Conclusions We found a relevant participation of mitochondrial metabolism in the PPI network that has not been mentioned before as a pain onset in CRPS, but at the same time presence of pain has been reported in patients with mitochondrial disease, the essential role that it could play in the sudden development of pain in CRPS needs to be further analyzed.

Please confirm that an ethics committee approval has been applied for or granted: Not relevant (see information at the bottom of this page)

Background and Aims Formal Regional Anaesthesia (RA) training in our hospital was established 20 years ago. A survey was conducted on the experience of formal RA training delivered over this period.

Methods We identified 78 anaesthetists who completed formal RA training at the Nuffield Orthopaedic Centre (NOC), Oxford since 2003. 65 anaesthetists, whose contact details were confirmed, were emailed an anonymous survey via Survey Monkey or Microsoft Forms. Phase 1 spans 2003 – February 2020, before WHO declared Covid-19 Pandemic [February 2023 and included questions concerning the impact of the Covid-19 Pandemic (17- vs 27-questions).

Results Most respondents identified their main aim in RA training was to gain practical skills. Anaesthetists were most confident in performing single-shot ultrasound guided RA limb blocks and central neuraxial blocks. 81% of those working as consultant anaesthetists (25/31) agreed RA training in Oxford helped secure their desired consultant post. Since Covid-19 Pandemic, a higher level of direct supervision was provided. 76% (16/21) respondents’ RA training was affected, with less clinical exposure and educational events being the main reasons.

Abstract #35904 Figure 2 CRPS cluster of 20 nodes, with the principal proteins involved in mitochondrial functions
Conclusions Our survey suggested high quality of RA training was provided in a supportive environment, rising to the challenge of Covid-19 Pandemic [2]. Some respondents significantly enhanced their non-technical skills leading to successful career progression. The new 2021 RCoA Training Curriculum emphasizes a wide range of ultrasound guided RA training during stage 2 [3]. It is too early to determine the effect of new curriculum on RA training locally and nationally, which needs further evaluation.

Abstracts

**#36260** MACHINE LEARNING TO PREDICT POSTOPERATIVE PAIN AND OPIOID OUTCOMES: PROMISE OR PITFALL?

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Please confirm that an ethics committee approval has been applied for or granted: Not relevant (see information at the bottom of this page).

**Background and Aims** Machine learning enables complex patient data to be distilled into predictive diagnostic tools. This review identified studies that applied machine learning to predict acute, subacute, or chronic pain or opioid use after any surgical procedure.

**Methods** We searched PubMed using the following search strategy and terms: ‘machine learning’ OR ‘artificial intelligence’ AND ‘pain’ OR ‘opioid’ AND ‘surgery’ OR ‘postoperative’ AND ‘predict’. The inclusion criteria were literature written in English that used machine learning and/or artificial intelligence to predict postoperative and/or opioid use after surgery. The exclusion criteria were reviews; protocol papers, commentaries; not a pain or opioid-related outcome; not a postoperative outcome; diagnostic or measurement tool.

**Results** Thirty-nine studies were included (figure 1). Nineteen studies (48.7%) utilized machine learning to predict the outcome of chronic postoperative pain or function after any surgical procedure, followed by 12 studies (30.8%) utilizing machine learning to predict chronic postoperative opioid use. The most common algorithms were GBDT (n = 28), random forest algorithms (n = 23) and regularization algorithms (n = 22). 27 studies (69.2%) used preoperative pain as a predictor in the initial model. 22 studies (69.2%) used preoperative pain as a predictor in the final model. 25 studies (64.1%) used preoperative opioid use as a predictor in the initial model. 19 studies (54.3%) used preoperative opioid use as a predictor in the final model.

**Conclusions** Machine learning can contribute to personalized perioperative pain management approaches. Patient-reported variables are important, salient predictors of acute, subacute, or chronic pain or opioid use after any surgical procedure.

**Attachment** ESRA 2023 Machine Learning Abstract_5.21.2023_final.pdf

**#35044** A QUALITATIVE ANALYSIS OF INTRAOPERATIVE ACUPUNCTURE FOR NOSOCOMEPHOBIA: THE UNSEEN PATIENT

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Please confirm that an ethics committee approval has been applied for or granted: Not relevant (see information at the bottom of this page).

**Background and Aims** Nosocomephobia, a type of PTSD, is an extreme fear of hospitals. Hospital phobia is usually caused by a traumatic hospital experience. If untreated, nosocomephobia can hinder medical care. There is little research on how nosocomephobia affects elective surgery and how acupuncture can help patients cope with it. Using the transactional model of stress and coping, this qualitative case study examines acupuncture’s role in nosocomephobia patients’ elective surgery appraisal process.

**Methods** Individual interviews were conducted with participants to inquire about their nosocomephobia and prior hospital experiences. Six reviewers coded the interview transcripts line-by-line. Reviewers labeled meaningful words, phrases, and sentences and produced over 600 codes. All reviewers discuss and identify themes by grouping similar codes and resolving discrepancies. A thematic analysis was used to develop final themes for this study. The coding process was conducted in Dedoose.

**Results** Sophie had avascular necrosis in both hips and suffered PTSD from a previous traumatic event. Intraoperative acupuncture calmed her hospital anxiety, allowing her to have both hips replaced. Olivia has PTSD and a hospital phobia since age 12. Acupuncture reduced her anxiety about a total knee arthroscopy. Thematic analysis showed how nosocomephobia impacted patients’ views of surgery and distinguished between their unique fear rationale. The transactional model of stress and coping illustrated patients’ appraisal process from surgery (stressor) to coping (acupuncture) to reappraisal (mental state).

Abstract #35044 Figure 1 A theoretical map of the appraisal process.