

# Pilot Testing of the Somatosensory Test of Reaching in Preterm Children

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Somatosensory processing deficits can severely impact a child's ability to learn and develop new motor skills, leading to difficulty in daily functioning. Children born preterm are at higher risk for developing sensorimotor deficits. This pilot study examines differences in somatosensory processing in preterm children using the Somatosensory Test of Reaching (STOR). 55 children (33 full term, 22 preterm, 7-60 months), were recruited via convenience sampling for this cross-sectional study. Participants must be able to sit independently and not have a neurological, neuromuscular, or genetic diagnosis. Participants completed the STOR: children reached for standard sticker targets placed within their visual field (visible target) and on their body (somatosensory targets). Video was coded for contact and peeling using Datavyu. The initial contact distance was calculated as the distance from fingertip to the edge of the sticker, using image analysis software, FIJI. Children also completed the Developmental Assessment of Young Children, 2nd edition (DAYC-2) and the Sensory Profile, 2nd ed (SP-2). Statistical analyses were completed in SPSS. Somatosensory contact distance decreased with age ( $F(3,36)=9.223$ ,  $p<0.001$ ) and the preterm group has slightly higher distance, nearing statistical significance ( $F(1,36)=3.531$ ,  $p=0.068$ ). The visible contact distance significantly decreased with age ( $F(3,46)=8.333$ ,  $p<0.001$ ), but no difference between groups ( $p=0.455$ ). Using the general linear model, controlling for age, the somatosensory target contact distance was significantly correlated with the motor domain score of the DAYC-2 ( $F(1,32)=14.139$ ,  $p<0.001$ ). There were no significant correlations with the SP-2. STOR is a promising tool for assessing somatosensory processing in preterm children, but warrants additional testing in larger samples. Valid assessments of somatosensory processing for young children aids in early identification of impairments allowing for earlier intervention.

## References

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