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- **Conflict of Interest/ Disclosure**

Dr. Richman is a consultant to Bernell Corporation which publishes and sells the DEM Test.

- Abstract title

THE DEVELOPMENTAL EYE MOVEMENT TEST: NORMATIVE VALUES FOR ADULTS

- **ABSTRACT**

- **BACKGROUND AND AIMS**

The Developmental Eye Movement test (DEM), is an established standardized eye movement test designed to evaluate oculomotor behavior in children (ages 6-13). It utilizes a visual-verbal testing format (rapidly naming a series of numbers) to assesses oculomotor function. Developed for use with children, it has the potential to be useful in identifying eye movement dysfunction in adults. The purpose of this study was to administer the DEM test on an adult population in their 3rd through 6th decade of life.

- **METHODS**

The DEM test was administered to a sample of 1041 subjects ranging in age from 22 to 68 years. These subjects were optometric patients from Spain and the United States. All were either native Spanish or English speaking. All subjects were reportedly normal in their ocular health, binocular vision, or visual acuity functions.

- **RESULTS**

Means and standard deviations were calculated for horizontal adjusted time, vertical time, error rates, and ratios for nine groups based on age groups from 22-68 yrs of age. There was no statistically significant difference in the mean score between the Spanish and English speaking subjects. The vertical and horizontal scores were significantly related (Pearson $r= 0.98$; $P<.001$). There was a distinct developmental change in the time scores as a function of age ($P<.005$). As age increased, the

vertical and horizontal times increased concurrently. However, the mean Ratio score for the total sample was 1.01 (0.02) indicative of the stability of the oculomotor component of the DEM and the possible influence of ageing on visual-verbal processing speed and automaticity.

- **CONCLUSIONS**

The development of normative values and use of the DEM test in an adult population is challenging due to the anticipated affect of ageing on cognitive, visual-verbal and eye movement processing. Distinct developmental changes in horizontal and vertical test times were evident with a clear trend to take longer in visual-verbal processing speed as age increased, especially in later decades of life. Further studies are needed with the use of this DEM test data to shed light on its application with diverse groups of adults and clinical populations.