**Methods** Physical examination shows atrophy of the left trapezius and sternocleidomastoid muscles, along with reduced strength in the upper and middle trapezius (figure 1). Post-vaccination Parsonage-Turner syndrome or accessory spinal nerve injury is considered. Electromyography reveals moderate to severe partial axonotmesis of the left accessory spinal nerve (figure 2). Magnetic resonance imaging shows extensive neuropathy along the nerve pathway (figure 3). The patient receives conservative treatment with analgesics, corticosteroids, pregabalin, clonazepam, and intensive rehabilitation. Significant improvement in pain and muscular recovery is observed at 6 weeks. Electromyography at 8 weeks demonstrates increased amplitude of the motor evoked potential, indicating progressive and adequate reinervation. In conclusion, accessory spinal nerve injuries are uncommon after mild trauma and are typically associated with oncological surgery. Initial treatment should be conservative, considering surgical options only if conservative treatment fails. Additionally, the use of platelet-rich plasma may hold promise in the treatment of such injuries. Comprehensive physical examination and appropriate ancillary tests are essential for accurate diagnosis and proper management, as pathological imaging does not always explain clinical findings.
**Attachment** EMG 1.png

## #36482 REVOLUTIONIZING NERVE PAIN TREATMENT: HARNESSING DOSIMETRY, NANOBOTS, AND AI FOR PERSONALIZED RELIEF

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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** Developing a multidisciplinary approach for nerve pain treatment involves dosimetry, nanobots, and artificial intelligence (AI). Dosimetry calculates radiation dosage to determine the optimal treatment dose based on patient factors. Nanobots target nerve cells or pain receptors, improving precision. AI analyzes patient-specific data to optimize treatment plans. The aim is to revolutionize nerve pain treatment by leveraging dosimetry, nanobots, and AI. Dosimetry ensures personalized treatment, nanobots target specific cells, and AI optimizes plans.
**Methods** Methods include patient evaluation, dosimetry planning, nanobot design, treatment administration, AI analysis, and treatment refinement. Patient evaluation considers medical history, imaging, and pain intensity. Dosimetry determines optimal dosage. Nanobots are designed to target cells, administered with imaging guidance. AI analyzes dosimetry, imaging, and nanobot data to optimize treatment. Treatment plans are refined based on AI analysis.
**Results** Results show promising integration of dosimetry, nanobots, and AI. Dosimetry allows personalized treatment, nanobots enhance precision, and AI optimizes strategies.
**Conclusions** In conclusion, the multidisciplinary approach of harnessing dosimetry, nanobots, and AI revolutionizes nerve pain treatment. By providing personalized relief through optimized treatment plans, this approach has the potential to significantly improve the quality of life for individuals suffering from nerve pain.

## #35752 ULTRASOUND VS FLUOROSCOPY IN THE MANAGEMENT OF CERVICAL RADICULAR PAIN: CAN WE REPLACE FLUOROSCOPY?

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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)
**Application for ESRA Abstract Prizes:** I don't wish to apply for the ESRA Prizes
**Background and Aims** Transforaminal Epidural steroid injection is an extremely valuable tool in the conservative management of cervical radicular pain. For decades this injection has been performed under fluoroscopic guidance and while complications are serious and infrequent, this imaging technique cannot prevent inadvertent arterial puncture. Considering delicate cervical anatomy, ultrasound may bring a valid alternative, allowing for real time needle advancement, at no radiation expenses. Recent medical studies have supported the use of Ultrasound as a pivotal imaging tool and as an alternative to the gold standard of this procedure. The aim of this presentation is to illustrate the Cervical TESI, comparing the ultrasound to the already consolidated imaging tool.
**Methods** This review describes advantages and disadvantages of US guided cervical epidural steroid injection techniques compared to the fluoroscopic guidance, as encountered in the recent medical literature.
**Results** Despite the lack of foraminal flow visualization, recent medical studies have demonstrated correct target identification with immediate and long- term effectiveness of extraforaminal (periradicular) US guided steroid injections. A higher volume showed an increase in the foraminal flow, without modifying the outcome. Also, recently, a new technique of US guided transforaminal epidural injection has been described and investigated.
**Conclusions** Ultrasound guided injections have several meaningful advantages over any other imaging technique, providing real time visualization and possibly preventing inadvertent vascular canulation. However, the US guided technique cannot demonstrate utility regarding the posterior foraminal vasculature, thus still relying on aspiration and fluoroscopic confirmation. Until further research, a combination of both US and Fluoroscopic guided techniques remains the recommended approach.

## #35647 ALTERNATIVE PHARMACOLOGICAL APPROACHES TO CHRONIC PAIN MANAGEMENT

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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** Chronic pain presents a significant healthcare burden and can become quite debilitating. The current standards of care for chronic pain include lifestyle management, procedures, and analgesics for acute exacerbations. However, using analgesic approaches has led to significant adverse effects and healthcare burdens. This review aims to investigate the current literature regarding emerging pharmacological approaches to chronic pain.

**Methods** This investigation eliminated non-pharmacologic therapies and established chronic pain regimens, focusing on three primary drug classes: cannabis, psychedelics, and dissociative hypnotics. Emphasis was placed on ketamine (hypnotic) and psilocybin (psychedelic), with other drugs also considered. Cannabis was treated as a unique drug class due to its distinct mechanism of action and abundant literature.

**Results** The review revealed promise in all three drug classes, with marijuana being the most researched yet needing further study on adverse effects. Ketamine showed potential but had abuse concerns; other hypnotics require more evidence of efficacy. Finally, psychedelics, the least understood treatment for chronic pain, demonstrated promise in small studies but need further research on dose-dependent adverse effects, mainly acute psychosis.

**Conclusions** Despite limited literature and class-specific concerns, emerging pharmacological pain management approaches can improve patients' quality of life. Issues include abuse potential, acute adverse effects, and legality. Significant progress is needed before these drug classes become standard in chronic pain treatment, but they can potentially reduce the overuse of highly addictive analgesics.

# Miscellaneous

## #33971 FLEXIBILITY PILOT IN ACADEMIC PAIN

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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)

**Application for ESRA Abstract Prizes:** I don't wish to apply for the ESRA Prizes

**Background and Aims** Over 50% of physicians in the U.S. experience burnout. Burnout is one of the leading causes of reducing workload or leaving medicine altogether. Flexibility can mean flexible work places and/or flexible work times. Flexibility has been shown to help reduce burnout. A recent article revealed that up to 1/3 of newly graduated physicians ranks flexibility as more important than salary. Thus, it is important not only for physician retention, but also recruitment. We designed and implemented an 8 week pilot in an outpatient pain management practice to evaluate the feasibility of a flexible template. Staff were surveyed before and after the pilot.

**Methods** An 8 week pilot was designed to alter work templates. Physicians could treat patients one hour earlier or one hour later than the typical start times. They could also see patients over the lunch hour. For some, this resulted in being finished with their work day 2-3 hours earlier than normal. Each physician was allowed to modify their template on the non-teaching procedure calendar only. Surveys were distributed to nursing staff, scheduling staff, and physicians before and after the 8-week pilot.

**Results** 1. There was no decline in productivity 2. There was no decline in patient experience/quality 3. There was a large increase in physician satisfaction. 4. Physicians reported improvement in self care and wellness

**Conclusions** Flexible templates are rarely used in the United States in academic settings. We showed that an interventional pain practice could successfully apply a flexible schedule without affecting productivity or quality of care.

## #35777 WHAT CAN ANESTHESIOLOGISTS DO TO MITIGATE CLIMATE CHANGE?

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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)

**Application for ESRA Abstract Prizes:** I apply as an Anesthesiologist (Aged 35 years old or less)

**Background and Aims** We humans do not have a planet B to spare, but anesthesiologists can adopt a plan to reduce carbon footprint. One example are regional techniques that reduce the use of plastic (breathing circuits, masks, endotracheal tubes), anesthetic gases, one of which is desfluorane with a 20- year warming potential, generating a greenhouse effect.

**Methods** The following are 3 successful surgeries (shoulder replacements) performed under regional anesthesia and sedation, proposing a plan that is friendlier to our planet (plan A). Patients were operated on in the beach chair position under sedation, with an ultrasound-guided superior trunk and superficial cervical plexus block, (15mL of a 0.5% lidocaine plus 0.375% levobupivacaine solution was administered). Bispectral Index Scale and vital signs monitoring, verbal communication, were performed.

**Results** Patients' characteristics: Peter: 83-year-old male, 82 kg, 176 cm, hypertensive, pacemaker user due to atrial fibrillation. Denisse: 74-year-old female, 70 kg, 165 cm, hypertensive and diabetic. Jacqueline: 91-year-old female, 65 kg, 165 cm, hypertensive, generalized arthrosis. After surgery, a discharge assessment showed they were able to go home, without analgesic requirements.

**Conclusions** Anesthesiologists can be leaders within the medical community when it comes to eco-friendly measures, which in these cases were: • Plan A: choosing wisely (regional vs. general) • Plan B: reducing gas flows, syringes, medications, circuits, gloves, extension sets, connectors. In summary, among those selected patients who require anesthesia for upper arm, brachial plexus block plus sedation maybe considered as the sole option. In addition to clinical outcomes, there is an environmental responsibility in the context of health care.