

# Neuroprotection: a guide to the latest equipment

Hypoxic-ischaemic encephalopathy (HIE) – a condition of altered neurological state resulting from a critical lack of blood flow and oxygen to the brain around the time of birth – is a major cause of death and life-long disability in preterm infants. Monitoring neonatal brain function (by amplitude electroencephalography, aEEG) and brain oxygenation (with near infrared spectroscopy, NIRS), may help with early detection of hypoxia and enable clinicians to intervene to prevent permanent neurological damage. In this review, *Infant* looks at recent innovations in aEEG and NIRS.

## nëo aEEG: designed for simple integration into the neonatal unit

Manufactured by Ant Neuro, the nëo neonatal aEEG cerebral function monitor is easy to use and simplifies workflow, from electrode application through to data export. Now available with automatic seizure detection, the nëo can identify difficult to diagnose complications, such as non-convulsive seizures. The actively shielded Waveguard EEG cap makes it easy to attach the electrodes. With an eight-channel continuous EEG referential, nëo provides diagnostic values with extended coverage and improved seizure detection. It offers graphical and numeric burst suppression ratio and inter-burst-interval, which can assist healthcare professionals in making informed decisions with regards to interventions. Central Medical Supplies Ltd is the sole UK distributor for nëo.



The nëo Waveguard cap is easy to apply.

## NIRS: supporting clinical decisions

NIRS is a promising step forward in monitoring cerebral oxygenation in newborn infants, although its potential benefits and possible harms warrant further investigation by large-scale randomised clinical trials. NIRS devices and sensors for clinical use in newborn infants are becoming commercially available, including:

- INVOS (Medtronic)
- ForeSight (Edwards Lifesciences)
- NIRO (Hamamatsu Photonics)
- OxyPrem (OxyPrem)
- SenSmart (Nonin Medical).

The INVOS system from Medtronic provides actionable monitoring to support clinical decisions on when to intervene. In neonates, cerebral and somatic regional oxygen saturation values provide non-invasive indications of oxygen changes



in the cerebral and peripheral circulatory systems. These values may give an early indication of oxygen deficits associated with impending shock states and harmful effects.

For more information on the products and companies discussed here, visit the *Infant* website Supplier Guide at [www.infantjournal.co.uk](http://www.infantjournal.co.uk)



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## Simplify neonatal brain monitoring

nëo™ is the newest, easy to use cerebral function monitor (CFM) solution available to busy NICUs. Delivering vital information to clinicians to assist with earlier diagnosis and treatment.

Now with Automatic Seizure Detection



Our friendly team is here to help

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