



ON THE COVER:

This themed issue focuses on original investigation and commentary in the rapidly changing world of medical education. From medical student through continuing education during practice, new approaches are being implemented and new requirements are being applied, and this issue covers both of these in a comprehensive fashion. Whether you're a first-year resident or approaching retirement, there is something in this issue for you.

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- In a model of neuronal cultures of dorsal root ganglia neurons from postnatal day 7 and adult rats, lidocaine induced similar cytotoxic and apoptotic effects on neonatal and adult rat dorsal root ganglia neurons despite differences in their KCl-evoked calcium responses *in vitro*.
- Preoperative Thrombocytopenia and Postoperative Outcomes after Noncardiac Surgery** 62
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- Abnormal platelet counts were common, occurring in 1 of 14 patients. Patients with low platelet counts were more likely to require transfusion and more likely to die.

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- Immobilization with Atrophy Induces *De Novo* Expression of Neuronal Nicotinic $\alpha 7$ Acetylcholine Receptors in Muscle Contributing to Neurotransmission** 76
S. Lee, H. Yang, T. Sasakawa, M.A.S. Khan, A. Khatri, M. Kaneki, and J.A.J. Martyn
- After immobilization, immature nicotinic acetylcholine receptors (AChRs) did not contribute to neurotransmission, however, $\alpha 7$ AChRs were up-regulated and also contributed to neuromuscular transmission. Resistance to clinically used muscle relaxants seen with immobilization might be related to functional expression of insensitive $\alpha 7$ AChRs.

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M. van Eerd, J. Patijn, J.M. Sieben, M. Sommer, J. Van Zundert, M. Van Kleef, and A. Lataster
- An *in vitro* model was constructed and validated for ultrasound imaging of the cervical spine. Ultrasound images are provided for the key landmarks: mastoid process, transverse process of C1, tubercles of C6 and C7, and cervical laminae.
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J.E. Paul, N. Buckley, R.F. McLean, K. Antoni, D. Musson, M. Kampf, D. Buckley, M. Marcoux, R. Frketich, L. Thabane, and J. Cheng

Comparing data from over 35,000 postoperative patients before and after a root cause analysis–led intervention showed a reduction by 1/3 in major adverse events, accompanied by an increase by 1/3 in the incidence of severe pain.

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T. Sakai, T.D. Emerick, D.G. Metro, R.M. Patel, S.C. Hirsch, D.G. Winger, and Y. Xu

Since 2006 the University of Pittsburgh instituted a series of initiatives regarding resident research, resulting in increased research involvement by faculty and productivity by residents in comparison to historical and matched controls.

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B. Haydar, J. Charnin, T. Voepel-Lewis, and K. Baker

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R.H. Blum, J.R. Boulet, J.B. Cooper, and S.L. Muret-Wagstaff; for the Harvard Assessment of Anesthesia Resident Performance Research Group

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J. Weller, R. Henderson, C.S. Webster, B. Shulruf, J. Torrie, E. Davies, K. Henderson, C. Frampton, and A.F. Merry

In an evaluation of 20 anesthesiologists, communication pattern for routine cases was similar during simulation as during clinical care in the operating room, supporting the ecologic validity of simulation.

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N.A. Ferrero, A.V. Bortsov, H. Arora, S.M. Martinelli, L.M. Kolarczyk, E.C. Teeter, D.A. Zvara, and P.A. Kumar

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J.M. Ehrenfeld, M.D. McEvoy, W.R. Furman, D. Snyder, and W.S. Sandberg

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