GoCheck Kids

Scientific Evidence Summary

Reference:
Analysis of the Reliability and Repeatability of Distance Visual Acuity Measurement with EyeSpy 20/20.
Vasudevan B, Baker J, Miller C, Feis A. Clin Ophthalmol. 2022;16:1099-1108 https://doi.org/10.2147/OPTH.S352164

Summary:
This study compares visual acuity (VA) testing on a mobile application (utilizing the protocol that is incorporated into the GoCheck Kids app) to standard VA testing with an e-ETDRS chart. The mobile application performs comparably to previously validated e-ETDRS approaches, with faster administration time ($p<0.01$).

Access: Full Article.

Reference:
Performance of Glow Fixation GoCheck Kids and 2WIN Photoscreeners and Retinomax to Uncover Hyperopia.
Levitt AH, Martin SJ, Arnold RW. Clin Ophthalmol. 2020 Aug 10;14:2237-2244. doi: 10.2147/OPTH.S256991

Summary:
This paper compares GCK (iPhone 7+ with the Attractor) vs 2WIN and Retinomax in Hyperopic children. The results show similar sensitivity and specificity between devices. GCK had significantly better performance in detection of hyperopia than 2WIN ($p<0.05$).

Access: Full Article.

Reference:
Performance of four new photoscreeners on pediatric patients with high risk amblyopia.
Arnold RW, Armitage MD. J Pediatr Ophthalmol Strabismus. 2014 Jan-Feb;51(1):46-52. doi: 10.3928/01913913-20131223-02

Summary:
This paper compares GCK (iPhone 4s) vs SPOT, Plusoptix and iScreen. The results show similar sensitivity and specificity among devices. GCK yielded fewer inconclusive results than Plusoptix (3% vs 23%).

Access: Abstract Only.

Reference:
Evaluation of a smartphone photoscreening app to detect refractive amblyopia risk factors in children aged 1-6 years.
Arnold RW, O'Neil JW, Cooper KL, Silbert DI, Donahue SP. Clin Ophthalmol. 2018 Aug 23;12:1533-1537. doi: 10.2147/OPTH.S171935

Summary:
This study analyzes the performance of GCK (iPhone 7+). The overall sensitivity and specificity in detecting amblyopia risk factors were 76% and 85%, respectively, using manual grading, and 65% and 83%, respectively, using automated grading.

Access: Full Article.

Reference:
Effectiveness of the iPhone GoCheck Kids smartphone vision screener in detecting amblyopia risk factors.
Walker M, Duvall A, Daniels M, Doan M, Edmondson LE, Cheeseman EW, Wilson ME, Trivedi RH, Peterseim MMW. J AAPOS. 2020 Feb;24(1):16.e1-16.e5. doi: 10.1016/j.jaapos.2019.10.007

Summary:
This study evaluates the performance of GCK (iPhone 7+) at detecting age-specific ARF. The GoCheck Kids app had good sensitivity (90.5%) and adequate specificity (68.1%) in detecting AAPOS Amblyogenic Risk Factors in a cohort of children from 6 months through 6 years.

Access: Abstract Only.

Reference:
Effectiveness of the GoCheck Kids Vision Screener in Detecting Amblyopia Risk Factors.
Peterseim MMW, Rhodes RS, Patel RN, Wilson ME, Edmondson LE, Logan SA, Cheeseman EW, Shortridge E, Trivedi RH. Am J Ophthalmol. 2018 Mar;187:87-91. doi: 10.1016/j.ajo.2017.12.020

Summary:
This paper evaluates the screening performance of the GoCheck Kids photoscreener. GoCheck Kids had a sensitivity of 76.0% and specificity of 67.2% in detecting ARF. The authors report that the GoCheck Kids smartphone app was useful in identifying ARF in children who are often not able to cooperate with visual acuity testing.

Access: Abstract Only.

Reference:
Positive predictive value and screening performance of GoCheck Kids in a primary care university clinic.
Law MX, Pimentel MF, Oldenburg CE, de Alba Campomanes AG. J AAPOS. 2020 Feb;24(1):17.e1-17.e5. doi: 10.1016/j.jaapos.2019.11.006

Summary:
A total of 2,963 children were screened with a GCK Photoscreening device. 5.8% failed the screening, of whom 115 were evaluated in the pediatric ophthalmology clinic. The mean age was 24.9 ± 11.1 months (range, 3-48). Fifty-seven patients met ARF criteria, yielding a PPV of 50%. The PPV was higher in patients of Latino/Hispanic ethnicity (75%) and lowest between age 3-12 months (26%).

Access: Abstract Only.

Reference:
The Positive Predictive Value of Smartphone Photoscreening in Pediatric Practices.
Arnold RW, Arnold AW, Hunt-Smith TT, Grendahl RL, Winkle RK. J Pediatr Ophthalmol Strabismus. 2018 Nov 19;55(6):393-396. doi: 10.3928/01913913-20180710-01

Summary:
This paper evaluates the performance of the GoCheck Kids photoscreener. Five percent of 6,310 in-office screenings were referred: 25% for high anisometropia, 31% for hyperopia, and 15% for myopia. The positive predictive value (PPV) in 217 follow-up examinations was 68%, with a follow-up rate of 65%

Access: Abstract Only.
