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Fetal Response to Recurrent Maternal Speech: A Longitudinal View

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Abstract Information

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Introduction:
Current research strongly supports that third trimester fetuses have the capacity to “become familiar with recurrent, maternal speech sounds” (DeCasper et al., 1994). However, limited research has investigated the capabilities of the younger fetus (<37 weeks). The purpose of this study is to describe the longitudinal fetal response to recurrent maternal speech from 28 weeks fetal gestation to the early newborn period. More specifically, how does exposure to recurrent maternal speech affect the early fetus behaviorally?

Method(s):
The fetus of 40 women will be longitudinally tracked from 28 weeks gestation to 24-36 hours after birth. All mothers will recite a rhyme twice a day from 28 to 34 weeks (6 weeks) gestation and attend test sessions. Learning will be tested for at 28, 32, 33, and 34 weeks during which heart rate (HR) and movement will be recorded. Fetal learning is hypothesized to occur by the presence of the cardiac orienting response (COR) (Groome et al., 2000), which is a small cardiac deceleration (1-5 beat decrease) during the first 5 seconds of playing the Rhyme. To test for remembering, maternal recitation will be discontinued following the 34 week test session. Remembering will be indicated by the continued presence of the COR at 36, 38 weeks and shortly after birth (between 24 to 36 hours postpartum).

Results:
Enrollment is in progress. Analyses of preliminary findings will begin following transformation of the heart rates to difference scores in order to increase the ability to detect the COR and quantification of body movement. Both within and between subject comparisons of the body movements and difference scores before, during, and after maternal recitation of the rhyme will be made.

Discussion:
Upon completion, findings will be used to increase our knowledge regarding early fetal development; specifically its ability to learn and remember a repeated passage of speech.

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