

Premature babies become more sensitive to pain in later life

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(PhysOrg.com) -- Premature babies who undergo painful treatments whilst in intensive care become more sensitive to pain compared to healthy newborns, according to new research by scientists at UCL (University College London).

Published today in the journal *NeuroImage*, the findings suggest that pain-relief should be optimised in preterm infants to minimise their enhanced sensitivity to pain later in life.

During the study [premature infants](#) who received intensive care and had

been in hospital for at least 40 days had their brain activity measured by an electroencephalogram (EEG) whilst undergoing routine clinical heel lances to draw blood. Their brain activity response was found to be greater than in healthy [newborns](#) of the same age undergoing the same treatment, suggesting an increased sensitivity to pain in the preterm group.

Similar [brain activity](#) measurements made whilst both sets of babies were gently touched on the heel showed no difference in [brain activation](#) between the groups, suggesting that this sensitisation is specific to pain rather than touch. This is important because the sense of touch is triggered by being held or cuddled, meaning that ex-premature babies can also benefit from these sensations in the same way as normal infants.

The study, which was funded by the Medical Research Council, supports previous findings that report increased sensitivity to pain in older children who were born prematurely. Scientists believe that in preterm babies the development of the brain's response to pain may be altered by experiences associated with being born prematurely.

“Our study shows that being born prematurely and undergoing [intensive care](#) affects pain processing in the infant brain. These observations may underlie the differences in pain sensitivity reported in older ex-preterm children,” said Dr Rebecca Slater, UCL Department of Neuroscience, Physiology and Pharmacology, and lead author of the study.

“Our ability to measure brain responses to painful events will lead to a better and more informed approach to the administration of analgesia, and enable us to define optimal ways of providing pain relief in this vulnerable population,” added Dr Slater.

More information: Paper: www.elsevier.com/wps/find/journaldescription.cription#description

Provided by University College London

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