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Hand, spoon or toothbrush? Towards the understanding of the neural underpinnings of affective touch in 5 months-old infants.

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Abstract: It is known that affective touch leads to broad cortical activations including posterior STS, key region of the social brain. Our goal is to discover if a similar pattern of activation can be observed in 5-months-old infants, or whether the development of this cortical specialization results from extensive postnatal experience.

Over two studies we used functional-Near-InfraRed-Spectroscopy (fNIRS) to compare social touch (a human caress) to non-social touch (a caress performed with a spoon in study1 -n=22- or with an electric toothbrush in study2 -n=17-).

In study1 we found similar patterns of activation to the social and non-social stimulus. In study2 we report broad responses to the non-social stimulus, but, to our surprise, we found no activations to the human caress.

In light of these results we conclude that it is possible that at this age discrimination between social and non-social touch in the posterior temporal lobe is still undergoing specialization.