



11 January 2012

Companies Announcements Office
Australian Securities Exchange Limited
10th Floor, 20 Bond Street
SYDNEY NSW 2000

Cortical Dynamics to present at Biotech Showcase 2012

Cortical Dynamics Ltd ("**Cortical**") is pleased to announce that Mr David Breeze will be presenting at the Biotech Showcase 2012 in San Francisco Tuesday the 10th of January 2012 (8am WST).

A copy of the presentation is attached to this announcement.

About Biotech Showcase 2012

The showcase is a forum devoted to providing biotechnology companies, investors and pharmaceutical executives with an opportunity to meet in one place, and it is amongst the world's largest healthcare conferences.

About the BAR Monitor

The BAR monitoring system measures a patient's brain electrical activity, the electroencephalogram (EEG), in order to indicate how deeply anaesthetised a patient is during an operation via an adhesive sensor applied to the forehead. The BAR monitor is designed to assist anaesthetists and intensive care staff in ensuring patients do not wake up un-expectedly, as well as reducing the incidence of side effects associated with the anaesthetic.

The BAR monitor improves on currently used EEG monitors by utilising advances in understanding of how the brain's electrical activity is produced, and how it is affected by anaesthetic and sedative drugs. The BAR's unique physiological approach is aimed at independently monitoring the hypnotic and analgesic states associated with anaesthesia, a feature no known existing EEG based depth-of-anaesthesia monitor is able to achieve. Objectively monitoring of hypnotic and analgesic state will lead to improved anaesthetic and surgical outcomes, by reducing recovery times and minimising drug costs.

Cortical Dynamics Ltd

ACN 107 557 620

PO box 317, North Perth, WA, 6906

14 View Street, North Perth, Western Australia

T: + 61 8 6467 9525 F: +61 8 9328 8733

contact@corticaldynamics.com www.corticaldynamics.com



About Cortical Dynamics

Cortical Dynamics is a medical technology company that was established in 2004 to commercialise intellectual property relating to brain function monitoring developed by Associate Professor David Liley and his scientific team at Melbourne's Swinburne University of Technology.

Cortical has applied for admission to the Official List of the Australian Securities Exchange and the offer closing date is 5:00pm (AWST) on Monday 30th April January 2012.

Yours sincerely,

A handwritten signature in black ink that reads "D. Breeze". The signature is fluid and cursive, with a large initial "D" and "B".

David Breeze
Chairman

Cortical Dynamics Ltd

ACN 107 557 620

PO box 317, North Perth, WA, 6906

14 View Street, North Perth, Western Australia

T: + 61 8 6467 9525 F: +61 8 9328 8733

contact@corticaldynamics.com www.corticaldynamics.com



Australian IPO
\$2M Raising
www.corticaldynamics.com
Proposed **ASX** Code: **CDZ**





“I felt my chest being cut open ... and felt the saw cutting through my chest bone”

In 2004 Norma Dalton told the UK's *The Independent* of her harrowing account of being awake while undergoing surgery.

“I was trying to scream out for them to stop, that I was awake.. I heard the conversations and then I felt the incision”

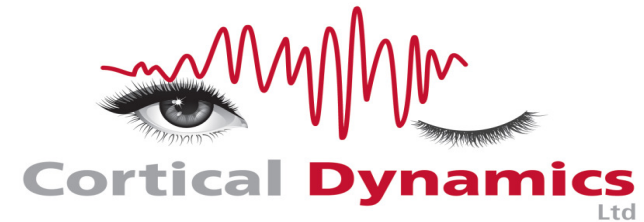
Judy Vernon told *The Australian* of her recollections of surgery.



For video presentation please refer to Cortical website:

<http://www.corticaldynamics.com/media/videos>

Overview



- Cortical Dynamics Ltd is a publicly unlisted medical device company focused on developing the next generation brain function monitors by employing the latest advances in our understanding of the significance and origin of brain waves.
- Developed in 2004 to commercialise the intellectual property related to brain function monitoring.
- Cortical's Brain Anaesthesia Response (BAR) monitor measures brain electrical activity. The electrical activity recorded from the scalp, the **electroencephalogram** (EEG), is one of the most important quantifiable measures of brain function.
- To date in excess of \$1 million has been spent on the development of the technology.
- Believed to be the only EEG based Depth of Anaesthesia monitor to measure both ***hypnotic**** and ***analgesic***# state.

****Hypnotic*** – level of unconsciousness

#***Analgesic*** – pain relief

Problem

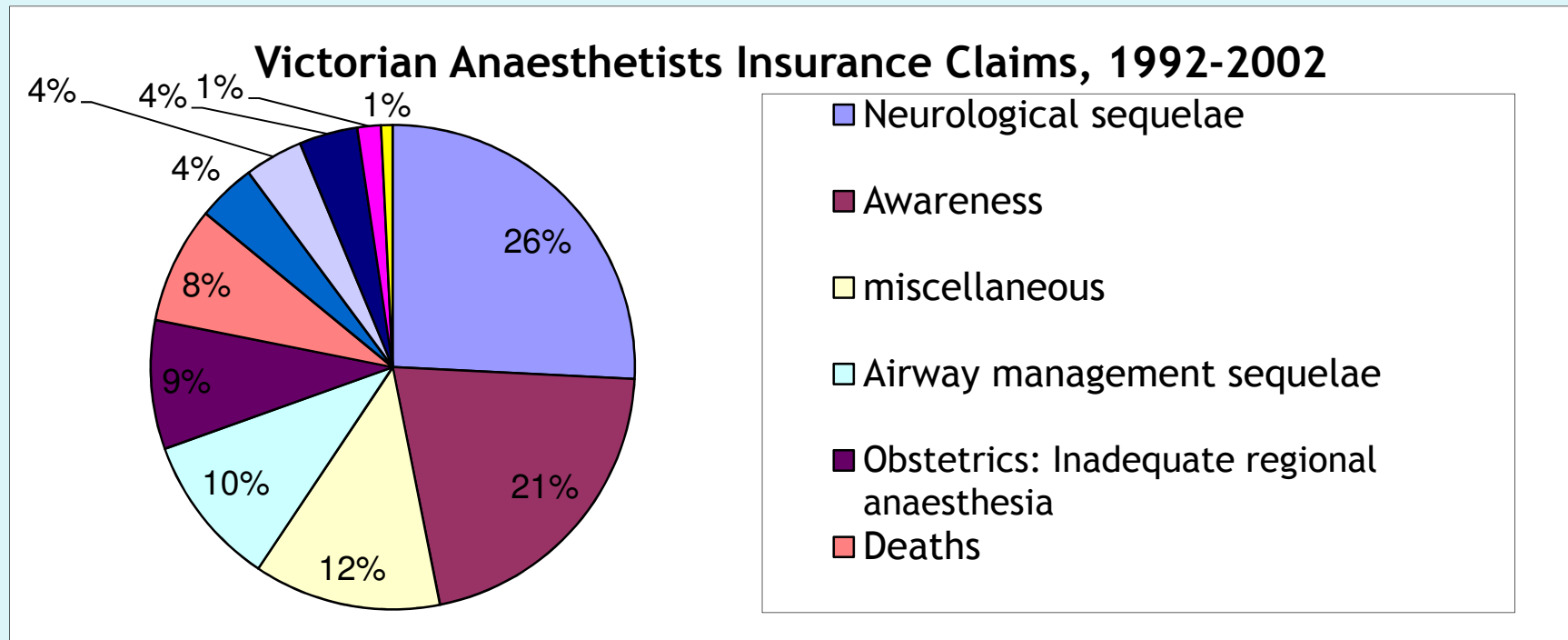


- Anaesthesia awareness or “intra-operative awareness” occurs during general anaesthesia when a patient is not sufficiently anaesthetised to prevent consciousness.
- Incidence rate is approximately 1 to 2 patients per 1000 receiving general anaesthesia.
- Usually a combination of **hypnotic*** and **analgesic#** drugs are used to achieve a state of “balanced” general anaesthesia in the surgical patient.
- *Current* EEG based monitors operate in the context of a number well documented limitations:
 - Incapable of monitoring the analgesic effects.
 - Not all hypnotic agents are reliably measured.

**Hypnotic – level of unconsciousness*

#Analgesic – pain relief

Insurance Claims

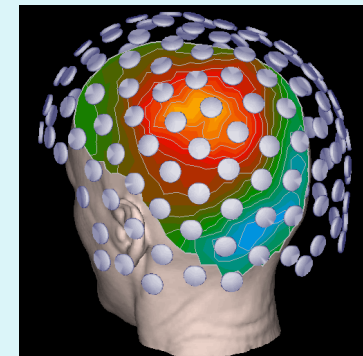
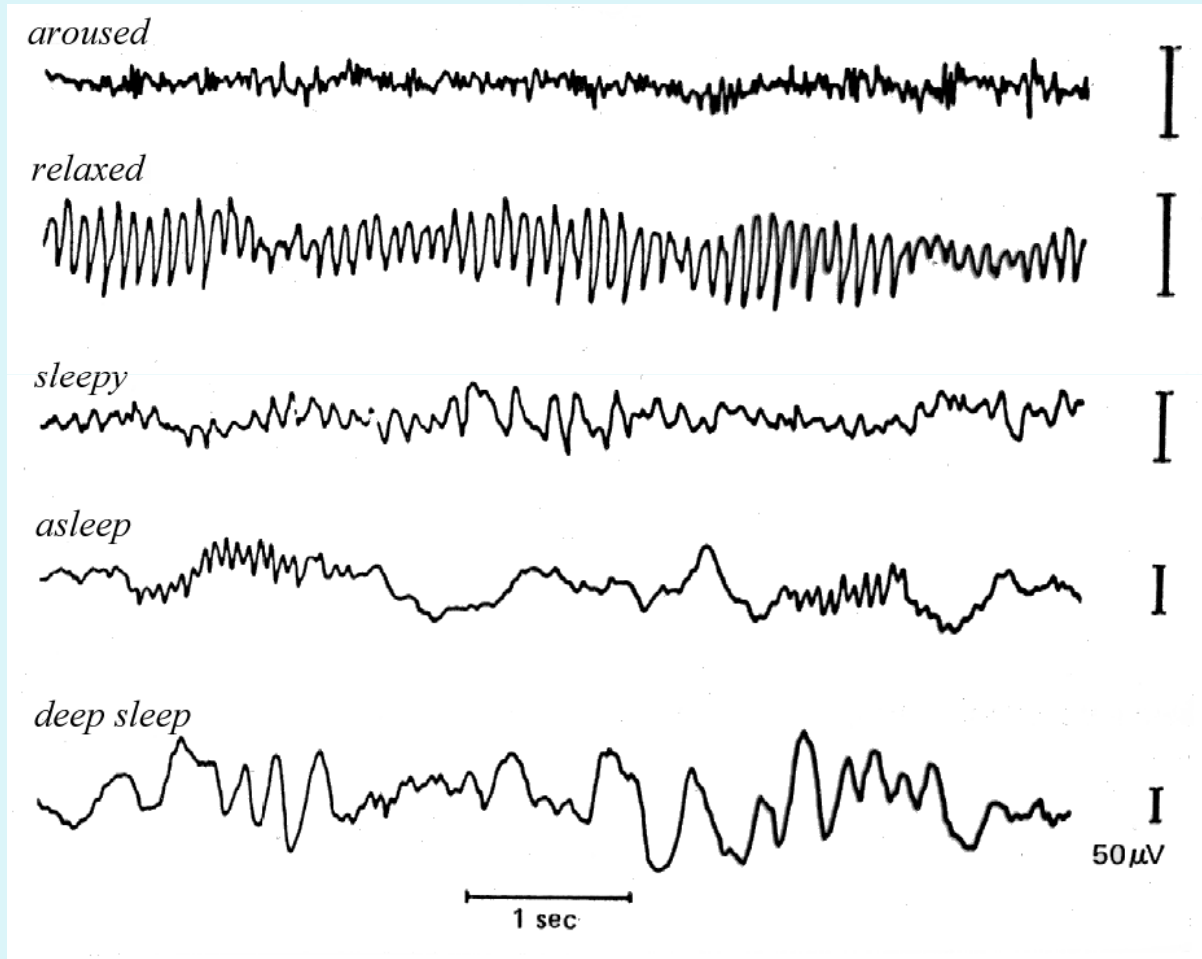


A review by the Australian and New Zealand College of Anaesthetists on Victorian public hospitals' anaesthetic claims, show the top two categories are related with either too much or too little anaesthetic agent being administered

The EEG is State Dependent



Cortical Dynamics
Ltd



Monitors noted on Market



Cortical's Monitor



The BAR monitor is derived from a theoretical understanding of physiological factors that are responsible for the generation of the EEG activity and how the EEG is disrupted by the anaesthetic and sedative agents.

“Scientists must continue to investigate new approaches to intraoperative brain monitoring, founded on firm neurobiologic principles.”

(Avidan, Jacobsohn & Mashour, NEJM, 2011)

“A clear scientific understanding of the causal mechanistic and neurobiologic functions must be superior to the existing heuristically derived black box electroencephalographic monitors”

(Sleigh, ANESTHESIOLOGY, 2010)



BAR terminal

Data Acquisition Monitor

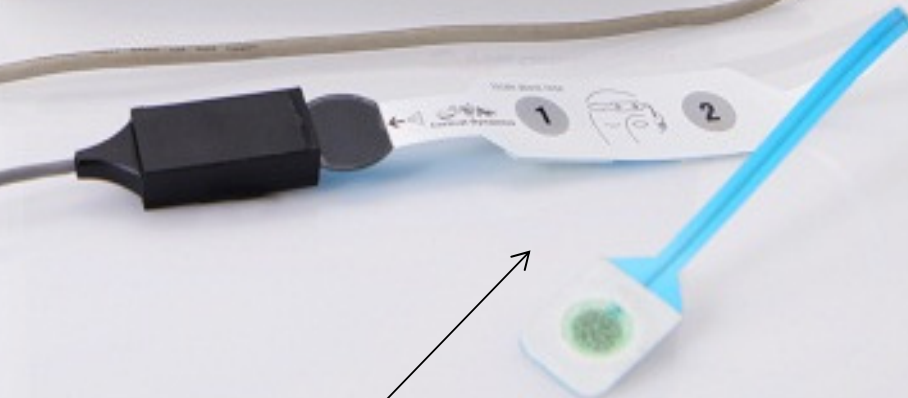


Illustration: GE Healthcare anaesthesia delivery and patient monitoring system

Philosophy

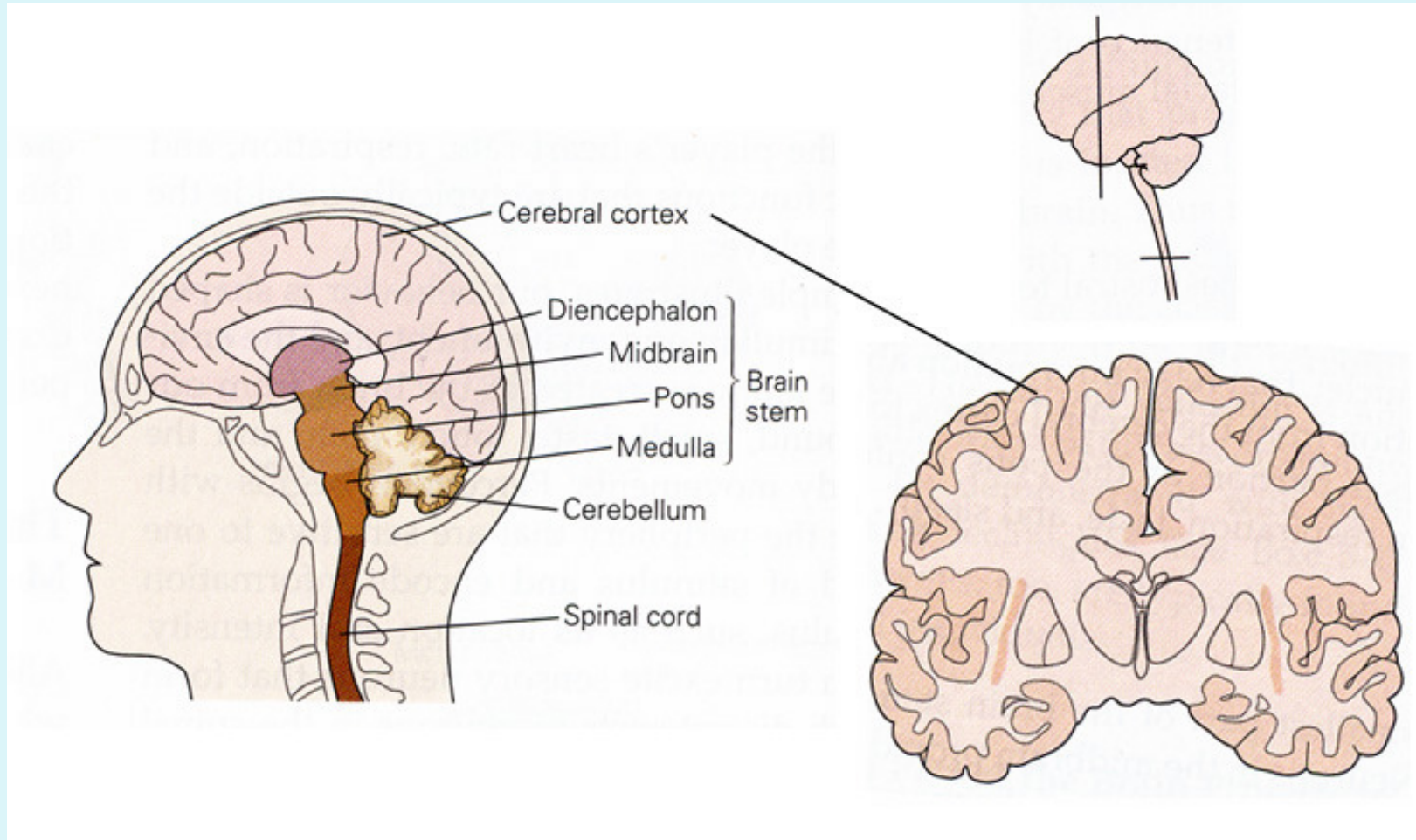


Cortical's philosophy is that a better understanding of the mechanisms that induce unconsciousness will ultimately lead to a better anaesthesia monitor.

Cortical's BAR monitor is the product of this revolutionary philosophy.

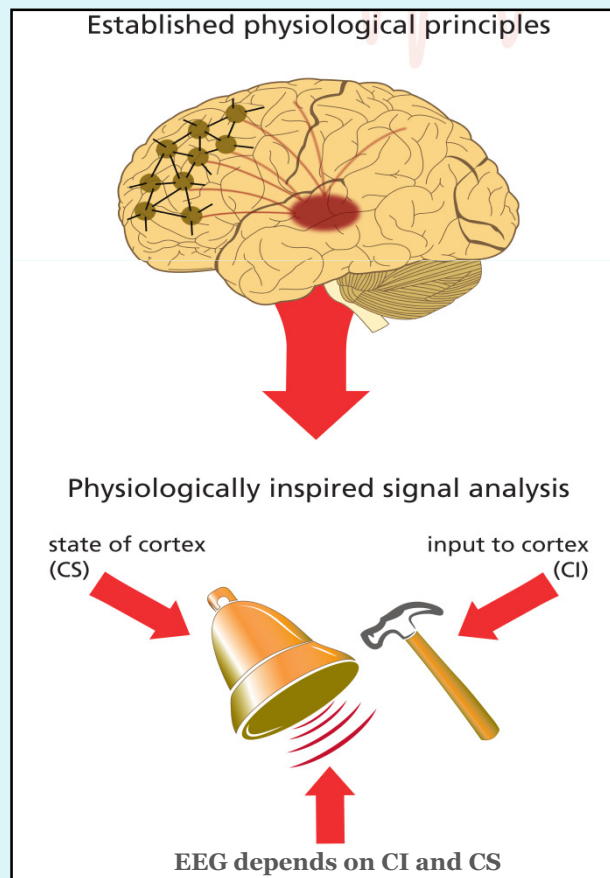


The Human Cerebral Cortex



Two Unique Indices

Distinctively, the BAR monitoring system produces two meaningful measures of anaesthetic action:



Cortical State (CS) –characterises hypnosis.

Cortical Input (CI) –characterises analgesia.

Clinical trials, have revealed that a number of widely used anaesthetic and analgesic agents, not detectable electroencephalographically using existing monitoring approaches, are well documented using the CS and CI indices.

Applications of the BAR monitor



Based on the current EEG applications to date three main applications for the BAR monitoring system have been identified:

- (a) **Patient monitoring by trained staff** in hospital wards, operating theatres or research laboratories (described above);
- (b) **Neuro-diagnostics** of changes in the brain and memory functions to provide early warning of degenerative diseases for hospitals and research trials or studies; and
- (c) **Pain response** and tranquiliser monitoring for hospitals and especially trauma patients in Intensive Care units.

Other applications may include drug discovery, drug evaluation and the emerging Brain Computer Interface (BCI) market, as seen in video.

Anticipated Benefits



- **For the Patient**

- reduced risk of waking up or having recollections of surgical procedure or dreams during the surgical procedure.
- reduced risk of receiving too high a dose of anaesthetic agent which can lead to post-operative nausea and discomfort or even permanent injury or death in the most severe cases.
- significantly improved outcomes particularly for patients at high risk of awareness.

- **For the Anaesthetist**

- facilitate the use of the optimal dose of anaesthetic agent .
- facilitate the delivery of a more reliable and better quality service to its customers (hospitals and patients).
- reduce the risk of litigation due to patient experiencing awareness during surgery, being disabled or dying after the surgical procedure.

- **For the Hospital / Day Clinic**

- Improved likelihood of delivering a better service to its customers (patients).
- optimising the dose of anaesthetic agent used can improve efficiencies by reducing the amounts of anaesthetic agents, and improving patient turn-around times, and can lead to cost savings.
- reduced risk of litigation.

Cortical's Unique Position



Table 1: Comparison of BAR monitor to market leader's monitor

Monitor Name	BAR	Market Leader
Data Source	EEG	EEG
<i>Basis of Analysis</i>		
Statistical Basis		Yes
Physiological Basis	Yes	
<i>Operational Features</i>		
Progressive readings	less than 2s	15 Sec
All connections in one sensor	Yes	Yes
Cheap consumables	Yes	No
Easy Setup (performed by staff)	Yes	Yes
<i>Detection of Anaesthesia Agents</i>		
Variations between patients	Yes	Yes
<i>Inhibitory - inductive (increases neural activity)</i>		
Isoflurane, Sevoflurane, Desflurane	Yes	Yes
Propofol	Yes	Yes
<i>Excitatory - dissociative (reduces neural activity)</i>		
Opioids*	Yes	No
Nitrous Oxide	Yes	No

* Initial data suggests agent can be detected but further trials required.

EEG/EMG/ Brain Function Market



Region/Country	2011	2012	2013	2014	2015	%CAGR
USA	368.6	382.9	396.6	409.6	422.3	3.5
Canada	22.4	23.9	25.4	26.9	28.5	6.1
Japan	110.6	118.4	126.6	135.2	144.2	6.9
Europe	410.4	433.6	457.2	481.1	505.1	5.3
Asia-Pacific	91.5	98.6	106.3	114.4	122.9	7.7
Latin America	27.6	29.4	31.2	33.0	34.9	6.0
Total	1031.2	1086.8	1143.2	1200.2	1257.9	5.1

Table adapted from Brain Function Monitoring Global Strategy Report 2010.

Patent Position



- Cortical Dynamics' competitive advantage is underpinned by a strong patent position.
 - 5 patent families
 - 4 of the 5 patent families have matured into national phase.
Australia, Europe, New Zealand, United States and variously in China and Japan.
 - 21 patent applications, thus far.

A full Patent Attorney's report is included in the Prospectus.

Key Highlights



- The BAR objective is to reduce the risk of post-operative medical conditions and care demands.
- The approach used is fundamentally different from all other devices currently available in that its underlying algorithm produces EEG indexes which are directly related to the physiological state of the patient.
- The BAR monitoring approach has the ability to detect the effects of remifentanyl. At present there is no known EEG based depth of anaesthesia monitoring approach that is able to achieve this.

The Offer



- **10 million** shares at an issue price of **\$0.20** per share representing 8.8% of equity;
- One free attaching option exercisable at \$0.20 on or before 30 September 2013;
- Options will be issued on a one for one basis;
- Oversubscriptions of a further 10 million shares at an issue price of **\$0.20** per share together with One free attaching option exercisable at \$0.20 on or before 30 September 2013.

Current Share Structure



Shares and Options

Shares	Number
Shares on issue at date of prospectus	103 176 221
Share offered in prospectus	10,000,000
Shares on issue at completion prospectus Offer*	113,176,221

Options	Number
Options on issue at date of prospectus	Nil
Options offered in prospectus	10,000,000
Options on issue at completion of prospectus Offer *	10,000,000

* Assuming offer is fully subscribed but not oversubscribed

Market Capitalisation Post Completion of the Offer	\$22,635,244
--	---------------------

Use of Offer Funds



The Company expects to apply the funds raised from the Offer towards:

- BAR sensitivity validation and international trials;
- Analgesia monitor development and patient monitoring system integration;
- TGA Regulatory approval for BAR system;
- Neurodiagnostic monitor development;
- Working capital and administration expenses; and
- Payment of the expenses of the Offer

Board of Directors



Mr David Breeze – Chairman

- Executive positions in Daiwa Securities, Eyres Reed McIntosh & BNZ North's
- Involved in the structuring, capital raising & listing of 80+ companies raising over \$250M
- Chairman of Grandbridge Ltd and BPH Energy Ltd & Executive Director of MEC Resources Ltd
- Bachelor of Economics (University of Tasmania); MBA (University of Western Australia)
- Fellow of the Institute of Company Directors of Australia

Ms Deborah Ambrosini – Executive Director and Company Secretary

- Director of BPH Energy Ltd, Advent Energy Ltd and MEC Resources Ltd
- Extensive experience in biotechnology, IT communications, mining and financial services sector both nationally and internationally
- A member of the Institute of Chartered Accountants
- State Finalist in the 2009 Telstra Business Women's Awards
- A recipient of the 2011 40 under 40 Awards

Mr Bruce Whan – Non Executive Director

- Director of Swinburne Knowledge, Swinburne's Commercialisation unit and CEO of Swinburne Ventures
- Actively involved in innovation for over 20 years
- Involved in 18 start up companies which have attracted investments in excess of \$16M and presently enjoy revenues exceeding \$3M
- A member of the Board of Commercialisation Australia

Mr Greg Gilbert – Non Executive Director

- Specialist in strategy and planning in the health and aged care sector
- Executive positions in Capel Court Investment Bank, CIBC Australia Ltd and B&C Capital
- Extensive background in merchant banking
- Director of BPH Energy Ltd

Technical Expertise



Chief Scientist - Professor David Liley M.B., Ch.B., Ph.D.

Professor David Liley graduated in Medicine at the University of Auckland in 1990, completing a PhD in Psychiatry and Applied Mathematics in 1996. Currently he is one of the senior researchers within the Brain and Psychological Sciences Research Centre at Swinburne University of Technology in Melbourne. He is registered as a medical practitioner with Medical Board of Australia.

Technical Manager - Louis Delacretaz FAICD, MBA

He has over 30 years' experience as the managing or technical director for a number of successful bio-technology, ICT and electronic manufacturing companies. Louis has extensive experience in strategic planning, leading operational initiatives and operational management of business development, design & production facilities for globally marketed products. He possesses in-depth experience in dealing with government agencies, international organizations and forming start-up organizations. Louis has an MBA and is a fellow of the Australian Institute of Company Directors.



CORTICAL DYNAMICS LIMITED

ABN 88 107 557 620

www.corticaldynamics.com

Disclaimer



“This document has been prepared by Cortical Dynamics Ltd (“Cortical”).

The slides are for a presentation to shareholders and other interested parties and contain information concerning Cortical’s operations and proposed expansion.

The views expressed in this presentation contain information that have not been independently verified. No representation or warranty is made as to, and accordingly no reliance should be placed on, the fairness, accuracy, completeness or reliability of the information. Any forward looking information in this document is current as at 10 January 2012 and has been prepared on the basis of a number of assumptions which may prove to be incorrect.

The information and opinions expressed in this document are subject to change without notice and Cortical does not assume any responsibility or obligation, save as required by law, to update publicly or review any forward looking information contained herein, regardless of whether that information is affected by the results of new information, future events or otherwise.

This presentation does not constitute or form part of any invitation to sell or issue, or any solicitation of any offer to purchase or subscribe for, any securities in Cortical, nor shall it or any part of it not the fact of its distribution form the basis of, or be relied on in connection with, any contract or investment decision.”