

CEREBRAL DESATURATION. COMMON. COSTLY. DEBILITATING.

COMMON

Patients experience
**CEREBRAL
OXYGEN
DESATURATION***

During cardiac surgery¹
25 – 37%

During high-risk cardiac surgery²
69 – 75%

73.7%
of patients who desaturate in
the OR during high-risk cardiac
surgery also desaturate in the ICU³

COSTLY

**INCREASED
LENGTH OF STAY**

Cerebral desaturation
costs approximately
\$ 3,300 per day^{3,4}
\$ 4,000 per day with
mechanical ventilation⁵

CABG patients who experience
prolonged desaturation have 3x
greater risk for hospital stays
>6 days⁶

Low mean intraoperative
cerebral saturation during
CABG procedures correlates
with hospital stays
>10 days⁷

DEBILITATING

CABG surgery patients
who experienced prolonged
desaturation:

Are **12x**
more
likely
to have
postoperative
cognitive
decline⁸

Have
26% higher
rates of major organ
morbidity and
mortality (MOMM)
than patients
without cerebral
desaturation⁹

33%
7%



**THE CLINICAL
STANDARD IN
CEREBRAL OXIMETRY**

INVOS™ monitoring

Monitors cerebral/somatic
oxygenation (rSO₂) and
perfusion status



Lets you detect cerebral
desaturation and triggers
rapid intervention



May lead to decreased
costs by helping you reduce
postoperative complications¹



Improves patient outcomes^{7,8}



**Learn more
TrustINVOS.com**

THE RISKS ARE REAL

In clinical trials, cerebral
desaturation during cardiac
surgery is associated with:

- Postoperative MOMM⁷
- Neurologic injury^{6,8,9}
- Increased time on
mechanical ventilation¹⁰
- Prolonged hospital stay^{6,7}



INVOS™ MONITORING GIVES INSIGHT

Cerebral oximetry helps you:^{7**}

- Detect desaturation
- Intervene promptly
- Improve patient outcomes

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2. Deschamps A, Lambert J, Couture P, et al. Reversal of decreases in cerebral saturation in high-risk cardiac surgery. *J Cardiothorac Vasc Anesth*. Available online 18 June 2013. ISSN 1053-0770. 3. AHRQ Brief, February, 2014. Available at hcup-us.ahrq.gov/reports/statbriefs/sb170-Operating-Room-Procedures-United-States-2011.pdf. 4. Becker's Hospital Review, February 19, 2014. Available at beckershospitalreview.com/finance/top-20-costliest-surgical-procedures-performed-in-hospitals.html. 5. Dasta JF, McLaughlin TP, Mody SH, et al. Daily cost of an intensive care unit day: the contribution of mechanical ventilation. *Crit Care Med*. 2005;33(6):1266-1271. 6. Slater JP, Guarino T, Stack J, et al. Cerebral oxygen desaturation predicts cognitive decline and longer hospital stay after cardiac surgery. *Ann Thorac Surg*. 2009;87(1):36-44.
7. Murkin JM, Adams SJ, Novick RJ, et al. Monitoring brain oxygen saturation during coronary bypass surgery: a randomized, prospective study. *Anesth Analg*. 2007;104(1):51-58. 8. Colak Z, Borogovic M, Bogovic A, et al. Influence of intraoperative cerebral oximetry monitoring on neurocognitive function after coronary artery bypass surgery: a randomized, prospective study. *Eur J Cardio-Thorac Surg*. 2014. Epub ahead of print.
9. Yao FSF, Tseng CC, Woo D, Huang SW, Levin SK. Maintaining cerebral oxygen saturation during cardiac surgery decreased neurological complications. *Anesthesiology*. 2001;95:A152. 10. Schön J, Serien V, Hanke T, et al. Cerebral oxygen saturation monitoring in on-pump cardiac surgery—a 1 year experience. *App Cardiopulm Pathophysiol*. 2009;13:243-52.

* Clinically significant drop from patient's baseline
** Interventions to return the patient's rSO₂ to baseline using the INVOS™ system have been shown to improve outcomes after surgery