“My mother’s touch”: Neural processing of affective touch in 6-month-old infants

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BACKGROUND

- Touch is a key element in parent-infant interaction facilitating the formation of their affective bonding.1
- Somatosensory and social areas of the brain are involved in the processing of affective touch in infants.2,3
- A previous study with 9-month-old infants found heart rate deceleration when touch was performed (apparently) by the mother, compared to an unfamiliar woman.4
- Literature caveat: Does the identity of the toucher affect infants’ neural response to affective touch early in the first year of life?

Aim: To compare the pattern of somatosensory and temporal activation in response to affective touch when 6-month-olds perceive the touch as being applied by their mothers versus an unfamiliar female.

METHODS

- Eight 6-month-old infants, full-term, typical development
- Functional near-infrared spectroscopy (fNIRS)
- Target brain areas: Somatosensory and temporal areas (bilateral)
- Mother or unfamiliar female seated next to the infant
- 16 trials: 8 (mother) + 8 (unfamiliar female)

RESULTS & DISCUSSION

Mother seated next to the infant: activation in somatosensory and temporal regions. E.g., Channel 13, pSTS, LH

Unfamiliar female seated next to the infant: no significant activation. E.g., Contrast Mother vs. Unfamiliar female in channel 18, primary somatosensory cortex, RH

- Hand touch - perceived as originating from the mother - elicited activation in somatosensory and social areas of the brain (e.g., pSTS).3
- Source of interpersonal touch – mother versus stranger – modulates neural response in 6-month-olds.5
- Infants’ history of relational and tactile experiences may already influence their neural processing of affective touch.

References:

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