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# Towards a better understanding of ecologically valid parent-infant affective touch research

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## Abstract

**BACKGROUND.** Affective touch is crucial for the healthy development of infants, with C-Tactile afferents, conducting affective information about interpersonal touch, occupying a far-reaching role. However, studying infants is challenging and there exists debate regarding the appropriate methodology for experimental touch research. Standardized laboratory studies are the norm with adult populations, while infants – inherently irritable and sensitive – require a more ecologically valid setting. Thereby, situational-dependent behaviours can cause metabolic changes which affect cardiorespiratory parameters, potentially confounding results.

**AIM.** We explored a golden mean in ecologically valid yet standardized experimental affective touch research with infants.

**METHODS.** To test ecological validity, we measured the effect of a 3-min stroking touch period on mother-infant physiological self-regulation, adding the use or omission of oil, and vanilla baselines pre- and post-stroking touch where the mother stroked a pillow to stabilize metabolic activity. Electrocardiogram (ECG) and respiration of 21 mother-infant dyads (infants aged 5-15 weeks) were measured to calculate RR-intervals (RRI), respiration rates (fR) and respiratory sinus arrhythmia (RSA).

**CONCLUSIONS.** Infants' RSA significantly increased during the post-stroking vanilla baseline but not during stroking touch, indicating a delayed effect. We propose that this can be attributed to the disruption of the infants' ecological context within this standardized experimental setup. The novel interactive context potentially required the infants to acclimate. Furthermore, the use or omission of oil did not influence infant cardio respiration, and overall no changes were observed in the mothers' physiology. These findings highlight the importance of conducting ecologically valid and tailored experimental research when studying infants.

**Keywords:** parental touch, affective touch, oil, vanilla baseline, ecological validity, respiratory sinus arrhythmia

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