



Cortical Dynamics Ltd

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About Cortical Dynamics Limited <http://www.corticaldynamics.com/>

Every year approximately 2000 patients experience "intra-operative awareness", one of the most common complications of anaesthesia, which causes some form of awareness during surgery.

45 per cent of insurance claims against anaesthetists relate to this phenomena and it is considered to be the main reason for over and under sedation during surgery.

This is caused by the current lack of technology to accurately monitor the state of the brain during anaesthesia.

Research shows that anaesthetists thought that the workings of the normal EEG monitors were not robust and are, sometimes, inaccurate.

There are **two million general anaesthetics performed annually in Australia** and **1.3 billion performed worldwide**.

Australian company, **Cortical Dynamics Limited**, in association with **Swinburne University of Technology**, has developed a technology called the **Brain Anaesthesia Response (BAR) monitoring system**.

Utilising the latest advances in our understanding of the mechanisms responsible for brain activity, the BAR monitor represents a revolutionary approach to processing Electroencephalogram (EEG), the recording of brain activity.

This may allow doctors to better optimise anaesthetic delivery. It may also improve the patient experience, reduce recovery times and lower the cost of anaesthesia, creating a significant global market opportunity.

Clinical trials have unambiguously revealed that the BAR monitoring system is capable of detecting the effects of the analgesic and anaesthetic agents remifentanyl and nitrous oxide, which are in widespread routine clinical use. These agents are typically not detected by other existing EEG monitoring approaches.

To date three main applications for the BAR monitoring system have been identified:

1. Patient monitoring by trained staff in hospital wards, operating theatres or research laboratories;
2. Neuro-diagnostics of changes in the brain and memory functions to provide early warning of degenerative diseases for hospitals and research trial or studies; and
3. Pain response and tranquilliser monitoring for hospitals and especially trauma patients in intensive care units.

Dr Bruce Whan, Director of the Swinburne Knowledge commercialisation unit and a Director of Cortical Dynamics, says the technology is expected to offer substantial financial benefits to hospitals and healthcare systems.

"Being able to finetune the application of anaesthetic agents can avoid issues of under or over-sedation, potentially reducing side-effects and their impact on the patient experience" states Dr Bruce Whan.

"Hospitals can avoid litigation and run more efficiently due to the earlier mobility of post-anaesthetic patients. This leads to higher turnover rates in surgery. By reducing use and wastage it also reduces the costs of anaesthesia".

Cortical Dynamics was established in Melbourne in 2004 by **Louis Delacretaz** and **Associate Professor David Liley**. The BAR monitoring system is a joint venture between **Swinburne University of Technology** and **Cortical Dynamics Ltd**.

Cortical Dynamics has applied for admission to the Official List of the Australian Securities Exchange (ASX). Cortical Dynamics focus for the next two years is to validate the BAR system measurement and monitoring of depth of anaesthesia and to complete development of market ready stand alone products and modules that integrate with market leading holistic patient monitoring systems.

It is planned to undertake trials during 2011 and 2012 at leading teaching hospitals throughout the world.

For further information:

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