

# Neonatal pain facial expression: evaluating the primal face of pain.

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Pain. 2008 Aug 31;138(2):460-71. Epub 2008 Aug 9.

The primal face of pain (PFP) is postulated to be a common and universal facial expression to pain, hardwired and present at birth. We evaluated its presence by applying a computer-based methodology consisting of "point-pair" comparisons captured from video to measure facial movement in the pain expression by way of change across two images: one image before and one image after a painful stimulus (heel-stick). Similarity of facial expression was analyzed in a sample of 57 neonates representing both sexes and 3 ethnic backgrounds (African American, Caucasian and Hispanic/Latino) while controlling for these extraneous and potentially modulating factors: feeding type (bottle, breast, or both), behavioral state (awake or asleep), and use of epidural and/or other perinatal anesthesia. The PFP is consistent with previous reports of expression of pain in neonates and is characterized by opening of the mouth, drawing in of the brows, and closing of the eyes. Although facial expression was not identical across or among groups, our analyses showed no particular clustering or unique display by sex, or ethnicity. The clinical significance of this commonality of pain display, and of the origin of its potential individual variation begs further evaluation.

PMID: 18692963 [PubMed - in process]

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