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**Reproducibility of neonatal behavioural assessments**

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Little is known about the reproducibility or predictive value of behavioural assessment in early infancy. The Neonatal Behavioral Assessment Scale (NBAS) was administered to 788 newborns living near a PCB-contaminated waste site (New Bedford Harbour, Massachusetts) and enrolled in a study of contaminant exposures and infant development. Infants had two assessments (ages 1-3 days and 1-3 weeks). We used factor analysis to reduce the 28 NBAS behavioural items into 6 clusters. Because of the state-dependent nature of this exam, missing items are common so generalized estimating equations were employed to utilize all available data in the factor analyses. Linear regression models were used to assess sociodemographic correlates of cluster scores. The 6 NBAS clusters identified were comparable to those identified in other populations. Orientation, range of state, regulation of state, and habituation clusters were consistent over time – e.g., factor loadings for orientation items ranged from 0.67 to 0.85 in the 1st exam and 0.55-0.84 in the 2nd exam – and across sociodemographic strata (e.g. orientation factor loadings for males ranged from 0.59-0.87; for females 0.72-0.83). In preliminary analyses, maternal race and marital status were associated with orientation, and maternal race and infant gender were associated with range of state. These results demonstrate reproducibility of NBAS exam clusters between populations, over time, and across socioedemographic variables supporting the robustness of the clustering scheme. Predictors of individual cluster performance included variables associated with development at older ages thereby supporting the validity and sensitivity of neonatal behaviour measures reflected in the NBAS clusters.