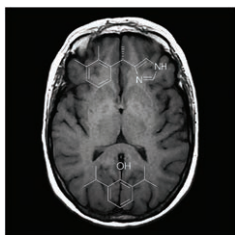


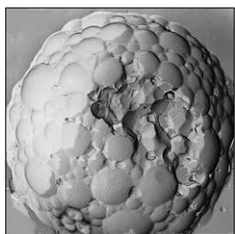
### 1043 Safety Aspects of Postanesthesia Care Unit Discharge without Motor Function Assessment after Spinal Anesthesia: A Randomized, Multicenter, Semiblinded, Noninferiority, Controlled Trial

Spinal anesthesia is commonly used for total hip arthroplasty and total knee arthroplasty, largely due to the more favorable reported morbidity profile compared to general anesthesia. The 30-day hospital length of stay and readmission for surgery-related factors within the first 30 postoperative days were assessed in a randomized, noninferiority, semiblinded, controlled trial of 1,359 patients with or without motor function assessment after spinal anesthesia for total hip arthroplasty or total knee arthroplasty. Postanesthesia care unit discharge after spinal anesthesia without assessment of lower limb motor function was found to be noninferior to postanesthesia care unit discharge with motor function assessment in achieving length of stay less than or equal to 4 days and/or readmission rate for the first 30 postoperative days. Time in postanesthesia care unit was significantly reduced in the intervention group (mean, 0:40h) compared to the control group (mean, 1:56h). (Summary: M. J. Avram. Photo: J. P. Rathmell. Illustration: A. Johnson, Vivo Visuals.)



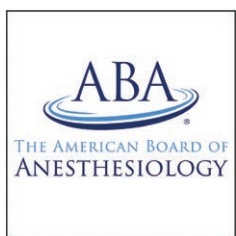
### 1033 Effect of Dexmedetomidine and Propofol on Basal Ganglia Activity in Parkinson Disease: A Controlled Clinical Trial

Many neurosurgeons and neurologists prefer to avoid sedation in patients undergoing deep brain stimulation electrode placement for Parkinson disease because some anesthetic drugs may abolish microelectrode recordings and Parkinson disease symptoms. The effects of dexmedetomidine and of different propofol effect site concentrations on local field potentials were assessed in 10 Parkinson disease patients undergoing deep brain stimulation electrode placement in a nonrandomized, unblinded, controlled clinical trial. Local field potentials represent the grand average of the postsynaptic activity around the electrode; local field potential activity is dominated by predominant beta oscillations in the basal ganglia of Parkinson disease patients in the "off" state at rest. There were no differences in the relative beta power of local field potentials between control and dexmedetomidine recordings, but there was a progressive loss of beta local field potential activity as the propofol concentration increased. (Summary: M. J. Avram. Image: J. P. Rathmell.)



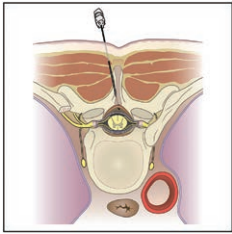
### 1139 A Three-arm Randomized Clinical Trial Comparing Continuous Femoral Plus Single-injection Sciatic Peripheral Nerve Blocks versus Periarticular Injection with Ropivacaine or Liposomal Bupivacaine for Patients Undergoing Total Knee Arthroplasty

The hypothesis that, when incorporated into a comprehensive multimodal analgesic pathway for patients undergoing total knee arthroplasty, peripheral nerve blockade including continuous femoral nerve plus single-injection sciatic nerve blockade would result in lower postoperative pain scores and lower opioid consumption compared to periarticular injections using ropivacaine or liposomal bupivacaine-based solutions was tested in a three-arm parallel, outcome adjudicator-blinded, superiority, randomized controlled trial. One hundred fifty-seven adult patients undergoing elective, unilateral primary total knee arthroplasty were randomized to one of the three interventions. A multimodal analgesic pathway including periarticular injections with ropivacaine provided perioperative pain control that was comparable to a femoral nerve catheter and single-injection sciatic nerve block on postoperative days 1 and 2. An advantage of liposomal bupivacaine over ropivacaine in periarticular injections for total knee arthroplasty was not established. (Summary: M. J. Avram. Image: Scanning electron microscope image of liposomal bupivacaine. Courtesy of Pacira Pharmaceuticals [open access], available at [https://openi.nlm.nih.gov/detailedresult.php?img=PMC3442744\\_jpr-5-257f1&req=4](https://openi.nlm.nih.gov/detailedresult.php?img=PMC3442744_jpr-5-257f1&req=4).)



### 1171 Effectiveness of Written and Oral Specialty Certification Examinations to Predict Actions against the Medical Licenses of Anesthesiologists

The American Board of Anesthesiology administers written and oral examinations for its primary certification. The written examination is primarily a test of knowledge, whereas the oral examination captures domains related to clinical judgment and communication that are important for physician performance. The hypothesis that the lifetime risk of a disciplinary action against a physician's medical license is lower in those who pass both written and oral anesthesiology certification examinations compared with those who pass only the written examination was tested in a retrospective cohort study of physicians who entered anesthesiology training in an Accreditation Council for Graduate Medical Education accredited program from 1971 to 2011. In a multivariable model, the risk of license actions was higher in men, American medical school graduates, and those who did not pass both oral and written examinations. (Summary: M. J. Avram. Image: ©American Board of Anesthesiology, Inc., reproduced with permission.)



## 1096 Effect of Thoracic Epidural Anesthesia on Ventricular Excitability in a Porcine Model

Imbalances in the autonomic nervous system and sympathetic hyperexcitability are major contributors to the pathophysiology of ventricular tachyarrhythmias. Thoracic epidural anesthesia (TEA) modulates autonomic balance by inhibiting afferent signaling and efferent outflow between the heart and spinal cord by blocking neural activity of spinal nerve rootlets in the epidural space. The hypothesis that TEA attenuates myocardial excitability and the proarrhythmic effects of sympathetic stimulation was tested in 15 Yorkshire pigs in which cardiac electrophysiologic mapping was performed at baseline and in response to either programmed ventricular extra-stimulation or left stellate ganglion stimulation before and after TEA. TEA attenuated ventricular excitability and mitigated proarrhythmic effects of sympathetic

hyperactivity in the porcine heart by enhancing electrical wave stability, attenuating the shortening of ventricular activation recovery interval, suppressing the increase in spatial dispersion of repolarization, and reducing heart rate variability. (Summary: M. J. Avram. Illustration: G. Nelson.)



## 995 Lost in Translation: The 2016 John W. Severinghaus Lecture on Translational Research (Special Article)

The specialty of anesthesiology has largely solved the problem of intraoperative mortality. Today the incidence of intraoperative mortality is so low that it is hard to measure, despite the fact that surgical patients are older and sicker than they were when its incidence was measurable. In an essay adapted from the John W. Severinghaus Lecture on Translational Research he delivered at the 2016 meeting of the American Society of Anesthesiologists, Daniel I. Sessler, M.D., makes the case that anesthesiologists can no longer define success as getting patients to the postanesthesia care unit alive because patients die after surgery rather than intraoperatively. He urges anesthesiology to embrace postoperative mortality and calls on basic scientists, translational investigators, and clinicians to make a sustained

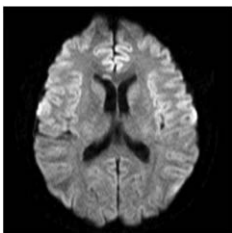
and concerted effort to reduce deaths after surgery, just as their predecessors solved the problem of intraoperative mortality. (Summary: M. J. Avram. Photo: S. Donisch.)



## 1180 To Stop or Not, That Is the Question: Acute Pain Management for the Patient on Chronic Buprenorphine (Clinical Concepts and Commentary)

Buprenorphine is a partial agonist at the  $\mu$  opioid receptor and an antagonist at the  $\kappa$  and  $\delta$  receptors and has a wide safety profile. It is used for medication-assisted treatment strategies for opioid use disorder and is increasingly prescribed for chronic pain treatment. Treatment of acute pain in patients taking buprenorphine can be challenging because its pharmacologic actions may interfere with analgesic actions of traditional opioids, leading to uncontrolled postoperative pain and serious adverse events. There are few data to guide optimal pain management strategies in these patients. Protocols created for elective and for urgent/emergent surgery are reviewed as is a clinical practice perspective. Early discussion with the buprenorphine provider is optimal to ensure appropriate support is in

place after surgery. Perioperative analgesia should include use of regional and systemic opioid-sparing treatment modalities whenever possible. (Summary: M. J. Avram. Photo: J. P. Rathmell.)



## 1187 Cerebral Autoregulation-oriented Therapy at the Bedside: A Comprehensive Review (Review Article)

Cerebral autoregulation protects the brain against hypoperfusion caused by hypotension and against hypertension-induced hyperemia. It can be assessed at the bedside by measuring changes in cerebral blood flow, or its surrogates, in relation to cerebral perfusion pressure (CPP). The newest and most innovative application of autoregulation monitoring is the determination of individualized optimal mean arterial blood pressure and optimal CPP, with delineation of individual autoregulatory ranges. This review summarizes the evidence regarding use of autoregulation-directed therapy at the bedside to optimize and individualize CPP and assesses whether doing so can improve functional outcomes. Although autoregulation monitoring might allow clinicians to individualize management in acutely ill adults and

children to optimize their cerebral perfusion, there have been no randomized controlled trials to determine the clinical effectiveness of interventions based on optimal CPP and optimal mean arterial blood pressure. (Summary: M. J. Avram. Image: J. P. Rathmell.)