

# Uji kesesuaian antara alat Optec Vision Tester dengan TNO Stereoscopic Vision Test pada skrining penglihatan stereoskopis = The suitability between Optec Vision Tester and TNO Stereoscopic Vision Test in stereoscopic vision screening

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## Abstrak

Latar Belakang. Pemeriksaan penglihatan stereoskopis (3D) sering dilakukan pada penerimaan calon pekerja pada bidang tertentu, misalnya tentara, pilot, dokter bedah, operator crane, dan lain-lain. TNO Stereoscopic Vision Test (Kartu TNO) – instrumen pemeriksaan stereoskopis yang sering digunakan di Indonesia – masih memiliki kelemahan, misalnya waktu pemeriksaan yang cukup lama, sehingga perlu dicari alternatif pemeriksaan untuk skrining pekerja dalam jumlah besar. Di USA, Optec Vision Tester telah digunakan untuk menguji berbagai fungsi penglihatan, termasuk penglihatan stereoskopis. Namun di Indonesia sampai saat ini belum digunakan dan belum diketahui tingkat kesesuaiannya.

Tujuan. Mengetahui tingkat kesesuaian dan perbandingan durasi pemeriksaan antara Optec Vision Tester dengan pemeriksaan TNO Stereoscopic Vision Test.

Metode. Desain penelitian yang digunakan adalah cross sectional dengan analisis kesesuaian menggunakan pengujian Cohen's Kappa. Semua subyek diperiksa dengan Kartu TNO dan Optec Vision Tester oleh dua pemeriksa yang berbeda. Hasil pemeriksaan (dalam detik busur) dan durasinya dicatat, dan diperoleh sampel sebanyak 341 subyek yang memenuhi syarat. Hasil pemeriksaan vision tester dan Kartu TNO dikatakan normal bila mencapai stereoakuitas 50 dan 60 detik busur, secara berturut-turut.

Hasil. Secara statistik, diperoleh nilai Kappa = 0,625, yang termasuk kategori "fair to good" menurut Fleiss. Median durasi pemeriksaan Kartu TNO dan vision tester secara berturut-turut adalah 96 dan 33 detik, dan berbeda bermakna secara statistik menurut Mann-Whitney U Test.

Kesimpulan. Optec Vision Tester mempunyai nilai kesesuaian tingkat sedang dan durasi pemeriksaan yang lebih singkat bila dibandingkan dengan Kartu TNO.

*Background.* Examination of stereoscopic vision (3D) is often performed at medical check up recruitment in certain fields, such as soldiers, pilots, surgeons, crane operators, and others. However, the TNO Stereoscopic Vision Test (TNO Test) – a widely used instrument for stereoscopic vision inspection in Indonesia – still have some weaknesses, one of them is long examination time. So, it is necessary to look for an alternative screening examination for workers in large numbers. In the USA, Optec Vision Tester has been used to test a variety of visual functions, including stereoscopic vision. But to date in Indonesia it has not been used, and the level of suitability is still unknown.

*Objectives.* To determine the level of suitability and the comparison of the duration between Optec Vision Tester and TNO Stereoscopic Vision Test.

*Methods.* The study design is cross sectional analysis of the suitability test using the Cohen's Kappa calculation. All subjects examined by the TNO Test and Optec Vision Tester by two different examiners. Examination results (in arc seconds) and durations recorded, and obtained eligible samples of 341 subjects. Normal vision tester and TNO Test results determined when a subject could reach the stereoacuity 50 and 60 arc seconds respectively.

Results. Statistically, the Kappa value is 0,625, which is "fair to good" according to Fleiss. Median duration of TNO Test and vision tester examination respectively are 96 and 33 seconds, and statistically significant according to Mann-Whitney U Test.

Conclusion. Optec Vision Tester has a fair to good suitability level and shorter examination duration if compared to the TNO test.</i>