

THIS MONTH IN *Anesthesiology*

Oxygen and Life on Earth: An Anesthesiologist's Views on Oxygen Evolution, Discovery, Sensing, and Utilization (Special Article)..... 7

The change from earth's anoxic to oxic atmosphere in relation to the development of life is discussed. See the accompanying Editorial View on page 1

Total Intravenous Anesthesia Including Ketamine versus Volatile Gas Anesthesia for Combat-related Operative Traumatic Brain Injury ... 44

Total intravenous anesthesia was not associated with improved neurologic outcome in traumatic brain injury.

Lack of Analgesia by Oral Standardized Cannabis Extract on Acute Inflammatory Pain and Hyperalgesia in Volunteers 101

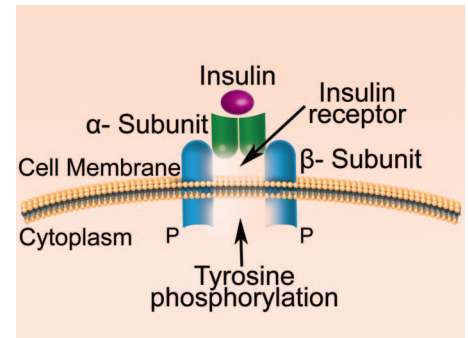
Orally administered cannabis extract did not show analgesic efficacy.

Hyperglycemia and Acute Coronary Syndrome: A Scientific Statement from the American Heart Association Diabetes Committee of the Council on Nutrition, Physical Activity, and Metabolism (Special Article) 14

The need for large randomized trials to determine whether treatment strategies aimed at glucose control will improve patient outcomes is reviewed. See the accompanying Editorial View on page 1

Obesity-induced Insulin Resistance and Hyperglycemia: Etiologic Factors and Molecular Mechanisms (Review Article)..... 137

Obesity is a major cause of type 2 diabetes, clinically evidenced as hyperglycemia. The altered glucose homeostasis is caused by faulty signal transduction *via* the insulin signaling proteins which results in decreased glucose uptake by the muscle, altered lipogenesis, and increased glucose output by the liver. The etiology of this derangement in insulin signaling is related to a chronic inflammatory state, which modifies the insulin signaling proteins' functions. There are substantial differences in the molecular mechanisms of insulin resistance among different organs. Multipronged therapies aimed at rectifying obesity-induced anomalies in the central nervous system and peripheral tissues may be beneficial in obesity-induced insulin resistance.



Comparing the Laryngeal Tube Suction II with the ProSeal™ Laryngeal Mask Airway 54

The Laryngeal Tube Suction II (LTSII) is a recent revision of the Laryngeal Tube Suction. This study compared insertion and ventilation profiles of LTSII and ProSeal™ Laryngeal Mask Airway (PLMA™) in anesthetized patients. The rate of successful insertion, insertion time, airway leak pressure, tidal volume, and postoperative airway morbidity were among many parameters measured. Insertion was successful in 37 and 48 of 50 patients with LTSII and PLMA™, respectively. The PLMA™ was superior to the LTSII in most measures of ventilation performance. Airway management with LTSII is inferior to that with PLMA™.

Pharmacogenetics of Nitrous Oxide: Standing at the Crossroads (Editorial View) 5

In this editorial, Hogan reviews and comments on the implications of a pharmacogenomics study of nitrous oxide by Nagele *et al.* In Nagele *et al.*'s study, patients with a certain genetic mutation develop higher plasma homocysteine levels after nitrous oxide anesthesia than normal patients. The study suggests that deleterious events after nitrous oxide exposure may be enriched in a subset of patients with certain genetic predisposition. Hogan states that trials of nitrous oxide exposure in the clinical setting will be substantially strengthened by inclusion of single-carbon genotyping. Furthermore, knowing in advance who can breathe nitrous oxide without fear of clinically relevant hyperhomocysteinemia may help to sustain its safe use in the future.

High-throughput Operating Room System for Joint Arthroplasties..... 25

Recent investigations have focused on increased operating room (OR) throughput without increasing total OR time. The authors examined if a system of parallel processing for lower extremity joint arthroplasties sustainably reduces nonoperative time and increases throughput. The high-throughput parallel processing strategy included neuraxial anesthesia, an induction room, patient selection, an additional circulating nurse, and specific end-of-case transfer to recovery. Throughput increased from 2.6 to 3.4 arthroplasties per day per room. Both non-operative time and operative time decreased. Because joint arthroplasties generated a positive margin greater than the incremental cost, the high-throughput system improved financial performance. See the accompanying Editorial View on page 3