A new stereotest for strabismologists: the covered two pencil test

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PURPOSE. The two pencil test (TPT) checks the ability to perform a simple visual-motor task. The test is only partially based on intact stereopsis, since monocular depth perception clues are involved. To overcome this shortcoming, a new test variant has been developed and tested. METHODS. By covering the tip of the examiner’s rod, monocular cues should be drastically reduced. Twenty normal subjects performed the TPT and the covered two pencil test (CTPT) under monocular and binocular conditions. Each test condition was repeated 15 times. Four subjects were retested by three different examiners in order to determine the observer variation. Differences between the accuracy and observer variation of the two test variants under monocular and binocular condition were compared using the paired t test. RESULTS. The average difference between monocular and binocular accuracy was for the TPT 1.26 cm and for the CTPT 2.37 cm (p<0.0005). The average coefficients of variation of both test variants were similar, for the TPT 0.28 and for the CTPT 0.33 (p>0.1). CONCLUSIONS. This study demonstrates that covering the tip of the examiner’s rod approximately doubles the differences between monocular and binocular accuracy. Therefore, covering seems to reduce monocular cues and increase the stereoscopic value of the TPT.