

# NEW PRODUCT REVIEW

## The Developmental Eye Movement™ Test (DEM)

Version 2.0, 2009

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In a recent article Maureen K. Powers, Ph.D., discusses several tests that are in current use to assess visual functioning. They include the Amsler Grid, the Pelli-Robson Contrast Sensitivity Chart, the Teller Acuity Cards and the Developmental Eye Movement Test (DEM).<sup>1</sup> Some commonalities of these tests are their ease in administration, their rigorous design, and that they are based in sound scientific evidence. In essence they are the clinical applications of knowledge that was developed in the laboratory setting. The first three cited tests are used by most clinical optometrists and ophthalmologists. In contrast, the DEM is primarily used by optometrists who provide diagnosis and therapy in the realm of dysfunctions of binocular vision and learning related vision problems. Indeed, it is my impression that the DEM is a standard test for the great majority of their patients.

A new edition of the test recently became available.<sup>2</sup> There are several noteworthy upgrades from the original version. Dr. Jack Richman, chief among the developers of the 1990 version, has significantly expanded the manual. He traces the history of assessing saccadic eye movement efficiency by timing the calling out a series of horizontally arranged single-digit numbers. Dr. Richman points out the DEM's innovation was to include a series of vertically arranged numbers. This is to account for the visual to verbal, or automaticity component that is inherent in the test. Consequently, it can adversely effect performance on the horizontal test that can be equated to reading eye movements. One measure of the popularity of the DEM is the number of investigations into its valid-

*Suchoff IB.. The Developmental Eye Movement Test (DEM). J Behav Optom 2011;22:50-51.*

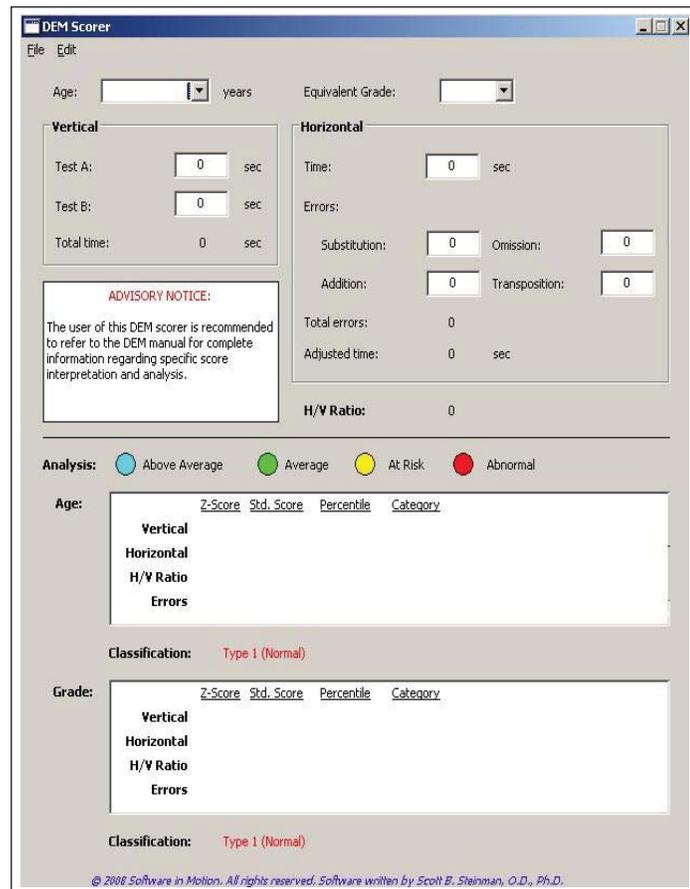


Figure 1.

ity and reliability. Included in the new edition are the results of 15 studies on validity, and seven on reliability that have been conducted over the past 20 years.

The section on test administration is more instructive than the original version. It contains two flow charts; the first outlines a strategy when the vertical derived test score is low, and the second a strategy when the horizontal derived test score is low. Further, the explanations of the case types based on the ratio scores (horizontal

divided by vertical time scores) is more inclusive than on the previous version.

The second major strategy is based on the suggestion made by Solan and Suchoff<sup>3</sup>. They proposed that scores within one standard deviation (SD) from the mean, or 16<sup>th</sup> percentile are appropriately considered as passing in, for example, medical laboratory tests. However, Solan and Suchoff recommended that it is too generous in performance tests like the DEM. They proposed that scores below 0.5 SD or 34<sup>th</sup>

