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The LEA grating test in assessing detection grating acuity in normal infants less than 4 months of age

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Purpose: To assess binocular detection grating acuity using the LEA Gratings test to establish age-related norms in healthy infants during their first 3 months of life.

Method: In this prospective, longitudinal study of healthy infants with clear red reflex at birth, responses to gratings were measured at 1, 2 and 3 months of age using LEA Gratings at a distance of 28 cm. The results were recorded as detection grating acuity values, which were arranged in frequency tables and converted to a one-octave scale for statistical analysis. For the repeated measurements, analysis of variance (ANOVA) was used to compare the detection grating acuity results between different ages.

Results: A total of 133 infants were included. The binocular responses to gratings showed development toward higher mean values and spatial frequencies, ranging from 0.55 ± 0.70 cycles per degree (CPD), or 1.74 ± 0.21 log MAR, in month 1 to 3.11 ± 0.54 CPD, or 0.98 ± 0.16 log MAR, in month 3. Repeated ANOVA indicated differences among grating acuity values in the three age groups.

Conclusions: The LEA Gratings test allowed assessment of detection grating acuity and its development in a cohort of healthy infants during their first three months of life.

Biography

Giovana Martini graduated in Occupational Therapy from Federal University of São Carlos (UFSCar) (2000). She has done a Master's degree in Health Program for Children and Adolescents from the State University of Campinas (UNICAMP). She also has developed activities in clinical practice, research and education with main focus on child development and the interface between health and education for the effectiveness of occupational therapy practices to monitor social and educational inclusion for children with special educational needs. She is a Professor and Supervisor for the Specialization Course in Rehabilitation applied to child neurology (UNICAMP).

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