SUMMER SCIENTIFIC MEETING

4TH JULY 2025

Aston University
BIRMINGHAM UK

BA CA British Association of Clinical Anatomists

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Welcome to the Summer Scientific Meeting of the British Association of Clinical Anatomists hosted by Aston Medical School

The BACA **meeting** is held at **Aston Medical School, Aston University, Birmingham**

on Friday 4th July 2025

The **Association Dinner** is at 19.00hrs at Courtyard Restaurant, Conference Aston Ltd, Aston University, Birmingham, B4 7ET

BACA COUNCIL

Thursday 3rd July, MB 416, Main Building, Aston University

Trustees of BACA meeting 15:00-16:00 hrs

Council of BACA meeting 16.00—19:00 hrs

Welcome

Dear Delegates,

It is with great pleasure that we welcome you to the BACA Summer Scientific Meeting at the Aston Medical School, a gathering of people passionate about Clinical Anatomy. Whether you have travelled from near or far, we are delighted that you have joined us.

This meeting is a unique opportunity to learn, but also contribute and connect with people and conversations shaping our field. Over the day, you will hear from inspiring speakers, see interesting posters and engage in stimulating discussions. Our engaging keynote speakers will cover varied topics: Dr Megan Davey will update us on limb embryology, Mr Umraz Khan on tissue reconstruction and Professor Adrian Gardner on scoliosis.

We hope that you will get fresh ideas and build new collaborations that will continue well beyond this event.

We wish you an enjoyable, rewarding and memorable day.

Warmest regards,

The Meeting Host Team

It is a pleasure for BACA to be at the University of Aston for our summer scientific meeting. We wish to thank the Aston Medical School team (Sami Al-Ani, Noor Al-Antary, John Delieu, Claire Stocker) for extending the invitation to host our BACA meeting.

Congratulations to all the presenters for getting your work accepted for presentation today. Please make the most of the opportunity, enjoy the day, and get to know others in the field. We look forward to seeing you again at future BACA meetings!

Best Wishes,

Phil Adds (BACA President) ***Andy Ginty (BACA Meetings Secretary)***

Programme

Time	Event	Details
08:15	**Registration and Refreshments**	
08.55	**Meeting Open by BACA President**	Dr Phil Adds (President of BACA)
09.00	**Welcome to Aston**	Professor Eamonn Maher
09:10	**Welcome by Host Team**	Dr John Delieu, Dr Sami Al-Ani
09.15	**Keynote Plenary 1**	Megan G Davey Functional Genetics, The Roslin Institute, University of Edinburgh, UK Predicting the future anatomy of limb bud cells- a history, summary and future of fate mapping of the chicken wing
10.00	**Session 1: Oral Presentations**	**SO1** Key factors influencing surgical outcomes in quadriceps tendon rupture: a 16-year case series from a high volume tertiary trauma centre **S02** A Novel patient-specific approach to landmark-based intramuscular botulinum toxin (Botox®) injections into the rotator cuff **SO3** Microgravity and kidney health: a novel role for the crocodile gut microbiome **SO4** The sexual anatomy of the human female external genitalia: confusions and conflict in law and culture **SO5** Vascular considerations in posterior malleolus fracture surgery: the prevalence of the peroneal artery communicating branch and peroneal artery dominance **SO6** Reconceptualising the extensor tendon hood as a suspension bridge: a novel anatomical and biomechanical perspective
11.00	**Coffee Break**	

Programme

Time	Event	Details
11.15	**Keynote Plenary 2**	Mr Umraz Khan - Evolution of Flaps of Human Tissue
12.00		**SO7** Cause of death trends and comorbidity among anatomical donors in scotland: insights from body donation programme data (2013-2023) **SO8** Mapping the use of technology in anatomy curricula: a scoping study **SO9** The anatomical course of the azygos vein: a retrospective computed tomography study **S10** Beyond the Screen: Evaluating Medical Dramas as Educational Tools
12:45	**Lunch and Poster session**	PO1-P29
13.30	**BACA AGM**	***Annual General Meeting***
14.00	**Keynote Plenary 3:**	Professor Adrian Gardner – When does anatomy become pathology in scoliosis? The lessons learnt using surface topography.
14.45	**Session 2: Oral Presentations**	**S11** A practical guide to representative anatomy research **S12** Anatomical education: are universities doing enough? **S13** Escape the operating room: a gamified experience for surgical decision-making **S14** Anatomy curriculum and teaching: insights from final year medical students in the United Kingdom (ACTION-UK): a national collaborative study
15.30	**Coffee break**	***Posters***

Programme

Time	Event	Details
16.00	**Session 3: Oral Presentations**	S15 Evaluation of bespoke anatomy education for Interprofessional Sexual Offences Examiners S16 Use of whole-body cadavers to enhance surgical training in the East Midlands S17 Anatomy of an anatomy atlas: creation of an anatomy atlas from labelled plastinated sectional slices S18 Enhancing anatomical confidence and surgical engagement through paired near-peer and clinician-led teaching: a year-long national anatomy teaching series S19 Further historical insight into the 19th Century Anatomy Museum in Liverpool
-17:00	**Thanks, conference end, raffle draw**	Dr Phil Adds (President of BACA)
19.00	**Conference dinner (pre-booked only)**	***Courtyard, Aston Conference***

Oral Presentations

Each talk should last for a maximum of 7 minutes. The session Chair will have to keep to time and will stop you if you run over. Three minutes will be allowed for questions by the audience. Ensure you upload your presentation prior to the start of the session you are presenting at.

Poster Presentations

Poster session (12.45-2.00)

Posters must be printed and no larger than A0 size (portrait). Poster presentations will be delivered to BACA Council members as well as fellow delegates. You will be given three minutes to summarize your poster findings to the assembled group, followed by two minutes to answer any questions. You will then be expected to listen to the other poster presentations in your group and participate by asking questions.

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BACA Prizes and Awards

Did you know BACA offers a range of prizes and scholarships? Apply for these now our webpage: https://www.baca-anatomy.co.uk/pages/15-prizes-awards

BACA Sponsorship

BACA will sponsor other events that it deems suitable that promote the dissemination of clinical anatomy and anatomical education research.

Conference Prizes

Member and open prizes are awarded at every meeting.

BACA Annual National Student Essay

Students from the UK and Ireland are invited to submit an essay, between 1000-1500 words, discussing a specific topic.

BACA Scholarships

Awards will be made available twice yearly to aid research into clinical anatomy and anatomical education.

Public Engagement Awards

Awards of £50 will be made available to those who wish to carry out public engagement events related to human anatomy. Events will primarily be aimed at members of the general public.

BACA Anatomical Art Competition

BACA members from all around the world are invited to submit an original drawing, painting, sketch or digitally created artwork for BACA Anatomical Art Competition.

Predicting the future anatomy of limb bud cells- a history, summary and future of fate mapping of the chicken wing

Speakers Bio: Dr Megan Davey holds a degree in Human Anatomy and a PhD in Developmental Biology. She trained under renowned limb development scientists, Professor Cheryll Tickle and Professor Lewis Wolpert, in London and Dundee, before establishing her own research group at The Roslin Institute, University of Edinburgh. Dr Davey's research explores the fundamental developmental processes that underlie both normal limb patterning and limb differences. Using the chicken embryo as a 3R model system, her work provides critical insights into vertebrate limb development. A strong advocate for interdisciplinary collaboration, Dr Davey emphasises the importance of communication between clinicians and research scientists to facilitate the translation of animal model findings into a deeper understanding of human development

Dr Megan G Davey

Reader, Functional Genetics, The Roslin Institute, University of Edinburgh

Talk Abstract: Developmental patterning processes begin in the embryo long before any anatomical structures become observable. To investigate these processes, developmental biologists often create a "fate map," which involves tracking cells or tissues throughout development to examine their ultimate fate. The first fate map of an embryonic limb bud was created 75 years ago in a chicken embryo, using carbon particles to label cells. This ground breaking work, combined with tissue excision experiments, later advancements such as lipophilic dye and viral labelling, and the correlation of cell fate with gene expression, uncovered many fundamental processes of limb development. It also established the developing limb bud as a crucial model for understanding how anatomical patterns are generated during development. However, for many years, progress was limited by technical constraints. Recently, advances in cell-labelling techniques, particularly through advances in chicken transgenesis, imaging and genomics approaches, have dramatically expanded the possibilities for fate mapping. As we stand on the brink of revolutionary new methods in avian fate mapping, we revisit the current state of the wing bud fate map to identify the unexplored areas and future opportunities for discovery.

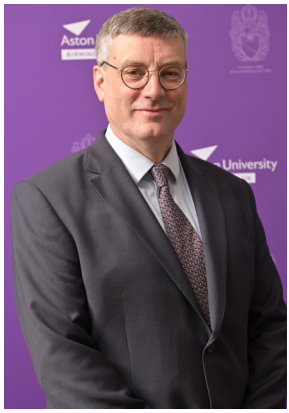
When does anatomy become pathology in scoliosis? The lessons learnt using surface topography.

Speakers Bio: Adrian Gardner is a spinal surgeon from The Royal Orthopaedic Hospital in Birmingham, United Kingdom. He specialises in spinal deformity surgery of all types in all ages. He graduated with a Bachelors in Medicine from Southampton University in 1998 and became a consultant surgeon in 2009 via the National Spine Fellowship in Leeds. His PhD was in an investigation into the surface shape of the back in adolescents with and without scoliosis, and he was awarded this from Birmingham University in 2020.

He was appointed as the Professor of Clinical Practice in Orthopaedic Surgery at Aston University in 2024 and also acts as the Associate Dean for Research and Enterprise for Aston Medical School. He is the Research and Development Director for the Royal Orthopaedic Hospital.

To date Adrian has published over 80 peer reviewed papers and 4 book chapters covering aspects of orthopaedic and spinal surgery. He is funded by the NIHR, Innovate UK and Orthopaedic Research UK and co-supervises 4 PhD students, having had two complete successfully.

Outside of orthopaedics, his major interest is military history of the last century and he has a genuine Royal Flying Corps SE5A propeller from 1916 which sits in his front room.



Professor Adrian Gardner BM PhD MRCS FRCS(T&O).

Professor of Clinical Practice (Orthopaedic Surgery) Associate Dean for Research, Aston Medical School, Aston University. Consultant Spine Surgeon. Research and Development Director The Royal Orthopaedic Hospital NHS Foundation Trust

Talk Abstract: Scoliosis is a 3D helical deformity of the spine. It is associated with alterations in shape and symmetry of the trunk. However, there is a degree of asymmetry in all of us. So when does normality become abnormality? This talk will describe the use of surface topography to document the shape of children without scoliosis, those with scoliosis and the lessons learnt about the aetiology of scoliosis, the effects on the body and the effects of scoliosis surgery.

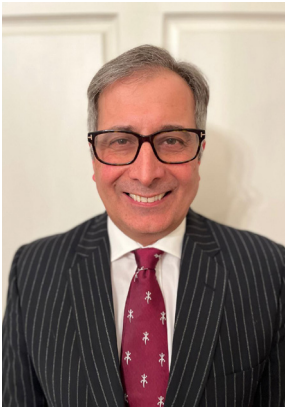
Evolution of Flaps of Human Tissue

Speakers Bio: Consultant plastic surgeon in NHS since 2002. Trained in London, USA and Australia. Held positions of program Director for surgical training and SAC representative. Head of education committee BAPRAS.

Developed micro surgical practice and an international fellowship

Written over 100 peer reviewed papers

Awarded medal of excellence .



Mr Umraz Khan

Talk Abstract: Soft tissue defects when large and in awkward locations of the body are difficult to manage. Doctors have been vexed by this for centuries and indeed out of necessity Plastic surgery was born out of this need. I will talk about advances in the understanding of how to harvest tissue and to transfer it for treatment. The concept of 'flap' surgery - allowing defects to be restored - is intuitive but in clinical practice it is nuanced. The vascular basis of flaps allows surgeons to be imaginative in which tissues to harvest for particular defects. The dictum remains 'replace like with like'.

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Speakers

S01 - Heath, James[1], Neil Ashwood[2], Mohammed Khatir[2], Akhshay George[2]

1. George Eliot Hospital, College St, Nuneaton

2. University Hospital of Derby and Burton NHS Foundation Trust, Derby, UK

Key factors influencing surgical outcomes in quadriceps tendon rupture: a 16-year case series from a high volume tertiary trauma centre

Quadriceps tendon rupture (QTR) incidence is rising and delayed diagnosis worsens outcomes, necessitating prompt identification and treatment. This 16-year observational retrospective case-series examines factors influencing repair outcomes, focusing on pre-operative assessment, surgical techniques, and post-operative results. Data were gathered from the trauma registry and physiotherapy records. Statistical analysis was performed using Pearson-correlation and ANOVA (significance=$p<0.05$).

Forty-six patients (43 male:3 female, aged 50-70 years) were included. Imaging modality influenced time to surgery (TTS) ($p=0.0148$). A combination of X-ray and ultrasound (USS) proved most sensitive for diagnosis, though X-ray-only diagnosis resulted in shorter TTS. TTS averaged 11 days, with 52% waiting >72 hours. >90% of tears were osteotendinous with transosseous tunnels (TT) (63%) the predominant approach. No significant difference was seen in post-operative range-of-motion or recovery time between surgical techniques.

Our results reinforce the male predominance and age-related risk of QTR. Comparable outcomes were observed across different surgical techniques, and surprisingly, early and delayed surgeries showed no differing effect on post-operative outcomes. We highlight the delay to surgery when USS is involved in the diagnostic work-up. Future research should investigate whether optimising clinical assessment and X-ray interpretation can negate the need for USS in diagnosis, thereby reducing wait times.

S02 - Duru, Dave[1,2], David Lee[1,2], Niel Kang[1,3], Salma Chaudhury[1,3], Cecilia Brassett[1].

1. Human Anatomy Centre, Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, UK;

2. Gonville & Caius College, University of Cambridge, Cambridge, UK;

3. Department of Trauma and Orthopaedics, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK.

A Novel patient-specific approach to landmark-based intramuscular botulinum toxin (Botox®) injections into the rotator cuff

Myofascial pain syndrome (MFPS) is characterised by chronic pain and constrictions at trigger points located at motor end plates. MFPS commonly affects both supraspinatus and infraspinatus. While botulinum toxin (Botox®) injections have proven efficacy, current techniques rely on ultrasound or electromyography guidance, limiting accessibility in low-resource settings. This study investigated using a landmark-based approach related to scapular dimensions for predicting the location of suprascapular nerve motor insertions into supraspinatus and infraspinatus to inform Botox ® injections. Dissection was performed on 10 pairs (5 males and 5 females) of cadaveric shoulders (n=20). Sites of nerve entry into supraspinatus and infraspinatus were defined. Measurements were made from scapular landmarks to the average site of nerve insertion (injection target) into supraspinatus and infraspinatus in two axes, which were correlated with scapular dimensions. The deltoid tubercle and root of the scapular spine were found to be optimal landmarks for guiding supraspinatus injections ($r=0.58-0.64$; $p<0.05$), while the root of the scapular spine and lateral acromion were optimal for guiding infraspinatus injections ($r=0.46-0.60$; $p<0.05$). These findings provide an anatomical basis for patient-specific Botox® injections to treat MFPS. All donors had provided written consent for use of their bodies for anatomical research in compliance with the Human Tissue Act 2004.

S03 - Ranade, Anu V [1,2], Rizwan Qaisar[1,2]

1. Department of Basic Medical Sciences, College of Medicine, University of Sharjah, Sharjah, United Arab Emirates

2. Cardiovascular Research Group, Research Institute for Medical and Health Sciences, University of Sharjah, Sharjah, United Arab Emirates

Microgravity and kidney health: a novel role for the crocodile gut microbiome

Microgravity challenges human physiology, impacting organs like the kidneys. The Hindlimb Suspension (HS) mouse model serves as a well-established and reliable tool, demonstrating links between simulated microgravity and both renal dysfunction and alterations in gastrointestinal health. We investigated if unique components from the crocodile gut microbiome could protect kidney health in this model, utilizing their remarkable stress resilience. Our study, approved by the University's Animal Care and Use Committee (ACUC-19-05-05-01/12.06.2019), used male C57BL/6 mice, aged four months. We divided them into a Ground-Based Control Group (GCG); a Hindlimb Suspension with Placebo (HS-P) group, simulating microgravity; and a Hindlimb Suspension with Crocodile Bacterial Conditioned Media (HS-CBM) group, also simulating microgravity but receiving the crocodile gut microbiome media (n=3/group). Following the three-week period, mice were humanely euthanized. Their kidney tissues were collected for histopathology and mRNA sequencing. Statistical significance was determined using one-way ANOVA and Tukey's test, with $p < 0.05$. The CBM treatment partly restored glomerular structure, reversed gene expression alterations associated with oxidative stress, apoptosis, fibrosis, and overall inflammation. Further studies are required to completely understand the precise mechanisms contributing to these protective effects and to explore their potential for therapeutic application.

S04 - Burd, Andrew[1], Pascale Pollier[2]

1. Director, Second Opinion (Medico-Legal) Hong Kong International, the Chinese University of Hong Kong, Hong Kong

2. Registered Medical Illustrator Practitioner

The sexual anatomy of the human female external genitalia: confusions and conflict in law and culture

Labiaplasty is the fastest growing cosmetic procedure worldwide. A major reason for this is the lack of understanding in the general population of what is the normal anatomy. Regulations regarding, the depiction of the labia minora in soft pornography in the UK and Australia require airbrushing out "excessive" protrusion. Complications related to cosmetic labiaplasty have

led to allegations of female genital mutilation (FGM). FGM is a very different cultural practice that can lead to complications in fertility and childbirth. The diagnosis of FGM does require an understanding, within professional healthcare workers, of the normal female genital anatomy and the possible variations after different forms of mutilation. The authors would like to take this opportunity to introduce the Atlas of Human Sexual Anatomy written by Robert Dickinson who died in 1950. This is a classic work and an abundantly illustrated (and now copyright free) resource for those concerned with teaching and understanding what is normal in female genital anatomy.

S05 - Aslam, Shahjahan, Chijioke Orji, Lyndon Mason

Liverpool University Hospitals NHS Foundation Trust, University of Liverpool, Liverpool UK

Vascular considerations in posterior malleolus fracture surgery: the prevalence of the peroneal artery communicating branch and peroneal artery dominance

Vascular injury, though rare, is a serious risk in posterior malleolus fracture (PMF) surgery, particularly via the posterolateral (PL) approach. Variations in peroneal artery anatomy, especially the communicating branch (PACB), have been linked to complications. This study evaluates the prevalence of PACB and peroneal artery dominance (PAD) in lower limbs. A retrospective review of 916 lower limb CT angiographies was conducted. Data were categorized by imaging indication, limb laterality, and presence of PACB. PACB was present in 31.4% (n=288) of cases. It was significantly more common in patients with peripheral vascular disease (PVD) (78.5%) compared to those imaged for trauma or other reasons. Among limbs with a PACB, 10% had an atretic proximal posterior tibial artery, indicating PAD. The PACB typically originated ~4 cm proximal to the ankle joint, placing it at risk during the PL approach. The high prevalence of PACB, especially in PVD patients, highlights the anatomical variability of peroneal artery branching. Surgeons should exercise caution when using the PL approach for PMF fixation, as inadvertent PACB injury may result in ischemic complications.

S06 - Sameh Elmorsy Elsayed[1,2]

1. South Tyneside & Sunderland NHS Foundation Trust, Sunderland, UK

2. Beni-Suef University Hospitals, Beni-Suef, Egypt

Reconceptualising the extensor tendon hood as a suspension bridge: a novel anatomical and biomechanical perspective

The extensor tendon hood is a multilayered aponeurotic structure critical for coordinated finger extension. Its complexity poses challenges for teaching, understanding injury mechanics, and planning surgical repair. This study introduces a novel anatomical analogy that conceptualises the extensor hood as a suspension bridge, providing a visual and biomechanical model to clarify its structural and functional relationships. In this model, the central slip is conceptualised as the bridge deck, directly transmitting extensor force to the middle phalanx. The lateral bands act as primary suspension cables, redistributing force across the dorsal apparatus, while the sagittal bands and oblique retinacular ligaments serve as crossbeams and stabilising cables, anchoring the system across the metacarpophalangeal (MCP), proximal interphalangeal (PIP), and distal interphalangeal (DIP) joints. The phalanges and metacarpal heads serve as pylons anchoring the structure to bone. This conceptual framework was developed through anatomical review and diagrammatic modelling. It offers an intuitive understanding of force transmission and explains certain deformities, such as boutonnière, as failures of specific “cable” elements. This model provides a useful teaching tool and has the potential to drive future biomechanical studies and clinical practice. Future directions include cadaveric dissection, finite element modelling, and dynamic imaging studies to validate this model.

S07 - Xiwang, Yu, Siobhan Cantley, Paul M. Rea

School of Medicine, Dentistry and Nursing, College of Medical, Veterinary and Life Sciences, University of Glasgow, UK

Cause of death trends and comorbidity among anatomical donors in scotland: insights from body donation programme data (2013-2023)

Body donation is essential to anatomical education, providing students with opportunities to develop both technical skills and professional empathy. However, the clinical characteristics of donors, particularly their causes of death, remain underexplored in the UK. This study examines trends in cause of death among individuals who donated their bodies to the University of Glasgow over a ten-year period. A retrospective analysis was conducted on 848 donors accepted between 2013 and 2023. Data were anonymised and

categorised by primary, secondary, and tertiary cause of death, including cancer, age-related frailty, infection, cardiovascular disease, and neurological conditions. Analyses and visualisations were performed using RStudio. Non-contagious infection was the most common primary cause of death (26.5%), followed by cancer (22.3%) and cardiovascular disease (19.3%). Neurological disorders (15.9%) and respiratory diseases (9.9%) were frequently reported as secondary causes. Nearly half of donors (48.8%) had no third recorded cause, likely due to documentation limitations or absence of comorbidities. These findings highlight the prevalence of comorbidity among donors and the evolving health profile of body donation populations in Scotland. They offer insight for donor programme planning, resource allocation, and the development of consent strategies that reflect changing demographic and clinical realities.

S08 - Evans, Lily[1], Rocky Cheung[2], Lauren Singer[1], Jenny Clancy[3], Mutahira Lone[4]

1. University of Plymouth, Plymouth, UK

2. King's College London, London, UK

3. University of Glasgow, Glasgow, UK

4. University College Cork, Cork, Ireland

Mapping the use of technology in anatomy curricula: a scoping study

The integration of digital technology into anatomy curricula is becoming increasingly widespread, driven by its continually improving accessibility and functionality. These tools serve as valuable adjuncts to various teaching methods, offering students new perspectives on anatomical structures, and creating opportunities to enhance inclusivity. This study aims to explore the current global landscape of anatomy technology use to support educators in adopting and applying these tools effectively. Phase one involved a mixed-methods survey examining the types of technology used, educators' rationale for adoption, their experiences, and perceived barriers. To date, 23 anatomy educators across 11 countries have responded, with further recruitment ongoing in Scotland, Australia, and New Zealand. Phase two will involve focus groups to explore themes identified in the survey more deeply. Preliminary data indicate that most educators incorporate technology into diverse curricular models, including combinations of cadaveric dissection, prosection, plastinated specimens, and non-cadaveric curricula. However, over half of the respondents (12/23) reported not using educational theory to guide integration. While student responses to the technologies have been largely positive, challenges remain around implementation. Future steps include organising educator workshops, developing best-practice groups and creating

international research networks to support effective and evidence-based use of anatomy education technology.

S09 - Hector, Lauren R[1], Hania Paverd[1], Arthikkaa Thavakumar[1], Cecilia Brassett[2], Timothy J Sadler[1]

1. Department of Radiology, Addenbrooke's Hospital, Cambridge University NHS Foundation Trust, Hills Road, Cambridge, UK

2. Human Anatomy Centre, Department of Physiology, Development and Neuroscience, University of Cambridge, Downing Street, Cambridge, UK.

The anatomical course of the azygos vein: a retrospective computed tomography study

The azygos vein (AV) is described as ascending vertically to the right of the vertebrae before arching anteriorly toward the heart. However, a small number of cadaveric studies suggest it may shift leftward with increasing age. A retrospective analysis of 291 patients' contrast-enhanced thoracic computed tomography studies was conducted with ethical approval (158 females; ages 0-100). The vertebral level (VL) of the AV arch was designated "V0" with subsequent caudal VLs designated V1-V5. At each VL the position of the AV and aorta relative to the vertebral midpoint was recorded in degrees. The AV arch had a variable location; T5 (65%), T4 (18%), and T6 (17%). There was a significant correlation between increasing age and leftward shift of the AV and aorta between V0 and V4 (Spearman's correlation (rho) between 0.31 and 0.68, $p<0.001$). At V5, AV position no longer changed with age (rho=-0.03, $p>0.05$), whereas aortic shift persisted (rho=0.39, $p<0.001$). There was also increased positional variability of AV with age at V1-V5 (rho between 0.17 and 0.38, $p<0.05$). This leftward shift of AV and aorta could reflect age-related laxity of the posterior mediastinum. Understanding these changes is important for reducing the risk of vascular injury during thoracic procedures.

S10 - Dr Katti Karuna[1]; Aleeza Baseer[2]; Dr Revers Donga[2].

1. Clinical anatomy Learning Centre, Lancaster Medical School, Faculty of Health and Medicine, Lancaster University, Lancaster, UK

2. Human Anatomy Unit, Department of Biomedical Sciences, School of Infection, Inflammation and Immunology, College of Medicine and Health, University of Birmingham, Birmingham, UK

Beyond the Screen: Evaluating Medical Dramas as Educational Tools

Medical dramas have gained significant popularity since the debut of *ER* (1994). While these shows attempt to depict the medical field, concerns persist regarding their accuracy in portraying healthcare realities. This study examines whether medical dramas hold relevance as adjunct content in medical curricula.

Through a questionnaire-based study, medical and nursing students (n=50) from the University of Birmingham were surveyed to assess their perspectives on the depiction of bioethical issues, terminological and procedural accuracy, and the potential educational benefits of these shows in clinical settings.

Participants reported key concerns, such as the prioritization of acute over chronic cases, exaggerated emergency scenarios, flawed representation of cardiopulmonary resuscitation (CPR) and ethical dilemmas. Despite these limitations, the majority (62%) of students highlighted the potential benefits of incorporating medical dramas into curricula to enhance clinical preparedness. Students also noted instances where they had learned medical terminology, gained career inspiration, and identified ethical dilemmas.

Although primarily designed for entertainment, medical dramas can facilitate critical discussions on ethical violations, rare diseases, and procedural demonstrations when analysed under academic supervision. These shows can contribute to a “hidden curriculum,” shaping expectations about hospital environments. Thoughtful curation and contextualization could allow medical dramas to enhance students’ clinical experiences and preparedness.

S11 - Moyes, Siobhan M[1], Katie M. Snow[2], Sara Sulaiman[3]

1. University of Plymouth, Plymouth, UK

2. University College Dublin, Dublin, Ireland

3. Royal College of Surgeons in Ireland (RCSI), Royal College of Surgeons in Ireland, Busaiteen, Bahrain

A practical guide to representative anatomy research

Anatomical research and education have historically privileged certain bodies,

contributing to systemic exclusion and health inequalities. This presentation explores how anatomists can adopt more inclusive research practices that recognise diversity and address historical biases. We examine how a range of research paradigms - from positivist to interpretivist - can be applied through an equity-focused lens to improve representation in anatomical studies. Key challenges include limited diversity within research teams, institutional constraints, resource limitations, and implicit bias. We propose practical strategies such as critical reflection on researcher positionality, ethical engagement with power dynamics, and meaningful collaboration with underrepresented communities. Particular emphasis is placed on co-production with marginalised groups to ensure research questions and methodologies reflect a broad spectrum of lived experiences. We also critique traditional competitive research models that may inhibit inclusivity and suggest alternative, collaborative frameworks. Finally, we consider the importance of disseminating findings in accessible formats beyond academic settings. By embracing more representative research practices, we can contribute to redressing historical inequities and generate more comprehensive, applicable knowledge that benefits all communities.

S12 - Aiman Ibrahim[1,3], Nafisa Zilani[1,2], Meryemnur Enver[1,4]

1. GKT School of Medical Education, King's College London, London, UK
2. Bart's Cancer Institute, Queen Mary University of London, London, UK
3. Royal Bolton Hospital, Farnworth, Bolton, UK
4. St George's University of London, London, UK

Anatomical education: are universities doing enough?

Anatomical education methods vary across UK medical schools and are often prioritised less than physiology and clinical placements in later years. To explore students' views on anatomy education, a questionnaire was conducted during an anatomy revision series organised by the Kings college London (KCL) Anatomy Society. Students rated their anatomical knowledge, university support, and the perceived importance of anatomy in clinical practice using a 5-point Likert scale (1 = strongly negative, 5 = strongly positive). They also identified their most-used study resources. The survey received 215 unique responses, with 194 from KCL and representation from 12 other medical schools. Overall, students rated anatomy as highly important (Median 5) and felt reasonably supported (Median 4). However, clinical-year students reported significantly less support than their pre-clinical peers ($p<0.001$, Wilcoxon test). Greater institutional support correlated with higher confidence in anatomical knowledge, particularly in abdominal anatomy. Over half of respondents found YouTube and dissection most

helpful for revision. Anatomy remains a valued subject among students. Further studies with a more representative sample outside of revision series would be useful to affirm these findings. Universities should enhance anatomical support, especially during clinical years. Despite shifts toward digital tools, dissection remains a favoured learning method, indicating its continued relevance in anatomical education. Ethical approval was not required for this study as it did not involve patients or sensitive personal data. Informed consent was obtained from all participating students for the use of their anonymised feedback data for research and educational purposes, and confidentiality was maintained throughout.

S13 - Channappa, Jeevitha, Alison Fernandes

Ashford and St Peter's NHS Foundation trust, Guilford Rd, Lyne, Chertsey, UK

Escape the operating room: a gamified experience for surgical decision-making

Escape rooms are an innovative educational tool, offering a dynamic, interactive alternative to traditional teaching. By embedding critical thinking, decision-making under pressure, and teamwork into time-bound, story-driven challenges, they simulate the high-stakes environment of clinical practice. This study explores the use of a surgically themed escape room to enhance medical student engagement, consolidate learning, and evaluate preparedness for clinical placements. A surgical escape room was developed and piloted at St Peter's Hospital for penultimate-year St George's University medical students. Learning objectives were aligned with GMC outcomes and the surgical undergraduate curriculum. Challenges reflected real-life clinical scenarios and core skills taught during placements, including: A-E assessment with Sepsis 6 initiation, differential diagnosis-matching via a Jenga puzzle, surgical incision recognition, suturing, CT interpretation, nasogastric tube insertion, and SBAR handover. A pilot run optimized delivery. Nine sessions were conducted in April 2025 with informed consent obtained. Sessions were video-recorded for ethnographic analysis, and participants completed Likert-scale questionnaires and open-ended feedback forms. All 26 participants were penultimate-year medical students, most with no prior gamified learning experience. Quantitative feedback was universally positive, with Likert scores between 4.4-5.0 across domains. Students strongly agreed that the escape room improved clinical reasoning, communication, and teamwork. Thematic analysis showed high engagement, appreciation for realism and challenge, and recognition of educational value. Some suggested extending the session duration. No negative feedback was recorded. Escape rooms offer a promising, immersive method for surgical education, promoting deep

engagement, contextual learning, and non-technical skills. This study supports their use as a complementary tool alongside traditional teaching to better prepare students for clinical practice.

S14 - Cheuk Ying Kyleen Kiew[1], Anuska Shah[1], Ameen Mahmood[1], Umar Rehman[2], Elena Whiteman[3], Karanjot Chhatwal[1,4], Samuel Arab[1,5], Michalis Hadjiandreou[6], Georgios Pafitanis[7], Peter Brennan[8]

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8. Department of Maxillofacial Surgery, Queen Alexandra Hospital, Portsmouth, UK

Anatomy curriculum and teaching: insights from final year medical students in the United Kingdom (ACTION-UK): a national collaborative study

Anatomy is fundamental to clinical competence, yet reduced contact hours, limited cadaveric access and technological reliance raise concerns about students' preparedness. This study evaluates practices, student perceptions, challenges, teaching quality and quantity of UK medicine anatomy education. A national cross-sectional survey was distributed to final-year medical students across 40 UK medical schools, assessing teaching quality, student satisfaction, confidence, impact of emerging technologies and challenges. Ethical approval was obtained (EERP2425-027, Imperial College). 628 final year medical students completed the survey. The majority preferred cadaveric dissection with virtual reality and 3D visualisation valued as adjuncts. More than 60% reported dissatisfaction with teaching continuity, anatomy integration with clinical practice and contact hours, whilst only 18% preferred resident doctors as their anatomy demonstrator despite increasing number of staff of such background. Challenges faced include volume of information (57%), spatial understanding (10%), complex terminology (29%), and limited hands-on experience (14%). Moderate satisfaction (45%-57%) was reported for assessment feedback, teaching quality, topic breadth and depth. Students are dissatisfied with curriculum content and structure, teaching hours,

quality, modalities and continuity. Anatomists, clinicians and academics should collaboratively develop standardised, clinically relevant curricula and incorporate emerging technologies to address barriers.

S15 - Dunne, Hannah[1, 2], Beth Sillince[1]

1. The Bridge Sexual Assault Referral Centre, University Hospitals Bristol and Weston, Bristol UK.

2. School of Anatomy, University of Bristol, Bristol, UK

Evaluation of bespoke anatomy education for Interprofessional Sexual Offences Examiners

Application of anatomical knowledge is a vital skill for Sexual Offences Examiners (SOE) to accurately describe and interpretate injuries noted in forensic medical examinations. Existing educational resources are challenging to relate to this specialised purpose, particularly as SOEs include doctors and nurses of varying grades, clinical backgrounds and anatomy expertise. In the development of a training course for clinical staff at The Bridge Sexual Assault Referral Centre, bespoke anatomy teaching materials were designed and delivered as part of a four-day course. Three sessions that focused on genital and surface anatomy were complemented by practical tasks to apply learning. We administered online surveys to attendees immediately after individual lectures or practical activities. These included both Likert scales and open questions. Feedback from 2025 participants was received at response rates between 57-100% per session (n=7). All respondents agreed this anatomy teaching helped increased levels of preparedness for clinical practice. Interactivity and bespoke reference images for future use was a key strength. Participants highlighted how mixed levels of anatomical knowledge within team groups was helpful when approaching tasks given. Further research into SOE levels of anatomical acumen and barriers to knowledge application will help guide both local courses and standardised forensic practitioner training.

S16 - Parks, Ruth[1], Jaz Seehra[2], Leia Boote[1]

1. School of Life Sciences, University of Nottingham, Nottingham, UK

2. Royal Derby Hospital, Derby UK

Use of whole-body cadavers to enhance surgical training in the East Midlands

In the post-COVID era, there was a need to create innovative cost-effective ways to enhance surgical training. We have developed a 12-day cadaveric

course in the East Midlands to provide extra training opportunities. Each day of the cadaveric course targets trainees from a different speciality: core surgical training, colorectal, upper gastrointestinal, hepatopancreatitcobiliary, vascular, ear nose and throat, maxillofacial, neurosurgery, cardiothoracic, breast, orthopaedics core, orthopaedics higher. Candidates perform simulated surgeries on fresh-frozen cadavers with supervision from Consultant faculty. The courses are run with support from the Deanery, University and industry partners to create an environment as close to the real-world as possible. The availability of fresh-frozen cadavers has decreased, and the cost increased. By bringing on board multiple surgical specialities, this is a cost-effective way to deliver excellent training to the maximal number of trainees. Feedback obtained directly from the participants shows that this type of training is highly regarded and described as "the next best thing" to real-life operating as well as directly contributing to successful completion of training outcomes. We have created a reproducible programme now run on an annual basis which can now target around 100 trainees across the region each year. Ethics Statement: Human Tissue Authority (licence number 12085). All donors in the facility have consented to being used for anatomical examination, education or training relating to human health, research in connection with disorders or the functioning of the human body

S17 - Baho, Yousif George, Ameera Cajucom, Sarah Ruth Pickin, Gurpreet Kaur Jandu, Mustafa Adwan, Peter Abrahams, Margaret K Gatumu

Brunel Medical School, Brunel University London, Middlesex, Greater London, UK

Anatomy of an anatomy atlas: creation of an anatomy atlas from labelled plastinated sectional slices

Appreciation of anatomy requires understanding spatial relationships but this is often perceived as difficult to learn. This understanding is essential for the modern doctor given the growing usage of cross-sectional imaging in clinical practice. Plastinated sectional slices (PSS) can be used to teach sectional anatomy. This work describes the creation of a labelled atlas of PSS which we use for teaching activities at our institution. Our anatomy glass slices, which are high resolution scans of PSS presented in acrylic, were photographed. They were then edited using Microsoft Photos application to enhance clarity and visibility of structures and collated on Microsoft PowerPoint. These were labelled in detail in collaboration with senior anatomists, with Cognitive Load theory considered to create a labelled atlas of our PSS. We have created a detailed, searchable electronic anatomy atlas of the human body, composed of labelled PSS which we currently use to assist and plan our teaching activities, with further scope to be used beyond lesson planning and teaching.

We have documented the workflow process to enable others to emulate our work for their own institute so that they can maximise benefit from their PSS.

S18 - Nafisa Zilani [1,2], Aiman Ibrahim [1,3], Meryemnur Enver [1,4]

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2. Bart's Cancer Institute, Queen Mary University of London, UK

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4. St George's University of London, UK

Enhancing anatomical confidence and surgical engagement through paired near-peer and clinician-led teaching: a year-long national anatomy teaching series

Anatomical knowledge is essential for clinical practice and surgical training. However, many students report limited confidence in their anatomical understanding and variable institutional support. We delivered a national teaching programme across one academic year to meet this gap, covering major body systems through paired sessions: general anatomy taught by medical students and clinical anatomy taught by clinicians. Sixteen paired teaching sessions (8 general anatomy, 8 clinical anatomy) were delivered. We had 313 students attend the sessions in total. Pre- and post-session questionnaires using 5-point Likhert scale assessed confidence in anatomical knowledge and interest in pursuing surgery. Statistical analysis was conducted using paired T-test and normality using Sharpiro Wilk. Qualitative feedback was also sought following each session. Data from all sixteen sessions showed a statistically significant improvement in self-reported anatomical confidence (p = 6.95— 10). Additionally, there was a significant increase in students' interest in pursuing a surgical career following the sessions (p = 6.93 10). Paired expert and near-peer teaching is a novel way to supplement anatomical education which has shown to significantly improve medical students' confidence in anatomy and positively influence their interest in surgery. These findings also support the value of this technique to enhance surgical engagement and preparedness amongst undergraduates. Ethical approval was not required for this study as it did not involve patients or sensitive personal data. Informed consent was obtained from all participating students for the use of their anonymised feedback data for research and educational purposes, and confidentiality was maintained throughout.

S19 - Dangerfield, Peter[1], Alan Moulton[2]

1. The University of Liverpool and Staffordshire University

2. Department of Orthopaedic Surgery, King's Mill Hospital, Mansfield UK

Further historical insight into the 19th Century Anatomy Museum in Liverpool

The 19th Century Anatomy Museum in Liverpool was first introduced to BACA members in 2024 and we were requested to provide an update, which is the reason for this new presentation.

Our Research has revealed more of the background to the owner, Joseph Woodward, in a new and perhaps rather dubious light, with no regard for ethical consideration as held today. Further research has contributed to the reasons why this museum (and others like it) developed in the 19th century and clearly met a need from some professional groups and the public. The museum was under pressure of closure from the local Magistrates with concerns relating to the nature of the material displayed. Woodward ceased to be the owner and some of its content was removed from the exhibition. However, with reduced content, the museum continued to offer access to exhibits until its closure in 1936. The extensive collection of waxworks was passed to Blackpool to a branch of Madame Tussaud's. Our research has also established the existence of museums in London and other cities in the UK, clearly meeting a demand from the public.

Posters

P01 - Duru, Dave[1,2], David Lee[1,2], Niel Kang[1,3], Salma Chaudhury[1,3], Cecilia Brassett[1].

1. Human Anatomy Centre, Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, UK;

2. Gonville & Caius College, University of Cambridge, Cambridge, UK;

3. Department of Trauma and Orthopaedics, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK.

Delineating the variable anatomy of the neurovascular bundle at the suprascapular notch: implications for surgical approaches and injections

The suprascapular nerve (SSN) may be compressed at the suprascapular notch, causing shoulder pain and dysfunction. Anatomical variation may complicate SSN decompression surgery and therapeutic injections. This study characterised variation of the neurovascular structures at the notch and assess their relationship to adjacent ligaments. Observations were made on 10 cadaveric shoulder pairs (n=20), including notch shape, presence of the anterior coracoscapular ligament (ACSL), and suprascapular nerve-artery-vein triad orientation relative to the superior transverse scapular ligament (STSL). Measurements of SSN and suprascapular artery (SSA) relative to notch borders were recorded. ACSL was present in 30% of shoulders bilaterally. U-shaped notches and Type I triad configuration (artery and vein above, nerve below STSL) predominated. The artery was significantly closer to the lateral STSL than the nerve ($p=0.0024$), placing it at greater risk in SSN decompression and lateral injections. STSL length correlated significantly with SSN distances from notch borders ($r=0.46$-0.87; $p<0.05$), suggesting nerve position is predictable, whereas SSA distance to lateral notch showed no correlation. Detailed knowledge of this variation enhances precision and safety of clinical interventions targeting the SSN. All donors had provided written consent for use of their bodies for anatomical research in compliance with the Human Tissue Act 2004.

PO2 - Rao, Eteesha, Meenakshi Swamy

School of Medicine, Newcastle University, Newcastle-upon-Tyne, UK

Variations in the anterior and posterior interventricular coronary arteries: a cadaveric study

Coronary artery variations can increase the risk of cardiac ischaemic

events and predispose patients to life-threatening complications during its management. The posterior interventricular artery, a branch of the right coronary artery, occupied only the proximal part of the posterior interventricular groove supplying both ventricles during cadaveric thoracic dissection. The right coronary artery then continued further for 35 mm within the left atrioventricular groove and then descended on the left ventricle parallel to the posterior interventricular artery, reaching the apex and supplying both ventricles distally. An unusually long 30 mm myocardial bridge was also found in the mid-segment of the left anterior interventricular artery. The artery continued distally for 44 mm in the anterior interventricular groove before terminating just before the apex. Literature shows that the most commonly seen myocardial bridging would be less than 25 mm. There are no reported cases documenting these rare variations of the interventricular arteries together. Recognizing multiple variations co-existing is essential before surgical or percutaneous procedures to prevent significant clinical complications. Long myocardial bridging may cause ischaemic distress due to coronary artery compression, increasing risk of myocardial ischemia, infarction, conduction abnormalities, and sudden death. We acknowledge the donor, and this study was conducted under HTA legislation.

PO3 - Channappa, Jeevitha, Esther Louise

Ashford and St Peter's NHS Foundation trust, Guilford Rd, Lyne, Chertsey, UK

Port to practice: simulation-driven laparoscopic skills for aspiring surgeons

Laparoscopic surgery is a key part of modern surgical practice, yet formal training often begins only at ST3 level. This project introduced a structured, registrar-led laparoscopic skills course for medical students and junior doctors, aligned with Royal College of Surgeons (RCS) guidelines. A five-day hands-on course was delivered over five weeks using box trainers and the VirtaMed LaparoS™ virtual reality simulator. The curriculum, based on RCS competencies, covered port insertion, camera navigation, instrument handling, and basic steps of laparoscopic appendicectomy and cholecystectomy. Fifteen final-year medical students and foundation doctors participated. Anonymized pre- and post-course questionnaires assessed confidence, knowledge, and satisfaction. All 15 participants completed the course. Pre-course assessments showed limited laparoscopic experience. Post-course feedback demonstrated significant improvements in confidence and perceived competence. Participants rated the course highly, with 100% advocating for earlier introduction of such training. Qualitative feedback emphasized the benefits of early exposure and structured skill development. This pilot course demonstrated that early laparoscopic training for junior

trainees and medical students is both feasible and impactful. Aligning the course with RCS guidelines and using a combination of simulation techniques effectively addressed a key gap in early surgical education. Positive feedback supports the expansion of similar initiatives to enhance preparedness and engagement in surgical careers from an earlier stage.

Learning Points: Early exposure to laparoscopic skills enhances junior trainees' and students' confidence and competence.

Structured, simulation-based training aligned with RCS guidelines is feasible and highly valued at undergraduate and foundation levels.

PO4 - Low, Chloe-Nicole, Lily Jermutus, Anthony Bright, Rudolf Billeter-Clark

School of Medicine, University of Nottingham, Nottingham, UK

3D Fascicle mapping of a human supinator muscle

The supinator muscle (SM) has a distinctive curved structure with a unique architecture that allows it to wrap tightly around the radius while protecting the deep branch of the radial nerve (DBRN) from compressive neuropathies. A layer-by-layer dissection and 3D scan of the SM of a cadaveric upper limb was performed, from which fascicle length, pennation angle and curvature were estimated. Individual scans were processed and combined into an overall 3D fascicle map. 218 fascicles were observed in 14 layers. The DBRN coursed between layers 7 and 8. Analysis revealed a positive correlation of layer with pennation angle (r_s= 0.411, $p < 0.01$) and a negative correlation of layer with fascicle length (r_s= -0.301, $p < 0.01$). The SM exhibited a significantly more pronounced curvature compared with individual fascicles (Mann-Whitney U-value= 5.00, $p < 0.001$). These suggest that superficial fascicles predominantly stabilise the elbow during supination, while deeper fascicles contribute more towards supination. Additionally, pennation fine-tunes the inward pressure, distributed over a large area by a large fascicle insertion distance. The correlations revealed a nuanced structural adaptation, enabling individual fascicles to contract without compromising the integrity of the SM or the DBRN, with a portion of this force dedicated to stabilising the elbow during supination.

PO5 - Mackintosh, Calum

The University of Leeds, Worsley Building, University of Leeds, Woodhouse, Leeds, UK

Brachial plexus and restorative nerve transfers: an anatomical case study

The Brachial plexus innervates the majority of the upper limb, making injuries to it catastrophic. Brachial plexus injury is usually supraclavicular, affecting the upper roots of the plexus resulting in loss of elbow flexion and shoulder abduction. Nerve transfers, where a denervated nerve is reinnervated by transferring a functioning nerve, are especially efficacious for severe brachial plexus injuries but debate remains around their use when compared to alternative procedures such as nerve grafts. This is due to the varying effectiveness of transfers depending on the donor nerve used and transfers requiring the loss of a lesser nerve function. However, as nerve transfers provide a faster time to reinnervation and allow the surgeon to avoid the field of the original injury, they are increasingly popular in the management of brachial plexus injuries. This research project was a single cadaveric dissection of the upper limb, highlighting the underlying anatomy of the brachial plexus. The study focused on the restoration of elbow flexion and shoulder abduction to facilitate discussion about the management of brachial plexus injuries, viable nerves for transfer and anatomical variation which may be encountered during an operation. We concluded that nerve transfers are a viable alternative to traditional methods.

Ethics Statement: Please note cadaver used in this research project was sourced as part of University of Leeds Clinical Anatomy BSc, all institutional guidelines from HTA with regard to sourcing, treatment of cadaveric material and use of images from dissection have been followed appropriately.

PO6 - Sualeh Muhammad, Jibran; Golden, Olivia; Ali, Naila; Iliya, Ibrahim

Human Anatomy Unit, Biomedical Sciences, College of Medicine and Health, University of Birmingham, Birmingham, UK

Ligaments of the ankle joint: evaluation of dimensions and morphology for enhancing surgical reconstruction

Ankle injuries involving ligament trauma can lead to long-term disability and reduced quality of life. Reconstructive surgery is a key treatment option, requiring precise anatomical knowledge for optimal outcomes. This study presents qualitative and quantitative analyses of the anatomy of both medial and lateral ankle ligaments, providing detailed morphological descriptions alongside precise measurements to enhance the accuracy of reconstructive

surgical techniques. Ten ankles (from three male and two female cadavers) were dissected to evaluate the lateral and medial (superficial and deep) ligaments. Vernier callipers were used for measurements, and morphological features were recorded. Comparisons were made between right and left ankles and between sexes. Three morphological variations of the calcaneofibular ligament (CFL) and two of the anterior talofibular ligament (ATFL) were identified. The posterior talofibular (PTFL), tibiocalcaneal (TCL), tibionavicular (TNL), anterior tibiotalar (ATTL), and posterior tibiotalar (PTTL) ligaments displayed consistent morphology. No statistically significant differences in ligament dimensions were found between sides or sexes. The anatomical measurements established in this study provide valuable reference points for surgical planning involving the ankle ligaments. Precise knowledge of the distances from palpable surface landmarks to ligament attachment sites can assist surgeons in accurately identifying and reconstructing ligamentous structures during ankle ligament reconstruction procedures.

Ethical Statement: All donors had provided written consent for use of their bodies for anatomical research in compliance with the Human Tissue Act 2004.

P07 - McLaughlin, Molly, Jenny Clancy

School of Medicine, Dentistry and Nursing, University of Glasgow, Glasgow, UK

Investigating the effect of sex, age, and BMI on hyperostosis frontalis interna (HFI) incidence and severity

Hyperostosis frontalis interna (HFI) is characterised by excess bone growth on the posterior surface of the frontal bone. It affects 5-12% of the population, however rates have recently risen. The factors influencing HFI prevalence and severity remain inadequately understood. This study aimed to determine if there was any association between sex, age, or BMI and HFI prevalence or HFI severity. Dissection of 21 body donors (14 female:7 male; 63-96 years) was undertaken under the Anatomy Act 1984 and Human Tissue (Scotland) Act 2006. The calvariae were removed and HFI presence and severity were graded. HFI was found in 67% (14/21) of donors and more females (78%; 11/14) had HFI compared to males (42%; 3/7), however, this was not statistically significant (prevalence p=0.25). There was also a trend towards increased HFI prevalence and severity with increased age and higher BMI, however this was not significant (age: prevalence p=0.14; severity p=0.33; BMI: prevalence p=0.29; severity p=0.33). This study found a substantially higher prevalence of HFI than the existing literature, however, this is based on

an older sample group. The high prevalence of HFI in the elderly population merits further investigation of the factors influencing this and the potential impact on the brain.

PO8 - Dinesh, Advait, Parth Thakkar

Section of Anatomy, City St. George's University of London, London, UK

Understanding the medical and surgical implications of accessory spleen

An accessory spleen is a congenital condition resulting in splenic tissue forming in ectopic sites in the abdomen. This literature review aims to identify the common sites of accessory spleen (AS) formation and its occurrence in the population. It will also include why AS is relevant to surgeons when diagnosing masses found in abdominal scans of patients with acute abdominal pain. This study examined case reports from PubMed and Google Scholar, and results were discussed, showing that AS was frequently misdiagnosed as a neoplasm. Cadaveric studies were also included in this review to see how the results from case studies compare to studies where the sample size is larger, when looking at the site and prevalence of AS . Some comparisons made were that the most common sites of AS formation were at the spleen's hilum and the pancreas's tail. Prevalence of AS in the cadaveric studies ranged from 0% to 23%, and in both case reports and cadaveric studies, cases of multiple AS were reported. AS can often be asymptomatic or result in pathologies such as torsion, which patients can present with in the emergency department. SPECT-CT and histology examination were identified as potentially accurate diagnostic tools for AS pre-operatively.

PO9 - Gargan, Lauren; Bryant, Michael; Hall, Richard M

School of Engineering, University of Birmingham, Birmingham, UK

Complex bone surrogates for evaluation of orthopaedic implants

Orthopaedic implants are typically evaluated using cadaveric bone due to its anatomical and mechanical similarity to human bone. However, cadaveric bone is highly variable with physiological factors leading to uncertainty in test results. Bone surrogates offer a more consistent alternative, particularly in early-stage research, although concerns remain relating to their performance and the lack of standardisation in characterising these structures for procedure-specific applications. This systematic review, following the protocol outlined by the PRISMA-P methodology, synthesised findings from 85 papers on the mechanical characterisation methods and associated

properties of bone surrogates, with results demonstrating significant variations in study design, thus restricting the potential for comparison. Due to the hierarchical structure of bone, its mechanical properties are highly influenced by anatomical factors, meaning researchers must ensure surrogate properties align with data from cadaveric bone of the same physiological condition. Improvements of the specifications, standards, and protocols for production and characterisation of bone surrogates would allow for greater understanding of research gaps that must be addressed prior to replacement of cadaveric bone in orthopaedic research. By consolidating current research, this review aims contribute towards the development of future surrogates capable of representing the complex anatomical and mechanical properties of bone during procedure-specific applications.

P10 - Fisher, Megan

Basingstoke and North Hampshire Hospital, Hampshire Hospitals NHS Foundation Trust, Hampshire, UK

Isolated femoral nerve palsy secondary to iliacus haematoma in absence of trauma, anticoagulation or bleeding diathesis: a case report

Iliacus haematoma is an uncommon but clinically significant cause of femoral nerve palsy, often associated with trauma or anticoagulation. We present a case of spontaneous iliacus haematoma in an elderly patient, resulting in isolated femoral nerve dysfunction. An 81-year-old female with a history of a total hip replacement (THR) ten years prior presented with sudden onset of severe right groin and anterior thigh pain, following routine gym activity with no history of trauma. She displayed isolated femoral nerve palsy, with weakness in right knee extension and reduced sensation in the femoral nerve distribution. CT imaging revealed an intramuscular haematoma contained within the right iliacus and adductor muscles. MRI of the pelvis clarified the anatomical locus, revealing a collection within the right iliopsoas bursa and associated diffused oedema within the illiacus. The patient was managed with ultrasound-guided drainage of the haematoma, analgesia and physiotherapy which enabled partially recovery of motor strength over two weeks. This, along with a growing body of existing evidence, emphasises the importance of early intervention for regaining femoral nerve function. We believe this case of iliacus haematoma is unique in the literature due to the absence of any clear trauma, bleeding diathesis or anti coagulation.

P11 - Proctor, Thomas ; Gouldsborough, Ingrid

University of Manchester, Manchester, UK

Anterior and posterior dissection of the male pelvis to visualise the genitourinary system: a comprehensive approach for medical education

Understanding the complex spatial relationships of the male genitourinary system is essential for medical students. Current pelvic prosections provide limited visualisation of this complex system. This project aimed to develop a dissection technique to expose the continuous genitourinary tract of the male pelvis and external genitalia insitu.

A male pelvis, held under the Manchester University Human Tissue Act (2004) license with additional consents for retention of parts and photography, was dissected. The anterior abdominal wall was reflected and pubic bodies, symphysis and dorsum of the penis removed. Incisions were made in the superior aspect of the inferolateral bladder walls to expose the internal surface. The inferior sacrum, coccyx, posterior half of pelvic floor and rectum were removed.

This procedure yielded a 360° view of the genitourinary system in-situ, including the bladder, prostate, seminal vesicles, vas deferens, urethra and bulbourethral glands. The trigone, ureteric and urethral orifices of the bladder, and the spongy urethra were exposed.

This approach provided a specimen which shows the male pelvic genitourinary system in its entirety. As a teaching resource, this should allow students to gain a greater understanding of the anatomical relationships between the inter-related organs which is critical to surgical practice and clinical diagnostics.

P12 - Cheung, Simon, Meenakshi Swamy

University of Newcastle, Newcastle, UK

Bilateral common carotid artery kinking: a cadaveric case study

The common carotid arteries vitally supply the head and neck structures including the brain. Although unilateral common carotid artery (CCA) kinking has rarely been reported, our exploratory cadaveric dissection study identified bilateral symmetrical kinking in the neck that would add to literature on variations of CCA. The left CCA coursed vertically for 15 mm above the sternal notch and then looped laterally 35 mm from the midline parallel to the clavicle, reaching the inferior belly of the omohyoid.

The height of the loop was 30 mm. The right CCA also looped laterally 20 mm from the midline parallel to the clavicle, near its origin from the brachiocephalic trunk 25 mm above the sternal notch. The height of this loop was 25 mm. Both the loops turned cranially 20 mm from the lateral edge of the loop to ascend upwards. The vagus nerves and internal jugular veins followed a normal linear course. Awareness of this variation is clinically significant during neck surgeries and may impede endovascular passage of guidewires/ during interventional techniques. Kinking of the CCA is associated with cardiovascular events in asymptomatic patients with cardiovascular risk factors. We thank the donor and the work was conducted under HTA legislation.

P13 - Sam, Femina[1], Rubina Rachel Chandy[1], Anita Shirley[2], Suganthy Rabi[1]

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Analysis of the expression of L-selectin ligands and immune cells in the epithelium of the human fallopian tube

L-selectin ligands play a critical role in blastocyst adhesion and implantation. While the endometrium is the primary site of implantation, tubal pregnancy remains common. This study aimed to describe the expression of L-selectin ligands and CD4+ and CD8+ T lymphocytes in ectopic, pregnant, and non-pregnant fallopian tubes. Nineteen fallopian tube specimens obtained from the three cohorts were stained using MECA-79, rabbit CD4, and mouse CD8 monoclonal antibodies, with the number of intraepithelial CD4+ and CD8+ T lymphocytes and L-selectin ligands measured per unit length of the basement membrane. L-selectin ligands were consistently expressed in all cohorts, contradicting previous reports of their absence in non-pregnant tubes. CD8+ T lymphocytes predominated across all groups, while the non-pregnant cohort showed the lowest CD4+ T cell levels. Notably, the ectopic pregnancy group demonstrated a significant increase in CD4+ T cells, indicating immune activation due to ectopic implantation, and this rise showed an inverse correlation with L-selectin ligand expression. L-selectin ligands in the tubal epithelium, even in the absence of pregnancy, suggest a baseline receptivity similar to that of the endometrium. Further studies are needed to explore the hormonal and molecular regulation of L-selectin and immune cells and to correlate with the endometrial changes. This study received ethical approval from the Institutional Review Board and Ethics Committee (IRB Minute: 12465). The collection of fallopian tube specimens was carried out following patients' informed consent.

P14 - Rajesh, Arya

Aston University, Birmingham, UK

Literature review: mechanisms of radiotherapy resistance in glioblastoma

Glioblastoma is an aggressive and common primary brain tumour in the adult population, with standard treatment approaches, including surgery, radiotherapy, and chemotherapy, offering limited long-term survival benefits. A major contributor to poor outcomes is tumour resistance to radiotherapy, which is driven by complex biological mechanisms such as immune evasion and enhanced survival of tumour cells under stress. This review explores current experimental research on radiotherapy resistance in glioblastoma, with a particular focus on human studies involving children and adults, excluding older populations. A total of 135 articles were identified through recent literature searches, from which three studies were selected based on strict inclusion criteria prioritising clinical relevance and methodological quality. These studies reveal consistent patterns, including increased expression of molecules involved in immune evasion and the activation of pathways that promote tumour cell survival and stem cell-like properties post-radiotherapy. Such mechanisms are believed to contribute to both treatment resistance and tumour recurrence. Overall, this review highlights the urgent need for targeted therapeutic strategies that address the specific pathways driving radiotherapy resistance. Greater understanding of these mechanisms, particularly in younger populations, may support the development of more effective, personalised treatment approaches in glioblastoma care.

P15 - Chapman, Benjamin G.[1,2]; Klaourakis, Konstantinos[1,2]; de Villiers, Carla[1,2]; Gunadasa-Rohling, Mala[1]; Cosma, Maria-Alexa[1,2]; Cooper, Susanna[1,2]; Carr, Carolyn A.[1]; Greaves, David R.[3]; Jackson, David G.[4]; Pezzolla, Daniela[5]; Choudhury, Robin P.[5]; Vieira, Joaquim M.[1,2,6]; Riley, Paul R.[1,2]

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Differential Maturation of Cardiac Lymphatics Governs Macrophage Clearance and Regenerative Capacity in the Neonatal Mouse Heart

The neonatal mouse heart possesses a remarkable capacity for regeneration following myocardial infarction (MI), present at postnatal day 1 (P1) but lost by P7, when fibrosis persists. Macrophages are established as central to this regenerative process, but their dynamics and crosstalk with cardiac lymphatic anatomy remains poorly defined.

Here, we demonstrate marked developmental differences in cardiac lymphatic architecture and function between P1 and P7 mice. Using high-resolution tissue clearing and confocal imaging, we quantified macrophage drainage to mediastinal lymph nodes (MLNs) compartments post-injury. Surprisingly, lymphangiogenesis and macrophage clearance were minimal at P1, coinciding with immaturity in lymphatic endothelial junction development.

Knockout of lymphatic receptor LYVE1, responsible for facilitating transmigration of macrophages into the lymphatics, impaired functional recovery even at P1, despite the apparent lack of macrophage trafficking at this timepoint. Conditional deletion of *Lyve1* in macrophages recapitulated this effect, revealing a novel role for LYVE1 in maintaining the regenerative capacity of tissue-resident macrophages.

These findings highlight the morphological immaturity of the cardiac lymphatics as a key determinant of macrophage dynamics and regenerative potential. We propose that the immature cardiac lymphatics at P1 facilitates pro-regenerative tissue resident macrophage retention, favouring regeneration, while subsequent maturation enables clearance and fibrosis of pro-inflammatory populations. All animal experiments were carried out according to UK Home Office project licences PPL PC013B246 and PDDE89C84 and were compliant with the UK Animals (Scientific Procedures) Act 1986.

P16 - Katti Karuna[1], Montserrat Rayman Silva[2], Revers Donga[2]

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Enhancing assessment objectivity in dental education: transitioning from viva-voce to OSPEs

Assessment in dental education plays a pivotal role in ensuring that fresh graduates possess the necessary competencies for safe clinical practice.

Traditional viva-voce examinations have long been used to evaluate students' depth of understanding and critical reasoning. However, concerns about examiner bias, inconsistent questioning, and grading have underscored the need for a more structured approach. This on-going study explores the advantages and disadvantages of transitioning from viva-voce assessments to Objective Summative Practical Examinations (OSPEs) at the University of Birmingham School of Dentistry. Beginning in the academic year 2022-23, standardized stations with objective scoring criteria were introduced, eliminating inconsistencies and fostering fairness across candidates. By providing equitable examination conditions and improving inter-rater reliability, OSPEs have enhanced transparency and aligned with competency-based education frameworks. This shift has boosted student confidence in the assessment process and reinforced the evaluation of practical skills rather than subjective reasoning. While logistical challenges and examiner calibration require continued refinement, OSPEs present a promising strategy for strengthening assessment objectivity. Future research should evaluate the impact of this transition on student performance and perceptions while comparing assessment reliability across various institutions. The adoption of OSPEs marks a progressive step toward ensuring fairness and accuracy in dental education assessments.

P17 - Muflahi, Islam, Noor Al-Antary, Sami Al-Ani, John Delieu, Claire Stocker

Aston Medical School, Aston University, Birmingham, UK

Evaluating the impact of 'Complete Anatomy' on early-year medical education

Integration of digital tools in medical education is transforming the way students learn, providing a better understanding of complex subjects like anatomy. For generations, it has been a difficult hurdle for students in anatomy-based courses to overcome, resulting in a range of teaching methods being developed to allow students to seize a greater understanding of their learning. This study assesses the effectiveness of "Complete Anatomy", a 3D anatomy teaching platform, in early-year medical education. Utilising a mixed-methods approach, data were collected through student and staff surveys and student focus groups to identify key challenges and potential improvements. Results indicate that while "Complete Anatomy" offers significant benefits in visualising complex anatomical structures and engaging diverse learning styles, technical issues and navigation difficulties hinder its full utilisation. Faculty members also expressed similar concerns regarding the need for enhanced technical stability and better integration

with traditional teaching methods. The study's recommendations include improving technical support, aligning content with curricular needs, and adopting a blended learning approach alongside traditional teaching methods such as cadaver dissections and plastic models to maximize the platform's effectiveness. Similarly, strategies to increase student engagement like group learning activities can help boost the effectiveness of its usage. These recommendations aim to enhance both the technical functionality and educational impact of Complete Anatomy, fostering a more engaging and effective learning environment for medical students.

P18 - Enedegbo Triumphant[1], Chukwu, Jemima A[2], Natasha Russell[1]

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2. Anatomy Unit, School of Infection, Inflammation and Immunology, College of Medicine and Health, University of Birmingham, Birmingham, UK

Pec-uliar findings: a case report of bilateral presentation of the sternalis muscle observed during cadaveric dissection

The sternalis muscle is a rare anatomical variant located superficial to pectoralis major muscle and parallel to the sternum, with reported prevalence ranging from < 1% to 18% across populations. This case report documents a bilateral presentation identified during dissection of a 55-year-old British male body donor accepted by the Human Anatomy Unit, University of Birmingham. The donor had no history of thoracic surgery or congenital anomalies, and cause of death was unrelated to musculoskeletal or cardiovascular pathology. Bilateral sternalis muscles were identified, each located superficial to the pectoral fascia. On the right, the muscle extended from 3rd to 7th costal cartilage, measuring 10.5 cm in length and 2.0 cm in width. On the left, it spanned the 4th to 7th costal cartilage, measuring 8.5 cm x 1.0 cm with a curved insertion. No identifiable neurovascular structures were observed, in contrast to previous reports of innervation by intercostal nerves and supply from the internal thoracic artery. This bilateral occurrence contrasts with the more commonly reported unilateral variant and demonstrates asymmetry in size, orientation, and insertion. The sternalis muscle may mimic pathology on imaging and affect thoracic or reconstructive procedures. Awareness of such variations can aid in accurate imaging interpretation, improve surgical safety, and enhance anatomical understanding.

P19 - Alyahya, Khaleel

Clinical Anatomy Lab, Department of Anatomy, College of Medicine, King Saud University, Riyadh, Saudi Arabia

Incidence of cruciate ligament injuries in Saudi professional soccer league in the past 20 years

This study aimed to report the incidences and causes of cruciate ligament (CL) injuries in the Saudi professional soccer league in the past 20 years. Additionally, this study also aimed to measure the association of the most common causes of injuries with age and the rate of injury recurrence in the Saudi professional soccer league. This descriptive epidemiology study combined published information online, TV news, and newspapers, about players and teams in Saudi Professional Soccer League from the year 2000 to 2020. Data were analyzed with graphs and tables of CL injury incidence by club type, frequency of matches, the position of players, age, and causes of injury. In addition, we also assessed the recurrence of injury among the players. Our results revealed that CL injury is common among players in the Saudi professional soccer league. Contact with other players or opponents is the leading cause of this injury (61.9%). In terms of players' position and CL injury, the centre midfielder is more susceptible (34.9%) than players in other positions. Age-wise, young players between 20-25 yrs (42.9%) and 25-30 years (39.7%) of Soccer age sustain more injuries than older players (14.3%). The incidence of injury among Saudi players during this time was higher than that recorded for the non-Saudi professional player. In our study, we found that CL injury is established among players in the Saudi professional soccer league most of which was due to contact with another player. Our findings can serve as a valuable reference to understand how the frequency of participation in the match, and pressure from media and fans could affect players' performance and contribute to the cause of injury.

P20 - Dangerfield, Peter[1], Alan Moulton[2]

1. The University of Liverpool and Staffordshire University

2. Department of Orthopaedic Surgery, King's Mill Hospital, Mansfield UK

Plaques and other commemorations of Anatomists in Europe

Travelling and visiting Europe over some years has by chance revealed how eminent anatomists are often commemorated by plaques on Churches, in villages or with Parks named in their honour. In France, visitors to the Perigord (Dordogne) will find an interesting memorial at Saint-Avit-Senieur,

South-East of Bergerac, dedicated to Léo Testut. Professor of Anatomy in Lyon. In Italy, on a visit to the small town of Gimignano in Tuscany might lead you to large plaque on a Church dedicated to Girolamo Grifoni, an anatomist in Siena. In Bologna, there is a park dedicated to Oliviero Mario Olivo. He was known for his scientific work in embryology and the growth of the nervous system. as well as being a WW1 distinguished soldier.

P21 - Yerokhina Viktoriia

School of Medicine and Dentistry, University of Central Lancashire, Burnley, UK

From cadavers to clicks: transforming anatomy spotter exams for BMedSci students

The traditional in-person anatomy spotter exam - using specimens and physical models - has long been central to anatomical assessment. However, logistical challenges such as limited invigilator availability, time constraints, and room shortages have led to the adoption of digital spotter exams for BMedSci students at the University of Central Lancashire. These are now delivered via the Maxinity platform, using high-quality dissection images in a controlled computer-room setting. Since the transition, pass rates have improved notably - from 52.2% to 72.0% in 2023, and 67.3% in 2024 - with students reporting reduced anxiety and improved focus. The digital format offers multiple benefits: standardised image quality, randomised question order, time flexibility, automatic result analysis, and reduced staffing demands. It also supports accessibility, improving inclusivity for diverse learners. Despite these strengths, the digital approach has limitations. It lacks the tactile, three-dimensional interaction offered by physical specimens - an important aspect of anatomical understanding. Some students find it difficult to interpret structures from static images, and staff face ongoing challenges with question development, image quality control, and academic integrity. Overall, while digital exams improve practicality and student outcomes, integrating physical elements through a hybrid approach may offer the most effective assessment model.

P22 - Parks, Ruth[1], Susie Hamad[2], James Ng[3], Jaz Seehra[2], Leia Boote[1]

1. School of Life Sciences, University of Nottingham, Nottingham, UK

2. Royal Derby Hospital, Derby, UK

3. Nottingham University Hospitals, Nottinghamshire, UK

Use of cadaveric prosections to enhance surgical training in the East Midlands

Core surgical trainees (CSTs) are required to have detailed anatomical knowledge to assist with diagnosis of surgical conditions and develop operative skills. These elements are tested in a formal examination which must be passed by the end of CST. In the East Midlands we have developed a bespoke training programme, using prosections in the University of Nottingham Dissection rooms. Small group teaching led by dissection room anatomists, cover: head and neck; upper limb; lower limb; chest; abdomen; pelvis. These are run over two full-day sessions on an annual basis. Additional sessions are held in the run up to each formal examination for revision and mock examination based on the subjects requested by the trainees imminently about to sit the exam. These are run over three half-day sessions. Feedback obtained directly from the participants shows that this type of training is highly regarded and important both for clinical practice and examination success. There are minimal courses of this kind available in the UK and where available, they often come with a hefty fee. These courses are now part of the annual teaching schedule for CSTs and improvements are continuously made based on feedback.

P23 - Delieu, John Michael[1,2], Noor Al-Antary[1], Sami Al-Ani[1], Claire Stocker[1], Andrew Biggs[2].

1. Aston Medical School, Aston University, Birmingham, United Kingdom;

2. Anatomy Department, Robert Jones and Agnes Hunt Orthopaedic Hospital NHS Foundation Trust, Oswestry, Shropshire, United Kingdom.

Maintaining a Repository of Historical Artifacts in the 21st Century; teaching historical and pathological processes

The past often depicts the future; recent rises in syphilis and TB, to name but two. With requirements of the HTA, many establishments were actively disposing of their archives of pathological specimens. Also, with the demise of a lot of traditional Anatomy Departments, due to mainly costs and HTA regulation, there is the potential of losing and forgetting the historical past. Bones can indicate a vitamin deficiency (rickets), a bacterial state (syphilis),

work related (traction exostosis), trauma (malunion of long bone fracture), indeed, a window to the historical past. With the advent and rapid progress in medicine, they quickly became treatable. There is an interesting collection of historical artifacts, held in the Anatomy Department of the Robert Jones and Agnes Hunt Orthopaedic Hospital. This collection reminds one of the devastations that these conditions had on societies, e.g. mortality of fractured head of femur was 80% until the advent of the Thomas splint, when this was reduced to 20%. Many specimens are unique in that they show pathology of past diseases, such as rickets, syphilis, occupational abnormalities, and trauma. The collection will be an important repository, for future generations, and emphasises the importance of having access to historical collections and in the understanding of pathological processes.

P24 - Dunne, Hannah[1,2], Seyedeh Shahrzad Mirza Torabi[1], Scott Abbott Paterson[1], Michelle Spear[1]

1 - School of Anatomy, University of Bristol, Bristol, UK

2. The Bridge Sexual Assault Referral Centre, University Hospitals Bristol and Weston, Bristol, UK

Ethical considerations in the use of student volunteers for ultrasound-based clinical anatomy teaching

Student volunteers have been used effectively to facilitate teaching around clinical examination, surface anatomy and professionalism. However, radiological investigation of students is not without risk, and previous research has highlighted the need for robust consent and safety planning procedures. Given the serious potential consequences of unethical use of students in ultrasound practices, the need for standardisation of ethical approaches is evident. In the redesign and delivery of applied anatomy teaching for second year medical students, review of existing literature and collaboration with colleagues helped inform our ethical framework. We synthesised the body of existing evidence and reflected on how we avoided ethical dilemmas. Autonomy and informed consent are crucial factors yet done variably and subject to recruitment bias. From a beneficence perspective, ultrasound requires trained clinical and educational staff to ensure delivery to a high-quality. Risk of incidental findings during scanning poses a threat to non-maleficence principles and creates logistical challenges in arranging appropriate pre-scanning, counselling and follow-up. Finally, given the increasing strain on the NHS, we reflect on the equitable use of ultrasound among a large student cohort and how boundaries between anatomical education and medical care may become blurred. Future research into student volunteer perspectives is needed.

P25 - Khamuani, Munesh Pal[1], Naila Ali[1], Maria Chalasti[1], Aaron Murray[1], Louise Hickey[1]

School of Medicine, University of Nottingham, Nottingham, UK

Redesigning a content-heavy anatomy module: a framework-based proposal for flipped, focused, and formative learning

Teaching musculoskeletal (MSK) anatomy to medical students can be challenging for both learners and educators due to high content volume. Through analysing recent module evaluation surveys at the University of Nottingham, we identified key areas for improvement in the Graduate-Entry Medicine (GEM) MSK module. To address these, we propose an innovative redesign of the MSK module using the ADDIE instructional design model. The module evaluation survey highlighted issues with cognitive overload, difficulty identifying core anatomical structures, and limited retention of anatomical knowledge. Proposed innovations include: a flipped classroom model using custom preparatory videos, followed by point-of-care ultrasound (POCUS) sessions and weekly low-stakes formative quizzes. There are also opportunities for learner self-assessment reflections, weekly learning roadmaps, and peer-led review sessions. This redesign aims to reduce student stress and burnout related to MSK anatomy education while consolidating anatomical knowledge through flipped delivery, formative assessment and active engagement strategies. Impact will be evaluated through analysis of student feedback, quiz performance trends, and qualitative interviews. Piloting this approach allows iterative refinement based on student feedback, supporting a sustainable cycle of curriculum improvement.

P26 - Krishan Patel[1], Karuna Katti[2], Cecilia Brassett[3]

1. Birmingham Medical School, College of Medicine and Health, University of Birmingham

2. Lancaster Medical School, Faculty of Health and Medicine, Lancaster University

3. Human Anatomy Centre, Department of Physiology, Development and Neuroscience, University of Cambridge

Beyond the textbook: the impact of immersive technology compared to traditional approaches in anatomy education

Traditional anatomy education consists of textbooks, physical models, and cadavers all with varying engagement, spatial understanding and knowledge acquisition. This literature review evaluates the effectiveness of immersive technology (virtual, augmented and mixed reality) as novel alternatives in comparison to more traditional approaches. A systematic search of PubMed,

Embase and Cochrane databases yielded 590 results. Applying a pre-defined inclusion criteria identified 15 relevant systematic reviews. A subsequent search, based on the most recent review, added 10 relevant randomised controlled trials (RCTs). Results reveal a heterogenous and context-dependent picture. While only 33% of systematic reviews recommended immersive technology over traditional methods, 93% suggested immersive technology to be used alongside other approaches. All 10 RCTs identify immersive technology as valuable, either independently or combined with traditional methods. Some studies demonstrate immersive technology as improving knowledge acquisition and examination performance; others report comparable or inferior results. However, immersive technology consistently enhances student engagement, enjoyment and motivation. This review also identified limitations to immersive technology such as cybersickness and technical issues. Current evidence is inconclusive on its superiority over traditional approaches. Immersive technology shows significant promise for integration into anatomy education. However, immersive technology should supplement, not replace, traditional approaches until more conclusive evidence emerges.

P27 - Rayman, Montserrat Silva, Abdul Ahmad, Asmita Goswami, Leandros Rapteas

University of Birmingham, Birmingham, UK

Towards inclusive anatomy education: a pilot study on the impact of diverse genital models and perceptions of representation in the curriculum

The anatomy curriculum often presents a narrow view of the human body, underrepresenting cisgender female anatomy, excluding transgender bodies, and pathologizing intersex variations. This limited scope reinforces systemic bias and contributes to health inequalities. This mixed-methods pilot study explored whether exposure to inclusive anatomical models of the external genitalia and perineum could influence perceptions of curriculum inclusivity and participant confidence and comfort with diverse anatomies. Students (n=19) and staff (n=8) from the University of Birmingham's MBChB programme engaged with hybrid 3D-printed and wax models representing cisgender female, transgender female, and intersex perineal anatomy. Pre- and post-session Likert-scale surveys assessed changes in attitudes and self-reported knowledge. Participants consistently agreed that anatomical variations should be taught, and that more inclusive anatomical education is needed. Positive shifts were observed in confidence and comfort levels, particularly in understanding transgender and intersex anatomy, though no changes reached statistical significance. The only post-session decline

observed was in participants' perception of the current curriculum's adequacy in representing diverse bodies. Given the small sample size and potential self-selection bias, future research should involve larger, more diverse participant groups on a national scale. Studies should also evaluate long-term impact of inclusive anatomical interventions on clinical competence and educational equity.

P28 - Arenyeka, Moyowa

University of Plymouth, Plymouth, Devon, UK

Integrating radiology with anatomy teaching in the undergraduate medical curriculum

Medical imaging plays a critical role in the diagnostic process across varying medical specialities, not just in radiology. Due to the rising demand for radiological imaging, there is an increasing need for doctors to possess the skill of accurately interpreting imaging. As imaging is a valuable diagnostic tool, its accurate interpretation is paramount for reducing diagnostic errors and their associated harm. Therefore, this emphasises the importance of undergraduate medical curricula to adequately equip medical students with a strong understanding of radiological anatomy, to appropriately prepare them for practice. This study explores different strategies for integrating radiology into anatomy teaching, to enhance students' imaging interpretation skills. Strategies include integrating radiological teaching into traditional lectures and small group settings. Additionally, clinical exposure through placement is highlighted as valuable. Different technologies can also be leveraged within these learning environments. The aim of an integrated approach is not to replace traditional anatomy teaching, but to supplement it by enhancing anatomical understanding in a clinically contextualised manner. Improving the quality of radiology education can subsequently prepare future doctors to manage radiological imaging appropriately, which would benefit patients long-term.

P29 - MacKay Murray, Michelle Spear

University of Bristol, Bristol, UK

The Influence of Anatomical Space on Cancer Prognosis

The influence of anatomical spaces on cancer prognosis has not been previously described. Anatomical spaces exist as true spaces (for example, fossae and lumens), and potential spaces. Gastric and oesophageal cancers grow into open lumens and can be asymptomatic until they cause obstructive symptoms. The width of a lumen is shown to influence prognosis of gastric cancer, the narrower lumen of the distal stomach results in earlier symptomatic presentation. This relationship did not transpose to oesophageal carcinomas. Despite a narrower lumen, they present at a later stage than gastric cancer. The structure of oesophageal lymphatics likely outweighs width of lumen in determining prognosis. Ovarian cancer grows into the ovarian fossa (an open space). Their late presentation is attributed to non-specific symptomology. Early-stage tumours are often larger than late-stage tumours; larger tumours occupying a greater area may present earlier as they elicit symptoms. Pleural mesothelioma and primary peritoneal cancer exist in potential spaces, they are often aggressive and difficult to treat. This overview aims to aid clinicians with their understanding of the effect anatomy on symptomology, in hope non-specific cancers are recognised earlier. True anatomical space allows cancers to grow unnoticed and is considered to have a negative impact on prognosis.

We hope you enjoyed your time with us!

Have safe travels...

Our Winter Meeting is at University of Central Lancashire

December 16th 2025