

## ANESTHESIOLOGY



*Jean Mantz, M.D., Ph.D., Editor*



**Animation: Depression and its treatment. Nature Neuroscience December 18, 2014.**

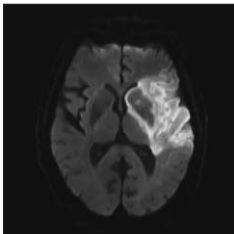
As in humans, chronic stress in mice can lead to altered plasticity in various mood-related brain regions such as the hippocampus, amygdala, nucleus accumbens, and prefrontal cortex. These changes in plasticity can be reversed by antidepressant drugs, including ketamine, which has a rapid antidepressant effect in patients. This exciting video explores the neural circuits affected in depression and illustrates the molecular and cellular pathways thought to manage the therapeutic nature of antidepressant drugs. (Summary: J. Mantz. Illustration: J.P. Rathmell.)



**Use of perioperative hydroxyethyl starch 6% and albumin 5% in elective joint arthroplasty and association with adverse outcomes: A retrospective population based analysis. BMJ 2015; 350:h1567.**

The use of colloids in the critically ill trends toward a detrimental outcome in septic patients. Whether its intraoperative use increases the risk of perioperative complications for elective surgery remains unknown. This retrospective, population-based study performed across 510 institutions in the United States included more than 1 million patients undergoing elective joint arthroplasty. Findings showed that the use of starch 6% or albumin 5% increased the risk of postoperative renal failure and several other complications. These results question the widespread perioperative use of starch 6% and albumin 5%. (Summary: J. Mantz. Image: J.P. Rathmell.)

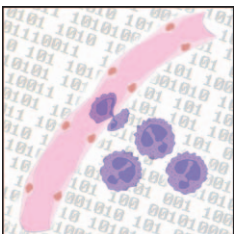
results question the J.P. Rathmell.)



**Endovascular therapy for ischemic stroke with perfusion-imaging selection. N Engl J Med 2015; 372:1009–18. Randomized assessment of rapid endovascular treatment of ischemic stroke. N Engl J Med 2015; 372:1019–30.**

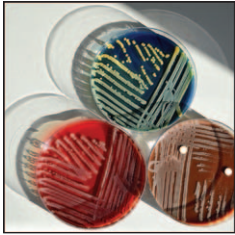
Two major randomized controlled trials have been published in the *New England Journal of Medicine* on the efficacy/safety of endovascular treatment superimposed on alteplase therapy. The first of the trials focuses on ischemic stroke patients with a proximal cerebral arterial occlusion and salvageable tissue on computed tomography perfusion imaging, early thrombectomy with the Solitaire FR (Flow Restoration) stent retriever (Covidien, Ireland) as compared with alteplase alone, improved reperfusion, early neurologic recovery, and functional outcome. The second trial

showed improved functional outcomes and reduced mortality among acute ischemic stroke patients with proximal vessel occlusion, a small infarct core, moderate-to-good collateral circulation, and rapid endovascular treatment. Of note, the trials were stopped prematurely due to efficacy. These new results confirm and extend the superiority of interventional endovascular treatment over fibrinolytic therapy and represent great optimism for the treatment of acute stroke in the future. (Summary: J. Mantz. Image: J.P. Rathmell.)



**Critical care evidence—new directions. JAMA 2015; 313:893–4.**

This viewpoint will provide the interested reader with a comprehensive discussion of the challenges that must be overcome in order to significantly improve the outcome of critically ill patients in the future. The focus is not only on use of new methods in clinical trials and big data, but also on still poorly understood domains such as the immune status of septic patients and its relevant biomarkers of inflammatory status. Experimental models are a key component of this strategy. (Summary: J. Mantz. Illustration: J.P. Rathmell.)



**Frequency, cost, and risk factors of readmissions among severe sepsis survivors. *Crit Care Med* 2015; 43:738–46.**

Severe sepsis is associated with a high risk of mortality in the critically ill, yet the frequency, mortality, cost, and risk factors associated with readmission after index hospitalization for severe sepsis have not been systematically examined in sepsis survivors. In this cohort study performed in more than 40,000 patients in all nonfederal hospitals across three U.S. states, readmission to the intensive care unit after sepsis was necessary for 26% of the patients within 30 days and 48% within 180 days and contributed to a significant impact on mortality and costs. (Summary: J. Mantz. Image: © Thinkstock.)



**Evaluation of the benefit of corticosteroid injection before exercise therapy in patients with osteoarthritis of the knee: A randomized clinical trial. *JAMA Intern Med* 2015; doi: 10.1001/jamainternmed.2015.0461.**

Osteoarthritis of the knee is a common and painful cause of suffering and disability. Numerous treatments, including topical agents, oral medications, injections, exercise, and joint replacement are available. When the pain of osteoarthritis is serious, intraarticular corticosteroid injection is often performed prior to a course of exercise or physical therapy. In their recent 100-patient randomized controlled trial, Henriksen *et al.* tested the hypothesis that preexercise steroid injections *versus* placebo would lead to greater pain improvement in a subsequent 12-week supervised

exercise program. While the exercise program appeared to be effective in improving pain, steroid injection was not found to confer any advantage. Thus, while intraarticular steroid injection is commonly performed in pain, rheumatology, and orthopedic clinics, its utility as a part of a joint rehabilitation program is in question. (Summary: J.D. Clark. Image: © Thinkstock.)



**How learning transfers: A study of how graduates of a faculty education fellowship influenced the behaviors and practices of their peers and organizations. *Acad Med* 2015; 90:372–8.**

Anesthesiology faculty members involved in resident and fellow education are often required to participate in faculty development activities intended to enhance their skills as educators. Measuring the value of these development activities is challenging. This qualitative study investigated the impact of an education program completed by faculty from 13 departments across three institutions. The assessment included in-depth interviews of 13 supervisors and 25 peers at the faculty. The course was credited with behavioral changes in the participants related to

improved teaching skills and confidence, enhanced leadership potential, and pursuit of scholarship in education. (Summary: C. Peterson-Layne. Image: J.P. Rathmell.)