

The BIS module provides display and trending of the following information:

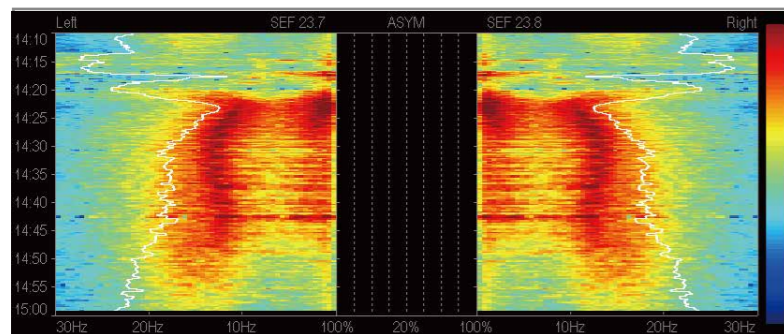
- Bispectral Index
- Electromyographic strength (EMG)
- Signal Quality Indicator
- Suppression Ratio
- Total Power
- Spectral Edge Frequency (SEF)
- EEG waveform



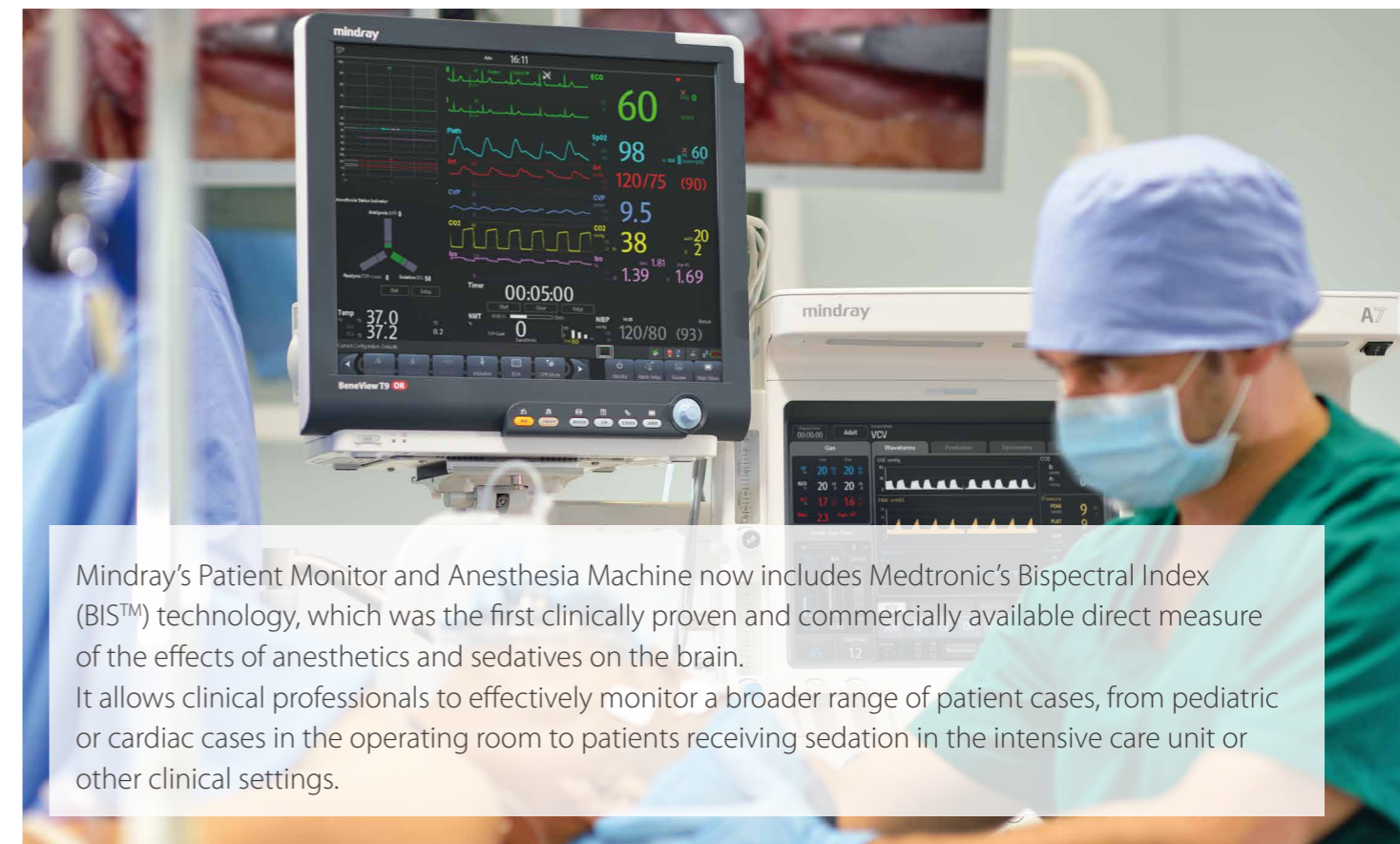
## NEW Technology: BISx4

By being able to see bilateral asymmetry of the brain structure and function, we can:

- Monitor the bilateral brain electrical activity at the same time.
- Provide four EEG monitoring.
- Observe the  $\delta, \theta, \alpha$  and  $\beta$  distribution and change directly through DSA.
- Bilateral brain asymmetry (ASYM) monitoring.



## Mindray BIS Module



Mindray's Patient Monitor and Anesthesia Machine now includes Medtronic's Bispectral Index (BIS™) technology, which was the first clinically proven and commercially available direct measure of the effects of anesthetics and sedatives on the brain. It allows clinical professionals to effectively monitor a broader range of patient cases, from pediatric or cardiac cases in the operating room to patients receiving sedation in the intensive care unit or other clinical settings.

Using an adhesive sensor placed on the patient's forehead, BIS™ Brain Monitoring translates information from the electroencephalogram (EEG) into a single number that represents each patient's level of consciousness. This number – the BIS value – ranges from 100 (indicating an awake patient) to zero (indicating the absence of brain activity).

### BIS™ Value Range and Clinical States

100	Awake – Responds to normal voice
80	Light/Moderate Sedation – May respond to loud commands or mild prodding/shaking
60	General Anesthesia – Low probability of explicit recall – Unresponsive to verbal stimulus
40	Deep Hypnotic State
20	Burst Suppression
0	Flatline EEG



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P/N:ENG-Mindray BIS Module-210285x4P-20160513

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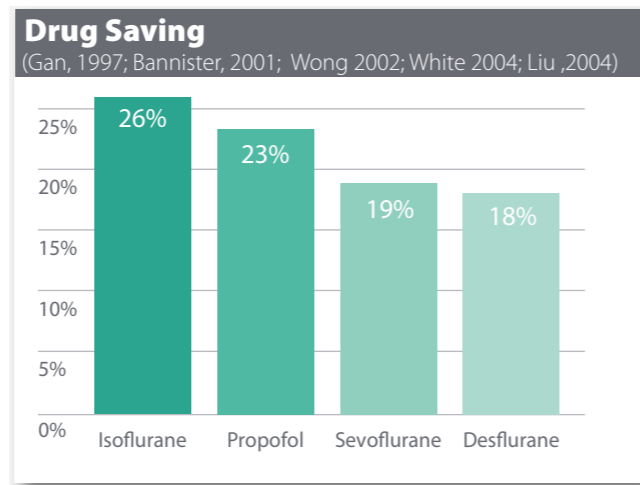
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# Benefits for Anesthesia and Critical Care



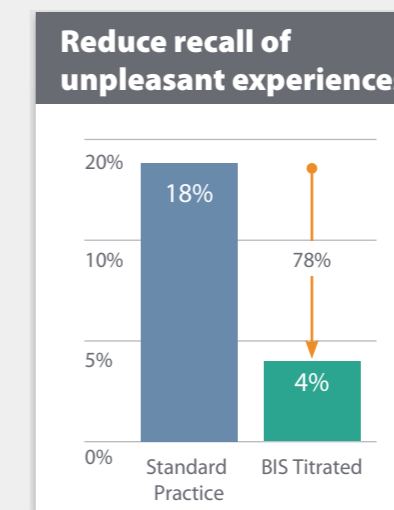
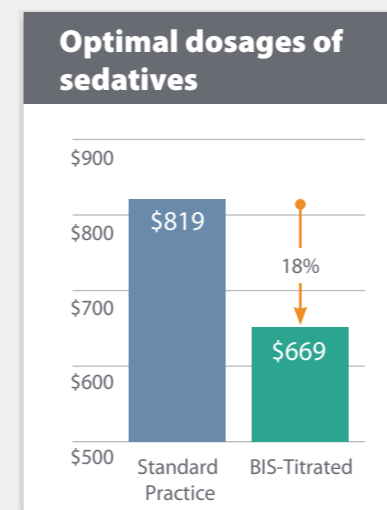
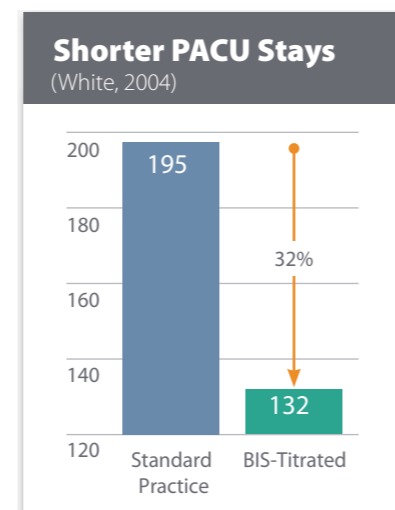
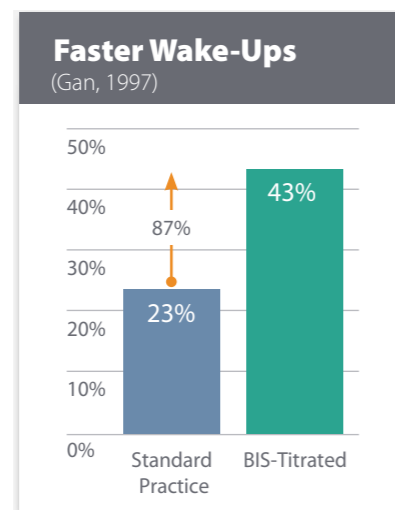
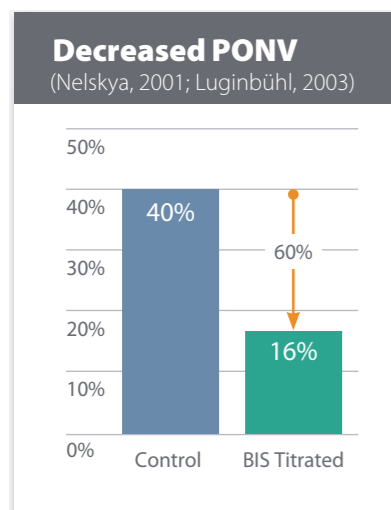
BIS Brain Monitoring can help clinicians determine the precise type and optimal dosages of anesthetic or sedative medication for each patient. BIS monitoring is most widely used in the OR to optimize patient care:

- BIS is effective for use in a variety of patient populations and in diverse clinical settings
- Clinicians are provided with new information to help determine the most effective anesthetic mix
- Patients can have faster, more predictable wake-ups
- Patients can experience higher-quality recoveries with less grogginess, nausea and vomiting
- Reduce the risk of intraoperative awareness with recall by approximately 80%
- Hospitals have the potential to reduce costs through improved operational efficiency and effective administration of anesthetics and/or sedatives



In the ICU, BIS monitoring has been shown to reduce recall of unpleasant experiences and provide objective sedation assessment especially during:

- Mechanical ventilation
- Neuromuscular blockade
- Barbiturate coma
- Bedside procedures
- Well-managed sedation levels in the ICU can also aid in ventilator weaning.



\*Kaplan L and Bailey H. Bispectral Index (BIS) Monitoring of ICU Patients on Continuous Infusions of Sedatives and Paralytics Reduces Sedative Drug Utilization and Cost. Critical Care 2000;4(suppl 1): S110.