

AN EVALUATION OF DOT VISUAL ACUITY CARDS

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Purpose: We present two studies to evaluate the reliability of dot visual acuity card testing and obtain baseline data of its clinical use.

Methods: Studies I and II, conducted from October 1997 to July 1998, respectively included 142 patients (284 eyes) aged 7 to 39 years and 101 patients (202 eyes) aged 2 to 6 years. The visual acuity of these subjects was measured by the dot visual acuity card test (DVA) and near visual acuity test (NVA). In study I, the subjects were divided into two groups from 7-12 y/o and from 13-39 y/o. In study II, the children were divided into 3 groups from 2-3 y/o, 3-4 y/o, and 4-6 y/o. We used linear regression analysis to evaluate the reliability and success rate of DVA in comparison to NVA.

Results: In study I, the correlation coefficient (R value) between NVA and DVA in the school-age group (7-12 y/o, 168 eyes) was 0.837; the R value between NVA and DVA in the adult age group (13-39 y/o, 116 eyes) was 0.924. In study II, the success rate of DVA was 52.6% (40/76) in the "very young age group" (2-3 y/o), compared to 2.6% (2/76) with the NVA test. In the "young age group" (3-4 y/o), the success rate of DVA increased to 86.4% (48/56), compared to 71.4% for the NVA test. All children in the "kindergarten age group" (4-6 y/o) successfully took both tests.

Conclusions: Since DVA and NVA were highly correlated and the success rate of DVA was much higher than NVA, the DVA test provided a more reliable method for evaluating visual acuity in preschool children than the standard NVA test.

Key words: Dot Visual Acuity Card, Near Visual Acuity test, correlation coefficient

INTRODUCTION

Subjective visual acuity is usually not noted by traditional methods until the age of 3, because as-

sessing visual acuity in small children is difficult, and the clinician usually has to rely on various means of evaluation. In order to measure visual acuity in preverbal or nonverbal children, methods such as the optokinetic nystagmus (OKN), visual evoked poten-

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