

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

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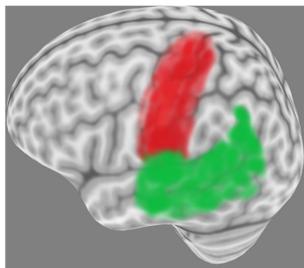
BACKGROUND

- ✓ **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?

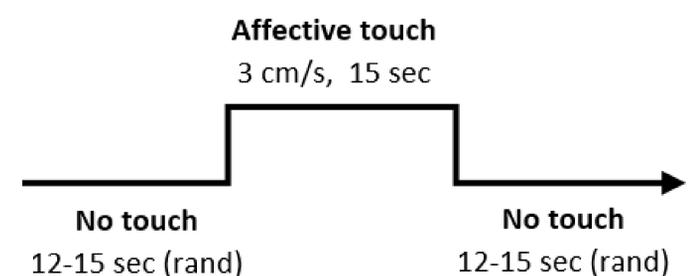
Aim: To compare the pattern of **somatosensory and temporal activation in response to affective touch** when **6-month-olds** perceive the **touch as being applied by their mothers versus an unfamiliar female**.

METHODS

- ✓ **Eight 6-month-old infants**, full-term, typical development
- ✓ **Functional near-infrared spectroscopy (fNIRS)**
- ✓ Target brain areas:
Somatosensory and temporal areas (bilateral)



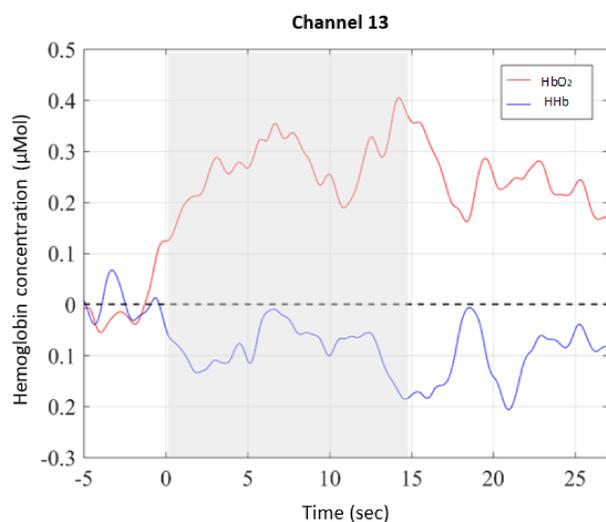
Mother or unfamiliar female
seated next to the infant
16 trials: 8 (mother) + 8 (unfamiliar female)



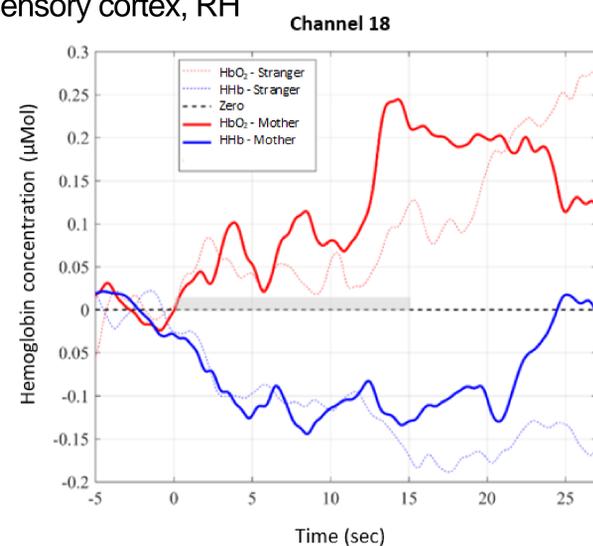
Video extracted from Baby Mozart, Baby Einstein

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.

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