

Brain scan can help doctors tell if babies are feeling pain

RESEARCHERS have developed a non-invasive means to measure whether infants are in pain, which could prevent babies from undergoing excessive discomfort during medical treatments.

One of the major challenges to assessing and managing pain in very young children is that they are unable to articulate their feelings.

Instead, paediatricians must rely on observations of facial expressions or heart rates to infer whether babies are experiencing pain.

Administering pain relief can also be problematic in small children because analgesics that are effective for adults might not be suitable for infants, who metabolise drugs differently - making the correct dosage of the drugs difficult to calculate.

In effort to determine a better metric of pain, scientists established a meas-

urement based on electroencephalographic (EEG) recordings of brain activity among patients at Great Ormond Street Hospital for children in central London.

The Oxford University researchers led by Caroline Hartley measured the EEG signature in a pilot study of 18 infants undergoing a routine procedure for newborn blood screening, then went on to validate their results in four additional studies of 72 babies in total.

The researchers found that EEG signature was also consistent in babies born preterm and was distinct from brain activity changes associated with non-painful stimuli such as flashing lights, gentle touches or loud noises.

They also discovered that the use of anaesthetics reduced the magnitude of the brain scan signal.

The research was published in *Science* magazine.

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