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## **IMAGINING THE BABY: NEURAL RESPONSES TO INFANT FACES AND MIND-MINDEDNESS IN EXPECTANT PARENTS**

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**Background:** Pregnancy may be conceptualized as a period of neurophysiological and psychological reorganization to facilitate later caregiving. Although primarily studied in women, the impact of pregnancy on men, and indeed the role of fathers in parenting research more broadly, is receiving increasing attention. In understanding the perinatal origins of parenting, studies have begun to examine parental, specifically maternal, neural responsiveness to infant affective cues during pregnancy, and their potential implications for caregiving postpartum. However, while relations between psychological measures of parenting and caregiving postpartum have been examined, the associations between neural and psychological measures of parenting in pregnancy are yet to be established. Further, the relative strength of and differences in observed relations for expectant mothers and fathers is unknown.

**Aims:** In expectant mothers and fathers, our aims were to examine (1) the P300 elicited by photographs of distress and neutral infant faces; (2) levels of prenatal mind-mindedness as a psychological construct important for later parenting; and (3) whether the P300 would be associated with our measures of prenatal mind-mindedness.

**Method:** Expectant mothers ( $n=38$ ,  $M_{age}=29$ ) and fathers ( $n=30$ ,  $M_{age}=32$ ) during the third trimester of pregnancy viewed infant distress and neutral faces while electroencephalography was recorded. Following pre-processing, the P300 amplitude was measured for each participant. Parents also completed an assessment of prenatal mind-mindedness towards their unborn child.

**Results:** Expectant fathers evidenced a greater P300 response to infant faces as compared to expectant mothers, specifically for infant distress,  $F(1,66) = 8.34$ ,  $p = .004$ . P300 reactivity to infant distress, relative to neutral, faces was associated with prenatal mind-mindedness in expectant fathers,  $r = .38$ ,  $p = .045$ , but not expectant mothers,  $r = .10$ ,  $p = .559$ .

**Conclusions:** Although extension and replication of these findings are warranted, they raise important insight into sex differences in the experience of pregnancy. They also speak to the neural and psychological preparedness of expectant fathers, which has not previously been considered. Critically, our findings indicate that expectant parents can take the perspective of their future child and suggest an important interplay between neural and psychological factors in the preparation for parenthood in expectant mothers and fathers.

**Keywords:** Expectant parents, Parental brain, Mind-mindedness

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