmed with lung biopsy, were evaluated. Comorbidities included gastroesophageal reflux (51%), aspiration/risk of aspiration (35%) and immune system abnormalities (17%) (12). The patient in this case experienced hiccups and post-feed gagging, potentially representing gastroesophageal reflux, and demonstrated immune system abnormalities (12). Failure to thrive and developmental delays have also been described in this condition (12). These comorbidities may represent important clinical features in the diagnosis of NEHI (12, 15).

While diagnosis previously involved lung biopsy, characteristic CT findings combined with the clinical picture are now often sufficient (3, 14, 16). In a study by Spielberg et al. (16), 21 retrospective cases of NEHI were identified, and CT imaging was analysed. The results demonstrated that there was a greater proportion of ground glass opacities and that these were most prevalent in the right middle lobe and lingula (2, 12, 16). Other studies have also found opacities to be prominent in the perihilar region (16).

NEHI can mimic viral respiratory illnesses or other chILD subtypes, making diagnosis challenging (3, 15, 17). While lung biopsy was once essential, characteristic signs, symptoms and imaging findings enable a non-invasive diagnosis (14, 16-17). Persistent tracheal tug and increased WOB warrant detailed imaging and immune evaluation to differentiate NEHI from other conditions (3, 17). Other signs and symptoms such as gastro-oesophageal reflux, aspiration, failure to thrive and developmental delays should also be recognised as part of NEHI's clinical spectrum (12).

How does the prevalence of Relative Energy Deficiency in Sport (REDs) compare between younger and older female runners, and to what extent does knowledge of REDs influence self-identification and proactive management of the condition in these groups?
Charlotte Stoll , Hannah Campbell, Ben Sharrock

REDs is a syndrome caused by long-term exposure to low energy availability (LEA) that can be detrimental to a persons physical health and athletic performance
Studies suggest that being female and an endurance athlete are risk factors for LEA and subsequently REDs. However, much of the research is focused on adolescent elites using small sample sizes andplaces emphasis on amenorrhea as a symptom of REDs.

Most runners in this cohort fall into the low risk cateogory.

Total REDs risk is higher in under 40's than over 40's (Fishers p = .001 and Cohen's d = 0.63). However, no significant difference foundin training volume (table 2).

REDs risk is moderately influenced by being a long distance runner (r = .169*) and training load. Running distance (r = .241**) has a greater significant impact on REDs risk than sessions (r = .142*) or hours per week (r = .189*).

More knowledge of REDs = higher chance of having the condition (r = .437**)→ may suggest increased personal research due to experience with symptoms. Runners with team support have a higher chance of REDs (r = .197**)→ higher training load = more likely to seek team support

(r = .256**, .178*, .314** for hours, sessions and km respectively) and high training load is an influencing factor for REDs.

Knowledge of REDs is strongly influenced by team support (r = .348**)→ having access to professionals may improve education of the condition.

No link found between BEDA-Q score and total REDs risk / knowledge score. However, lower score found in trail / fell runners (r =-.169*).

Next steps → focus groups and interviews will support in understanding if knowledge was acquired prior to / after developing symptoms, early warning signs for REDs, and what steps female runners would do to manage the condition.

Beyond the Cath Lab: Rebuilding STEMISystems for the Digital Era–A Decade of UK MINAP Insights (2014–2024)

Arham Shahzad, Aditya Mathew, Sukruth Pradeep Kundur, Ali Malik, Christine Yue, Rasi Mizori, Hamid Reza Khademi Mansour, Sanjay Sivalokanathan

ST-elevation myocardial infarction (STEMI) remains a time-critical emergency where minutes dictate survival. While the past decade has consolidated in-hospital excellence, national data reveal widening pre-hospital delays despite sustained door-to-balloon performance. As healthcare systems face escalating demand, the next frontier lies in transforming system connectivity turning real-time data, digital logistics, and multidisciplinary integration into tangible time savings. Therefore, the purpose was to evaluate 10-year national trends in UK STEMI system timeliness and identify emerging structural opportunities for digital and organisational innovation within the reperfusion pathway.

The Virtual Blood Test: Beyond the Needle

Layth I.T Pro.

Advances in non-invasive diagnostics are transforming disease detection by enabling continuous, real-time monitoring of physiological states without the need for blood sampling. Emerging biosensing technologies leverage biochemical signals present in breath, saliva, interstitial fluid, and skin to provide insights into metabolic, hormonal, nutritional, and pathological processes.

Exhaled human breath contains over 1,000 volatile organic compounds (VOCs) generated through cellular metabolism. Using gas chromatography–mass spectrometry (GC-MS), composite VOC profiles can be analysed and interpreted using machine learning algorithms to detect early metabolic or inflammatory changes. Rather than identifying single biomarkers, this approach recognises biochemical patterns that may signal disease before clinical symptoms arise.

Saliva analysis utilises microfluidic lab-on-chip platforms to quantify hormones, antibodies, and metabolites translocated from blood. Its non-invasive nature allows frequent sampling, making it particularly valuable for point-of-care testing and screening in remote or resource-limited settings.

Microneedle biosensors access interstitial fluid via painless microstructures that bypass nociceptors and blood vessels. Functionalised sensor coatings generate measurable electrochemical or optical signals, enabling real-time monitoring of glucose, hormones, immune markers, and clotting factors. This technology exemplifies convergence between materials science, electrochemistry, and digital health.

Finally, optical spectroscopy techniques, including near-infrared, mid-infrared, and Raman spectroscopy, exploit light–tissue interactions to infer biochemical states. When combined with artificial intelligence models, spectral data can produce quantitative estimates comparable to conventional blood tests.
Together, these technologies signal a shift towards patient-centred, continuous health monitoring, with the potential to redefine diagnostics as proactive, personalised, and minimally invasive.

Circulating platelets as biomarkers for the ovarian cancer diagnosis and prediction of treatment response

Amelia Janiak , Vahid Afshar-Kharghan , David G. Menter , Anil K. Sood , Sara Corvigno

Ovarian cancer remains a leading cause of gynaecological cancer mortality, accounting for over 200,000 deaths annually worldwide. Approximately 70% of cases are diagnosed at advanced stages (FIGOIII–IV), contributing to a five-year survival rate of around 17%. Current diagnostic approaches, including CA-125 measurement, ultrasound imaging, and tissue biopsy, demonstrate limited sensitivity for early-stage disease and fail to capture tumour heterogeneity. Liquid biopsy has emerged as a promising alternative, enabling minimally invasive profiling of circulating tumour-derived components such as circulating tumour DNA (ctDNA), cell-free RNA (cfRNA), circulating tumour cells (CTCs), extracellular vesicles (EVs), and tumour-educated platelets (TEPs). Among these, platelet-based biomarkers have gained increasing attention due to their dynamic interaction with tumour cells and accessibility through routine blood sampling. Quantitative platelet alterations, including thrombocytosis (>400,000/μL), are associated with advanced disease stage, recurrence, and reduced survival, and may precede ovarian cancer diagnosis
by up to six months. Elevated platelet-to-lymphocyte ratio has also been linked to shorter progression-free survival. At the molecular level, TEP RNA signatures have demonstrated high diagnostic accuracy (approximately 80–96%) in distinguishing cancer patients from healthy individuals, while tumour-associated protein enrichment in platelets has been detected even in micro-tumours smaller than 1 mm^3.

Structural platelet abnormalities, such as disrupted microtubules, mitochondrial damage, and altered membrane receptor organisation, further reflect tumour-driven platelet reprogramming. Clinically, persistent thrombocytosis following chemotherapy has been associated with poor therapeutic response.

This review summarises current evidence supporting platele outcomest-based biomarkers as diagnostic, prognostic, and predictive tools in ovarian cancer, and explores the integration of artificial intelligence to enhance biomarker interpretation for precision oncology.

Upregulation of DEK Expression in Uterine Myomas and Cervical Cancer as a Potential Prognostic Factor

Anastasia Tsigkou, Amelia Janiak, Peng Cheng Tan, Ferdinand Kappes, Felice Petraglia, Chiara Donati, Xinyue Liu, Renata Koviazina, Fangrong Shen

Uterine leiomyomas and cervical carcinoma represent a significant global health burden. Uterine myomas affect approximately 50% of women of reproductive age, while cervical cancer remains one of the leading gynaecological malignancies worldwide despite established screening programmes. There remains a need for improved molecular biomarkers to aid diagnosis, risk stratification, and disease monitoring.

DEK is a nuclear oncogene located on chromosome 6p22.3 that encodes a 43 kDa protein involved in chromatin remodelling, DNA repair, and transcriptional regulation. Overexpression of DEK has been reported in multiple malignancies, where it is associated with increased cellular proliferation, invasion, genomic instability, and resistance to apoptosis. This pilot study investigated DEK expression across normal myometrial tissue, uterine leiomyomas, and cervical carcinomas to assess its potential diagnostic and prognostic value in gynaecological disease.

Tissue samples were collected between January and June 2023 from the No. 1 Affiliated Hospital of Suzhou University, including uterine leiomyomas (n = 10), cervical carcinomas (n = 4), and normal myometrium (n = 3). All samples were histologically verified, FIGO-staged, and collected under institutional review board approval with informed consent. DEK expression was assessed using immunohistochemistry, Western blotting, and quantitative real-time PCR. Immunoreactivity scores were quantified using QuPath software, while protein and mRNA expression levels were normalised to GAPDH. Statistical analyses were performed using GraphPad Prism, with significance set at $p < 0.05$.

DEK expression demonstrated a stepwise increase from normal myometrium to uterine myomas and was highest in cervical carcinoma samples at both the protein and transcript levels. These findings suggest that DEK may serve as a biomarker for tumour progression within gynaecological tissues.

This study highlights DEK as a potential diagnostic and prognostic marker in uterine and cervical pathology. Larger-scale studies are warranted to further elucidate its role in tumour biology, including interactions with p53 signalling, hormonal pathways, and disease progression, with potential implications for improving women's health outcomes.

The long-term impact of regular sleep patterns in childhood on physical, emotional, and cognitive development: a literature review
Aum Gajjar

In layman's medicine, good sleep is heavily promoted as the key to wellness. Across the world, parents tend to enforce sleeping routines for their children in the hopes of maximising their development.
This poster will look into how certain sleep habits, and lack of proper sleep, in Childhood can create less favourable health outcomes later in life. To properly understand regular and hence irregular sleep patterns, we have divided this into three factors:

• Regular Bedtime
• Sleep Quality
• Sleep Length

Current longitudinal and cohort studies provide growing evidence that reduced sleep duration, poor sleep quality, and irregular bedtimes in childhood are associated with adverse health outcomes in adulthood, including metabolic and psychological disorders. However, most studies rely on parent- or self-reported sleep measures, with limited use of objective assessments or long-term follow-up into late adulthood. Despite these methodological constraints, the consistency of associations across populations supports a causal link. Further high-quality, prospective research is warranted to clarify mechanisms and guide early-life sleep interventions aimed at improving lifelong health outcomes.

Evaluating Psilocybin-Assisted Therapy for Depression
Oran Barak

Major Depressive Disorder (MDD) is a leading cause of global disability, affecting over 300 million individuals worldwide. Current first-line pharmacotherapies, including selective serotonin reuptake inhibitors (SSRIs), are limited by high non-response rates, with 30–50% of patients failing to respond fully and up to 30% developing treatment-resistant depression (TRD). Additionally, approximately half of patients discontinue treatment within six months due to adverse effects. These limitations have prompted interest in alternative therapeutic approaches.

Psilocybin is a tryptamine hallucinogen metabolised to psilocin, a potent 5-HT2A receptor agonist. Dysregulation of 5-HT2A signalling within the default mode network (DMN) has been implicated in rigid, ruminative thought patterns characteristic of depression. This review evaluates the current clinical evidence, proposed neurobiological mechanisms, and safety profile of psilocybin-assisted therapy (P-AT) for depression.

Psilocybin-assisted therapy typically involves one or two supervised dosing sessions of 25 mg psilocybin combined with structured psychological support. Randomised controlled trials in MDD have demonstrated response rates of up to 71% and remission rates of 54% at four weeks, with effect sizes substantially exceeding those of standard pharmacotherapies. In TRD populations, open-label

Studies have shown sustained symptom reduction at three and six months. Comparative trials suggest psilocybin-assisted therapy is comparable to escitalopram on primary depression scales, while demonstrating superiority on secondary outcomes, including optimism and dysfunctional attitudes.

Neuroimaging studies indicate that psilocin promotes neuroplasticity through enhanced glutamate and brain-derived neurotrophic factor signalling, alongside transient disruption of DMN functional connectivity. Reductions in amygdala cerebral blood flow following treatment have been correlated with clinical improvement. Therapeutic outcomes appear strongly influenced by set and setting, with mystical-type experiences predicting sustained antidepressant effects.

Overall, psilocybin-assisted therapy demonstrates rapid, robust antidepressant effects with a favourable tolerability profile. However, existing evidence is limited by small sample sizes and incomplete blinding. Larger, blinded randomised controlled trials with long-term follow-up are required, alongside evaluation of scalability and infrastructure requirements for broader clinical implementation.

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