| First Author, Year  Study Name | Proportion Unexaminable by Screening Test | How Did Study Handle Unexaminable Patients and/or Uninterpretable Results? | Proportion Who Underwent Reference Standard and Included in Analyses | Sensitivity (95% CI) | Specificity (95% CI) |
| --- | --- | --- | --- | --- | --- |
| Afsari et al, 201377  Sydney Paediatric Eye Disease Study | 35% (855/2,461) | Excluded | All had reference standard | SSST-strabismus  120: 83% (62 to 104)  240: 50% (22 to 78)  480: 50% (22 to 78)  SSST-anisometropia  120: 33% (7 to 60)  240: 17% (-4 to 38)  480: 17% (-4 to 38)  SSST-amblyopia  120: 50% (1 to 99)  240: 50% (1 to 99)  480: 50% (1 to 99)  RPST-strabismus  200: 48% (31 to 66)  400: 36% (20 to 53)  800: 27% (12 to 42)  RPST-anisometropia  200: 35% (15 to 54)  400: 30% (12 to 49)  800: 9% (-3 to 20)  RPST-amblyopia  200: 53% (25 to 77)  400: 47% (23 to 71)  800: 24% (3 to 44) | SSST-strabismus  120: 60% (56 to 65)  240: 87% (83 to 90)  480: 96% (94 to 98)  SSST-anisometropia  120: 59% (54 to 64)  240: 86% (82 to 89)  480: 95% (93 to 97)  SSST-amblyopia  120: 59% (55 to 64)  240: 85% (82 to 89)  480: 95% (93 to 97)  RPST-strabismus  200: 93% (92 to 95)  400: 97% (96 to 98)  800: 99% (98 to 99)  RPST-anisometropia  200: 93% (91 to 94)  400: 96% (95 to 97)  800: 98% (97 to 99)  RPST-amblyopia  200: 93% (91 to 94)  400: 96% (95 to 97)  800: 98% (97 to 99) |
| Arthur et al, 200978 | 0.3% (1/307) | Excluded | 90% (275/306) | 0.83 (0.67 to 0.93) | 0.95 (0.92 to 0.98) |
| Barry et al, 200179 | NR | NR | 95% (404/427) | 0.80 (0.44 to 0.98) | 0.58 (0.53 to 0.62) |
| Barry et al, 200380 | 11% (133/1,180) | Excluded from analysis | 83% (975/1,180) | 0.91 (0.71 to 0.99) | 0.94 (0.92 to 0.95) |
| Bertuzzi et al, 200681 | 4% (6/149) (7% in those 38–42 months, 3% in those 43–48 months, and 0% in those 49–54 months) | Excluded from analysis | 96% (143/149) | A: 0.96 (0.78 to 1.0)  B: 0.78 (0.56 to 0.92) | A: 0.83 (0.75 to 0.90)  B: 0.93 (0.87 to 0.97) |
| Chui et al, 200482 | NR | Considered positive screens | 79% (141/179) | 0.67 (0.41–0.87)  <41 months: 0.75 (0.43 to 0.94)  >41 months: 0.50 (0.12 to 0.88) | 0.86 (0.79–0.92)  <41 months: 0.90 (0.52 to 0.82)  >41 months: 0.95 (0.88 to 0.99) |
| Cogen et al, 199283 | 11% (14/127) | Excluded from analysis | 89% (113/127) | 0.85 (0.55 to 0.98) | 0.94 (0.87 to 0.98) |
| Dahlmann-Noor et al, 2009a84 | 14% (18/126) | Excluded from analysis | 100% (108/108) | A: 0.88 (0.30 to 1.0)  B: 0.20 (0.10 to 0.35)  C: 0.75 (0.36 to 0.96)  D: 0.50 (0.31 to 0.69) | A: 0.96 (0.89 to 0.99)  B: 0.99 (0.92 to 1.0)  C: 0.93 (0.86 to 0.97)  D: 0.87 (0.77 to 0.93) |
| Dahlmann-Noor et al, 2009b85 | 0% (0/288) | NA | 100% (288/288) | 0.45 (0.29 to 0.62) | 1.0 (0.98 to 1.0) |
| Harvey, 200986 | 4.4% (34/825) were unable to obtain any acceptable measurement; 11.3% (93/825) unable to obtain measurement with confidence ≥6 | Excluded those with uninterpretable gold standard | 825 | NR | NR |
| Hope et al, 199087 | 5% (8/176) | Excluded from analysis | 95% (168/176) | 0.89 (0.52 to 1.0) | 0.76 (0.68 to 0.82) |
| Jost, 201589 | A: 7% (7/102)  B: 6% (6/102) | Received the reference standard but were excluded from the analysis | A: 93% (95/102)  B: 94% (96/102) | A: 1.00 (0.02 to 1.0)  B: 1.00 (0.02 to 1.0) | A: 0.90 (0.83 to 0.96)  B: 0.87 (0.79 to 0.93) |
| Kemper et al, 200590 | 32% (55/170) | Not described, appear to have been excluded | 100% (170/170) | Overall: 0.85 (0.69 to 0.95)  <3 years old (n=80): 0.80 (0.44 to 0.97)  3–5 years old (n=90): 0.88 (0.68 to 0.97) | Overall: 0.52 (0.40 to 0.63)  <3 years old: 0.41 (0.24 to 0.61)  3–5 years old: 0.58 (0.42 to 0.71) |
| Kennedy et al, 198991 | NR | NR | 100% (236/236) | Any condition  A: 0.94 (0.87 to 0.98)  B: 0.85 (0.76 to 0.91)  Strabismus  A: 0.91 (0.81 to 1.00)  B: 0.73 (0.58 to 0.88)  Refractive error  A: 0.89 (0.74 to 1.00)  B: 0.89 (0.74 to 1.00)  Strabismus + refractive error  A: 0.98 (0.93 to 1.00)  B: 0.91 (0.82 to 0.99) | Any condition  A: 0.94 (0.89 to 0.98)  B: 0.87 (0.80 to 0.92) |
| Kennedy et al, 199592 | NR | NR | 100% (13/13 or 22/22) of positive screens, 20% random sample (241 or 242 of 1,232 or 1223) of negative screens | A: 0.46 (0.22 to 0.72)b  B: 0.09 (0.04 to 0.20)b | A: 1.0 (0.99 to 1.0)b  B: 1.0 (0.99 to 1.0)b |
| Kennedy et al, 200093 | 6% (26/449) | Excluded from analysis | 94% (423/449) | 0.92 (0.88 to 0.95)  <3 years: 1.0  4–6 years: 0.92 | 0.89 (0.83 to 0.94)  <3 years: 0.97  4–6 years: 0.95 |
| Kulp et al, 201494  VIP (Phases 1 and 2) | NR (but it was 0.5% in the VIP Phase I publication from 2004) | NR | NR | Data reported for multiple cutpoints and multiple set specificities (Table S6 of supplement)a  *Any SRE*  *NCR*  A: 0.96  B: 0.94  C: 0.93  D: 0.89  E: 0.85  F: 0.81  *Retinomax*  A: 0.96  B: 0.93  C: 0.91  D: 0.86  E: 0.83  F: 0.73  *SureSight*  A: 0.94  B: 0.91  C: 0.88  D: 0.83  E: 0.77  F: 0.68  Data also reported separately for myopia, hyperopia, astigmatism, and anisometropia for NCR, Retinomax, and SureSight for each cutpoint | A: 0.50  B: 0.60  C: 0.70  D: 0.80  E: 0.85  F: 0.90 |
| Leone et al, 201295  Sydney Paediatric Eye Disease Study | Visual acuity testing using ATS HOTV:  24 to <30 mo: 90%  30 to <36 mo: 53%  36 to <42 mo: 20%  42 to <48 mo: 7%  48 to <54 mo: 5%  54 to <60 mo: 2%  ATS HOTV by age and gender:  24 to <42 mo male: 44%  24 to <42 mo female: 47%  42 to <60 mo male: 92%  42 to <60 mo female: 99%  ATS HOTV by age and race  24 to <42 mo European Caucasian: 49%  24 to <42 mo East Asian: 53%  24 to<42 mo Other: 36%  42 to <60 mo European Caucasian: 96%  42 to <60 mo East Asian: 98%  42 to <60 mo Other: 93% | NA | NA | NA | NA |
| Matta et al, 200896 | Not reported | Not described | 100% (109/109) | A: 0.98 (0.85 to 1.0)  B: 0.98 (0.85 to 1.0) | A: 0.68 (0.51 to 0.81)  B: 0.88 (0.74 to 0.96) |
| Miller et al, 199997 | 4% (10/245) | Not described | 100% (245/245) | A: 0.91 (0.82 to 0.96)  B: 0.91 (0.82 to 0.96) | A: 0.44 (0.37 to 0.52)  B: 0.86 (0.80 to 0.91) |
| Miller et al, 200198 | A: 8% (30/376)  B: 6% (24/369)b  C: 0.3% (1/379)  D: 0.5% (2/379) | Unable to complete screening considered positive screen; uninterpretable photographs considered positive screen | 100% (379/379) | A: 0.93 (0.87 to 0.97)  B: 0.66 (0.59 to 0.73)c  C: 0.95 (0.91 to 0.98)  D: 0.93 (0.88 to 0.96) | A: 0.51 (0.44 to 0.57)  B: 0.71 (0.64 to 0.78)c  C: 0.77 (0.71 to 0.83)  D: 0.95 (0.91 to 0.98) |
| Morgan et al, 198799 | 10% (6/63) | Excluded from analysis | 90% (57/63) | 0.91 (0.76 to 0.98) | 0.74 (0.52 to 0.90) |
| Ottar et al, 1995100 and Donahue et al, 2002101 | 2.5% (25/1,004) small pupil diameter, poor  mydriasis, or poor cooperation | Excluded from analysis | 98% (985/1,004) | A: 0.82 (0.76 to 0.87)  B: 0.50 (0.39 to 0.61) | A: 0.91 (0.88 to 0.93)  B: 0.98 (0.97 to 0.99) |
| Rogers et al, 2008102 | SureSight: 24% (24/100); 20% (9/45) in children ages 4–6 years  MTI: 4% (4/100); 0% (0/45) in children ages 4– 6 years | Considered positive screens | 100% (100/100) | A: 0.97 (0.88 to 1.0)  B: 0.79 (0.67 to 0.89)  C: 0.67 (0.54 to 0.79)  D: 0.62 (0.48 to 0.74)  E: 0.95 (0.86 to 0.99) | A: 0.38 (0.24 to 0.54)  B: 0.64 (0.48 to 0.78)  C: 0.69 (0.53 to 0.82)  D: 0.74 (0.58 to 0.86)  E: 0.88 (0.74 to 0.96) |
| Shallo-Hoffmann et al, 2004103 | HOTV: 19% (25/134)  LEA: 5% (10/134)  Random Dot E: 7% (20/268) | Considered positive screens | 100% (21/21) of positive screens, 24% (60/248) of negative screens | 0.73 (0.13 to 0.98)¶ | 0.94 (0.90 to 0.96)¶ |
| Tong et al, 2000105 | 19% (74/387) | Classified as positive or negative screens, but unclear how this was done | 100% (387/387) | A (all photographs): 0.56 (0.50 to 0.62)  B (informative subset of 313 photographs): 0.65 (0.59 to 0.71) | A: 0.91 (0.84 to 0.96)  B: 0.87 (0.76 to 0.94) |
| Schmidt et al, 200465 and Freedman et al, 2006104  VIP Study (Phase I) | 0.5% (6/1142) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A: 0.61 (0.56 to 0.66)  B: 0.49 (0.44 to 0.54)  “Very important to detect and treat early” conditions  A: 0.77 (0.70 to 0.84)  B: 0.65 (0.57 to 0.73)  Amblyopia  A: 0.76 (0.66 to 0.86)  B: 0.65 (0.55 to 0.76)  Reduced visual acuity  A: 0.58 (0.50 to 0.67)  B: 0.48 (0.39 to 0.56)  Strabismus  A: 0.56 (0.42 to 0.71)  B: 0.48 (0.34 to 0.62)  Refractive error  A: 0.70 (0.64 to 0.76)  B: 0.40 (0.34 to 0.46) | Any condition  A: 0.90 (0.88 to 0.92)  B: 0.94 (0.92 to 0.96) |
| Schmidt et al, 200465 and Freedman et al, 2006104  Crowded Linear HOTV visual acuity test | 0.6% (7/1141) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A: 0.54 (0.49 to 0.59)  B: 0.36 (0.31 to 0.41)  “Very important to detect and treat early” conditions  A: 0.72 (0.64 to 0.79)  B: 0.48 (0.40 to 0.57) | Any condition  A: 0.89 (0.87 to 0.91)  B: 0.93 (0.91 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  Random Dot E stereoacuity test | 9.7% (111/1142) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A: 0.42 (0.37 to 0.47)  B: 0.22 (0.18 to 0.27)  “Very important to detect and treat early” conditions  A: 0.59 (0.50 to 0.67)  B: 0.30 (0.22 to 0.38) | Any condition  A: 0.90 (0.88 to 0.92)  B: 0.92 (0.90 to 0.94) |
| Schmidt et al, 200465 and Freedman et al, 2006104  Stereo Smile II stereoacuity test | 1.9% (27/1,446) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A: 0.44 (0.39 to 0.49)  B: 0.33 (0.28 to 0.38)  “Very important to detect and treat early” conditions  A: 0.72 (0.65 to 0.79)  B: 0.57 (0.50 to 0.64) | Any condition  A: 0.91 (0.89 to 0.93)  B: 0.94 (0.92 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  Retinomax autorefractor | 0.5% (6/1,142) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A: 0.64 (0.60 to 0.67)  B: 0.52 (0.48 to 0.56)  “Very important to detect and treat early” conditions  A: 0.87 (0.84 to 0.91  B: 0.81 (0.77 to 0.85) | Any condition  A: 0.90 (0.88 to 0.91)  B: 0.94 (0.93 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  SureSight autorefractor | 0.3% (8/2,577) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A1: 0.85 (0.81 to 0.88)  A2: 0.63 (0.59 to 0.65)  B: 0.51 (0.46 to 0.56)  “Very important to detect and treat early” conditions  A1: 0.96 (0.93 to 0.99)  A2: 0.81 (0.75 to 0.87)  B: 0.75 (0.69 to 0.81) | Any condition  A1: 0.62 (0.59 to 0.65)  A2: 0.90 (0.88 to 0.92)  B: 0.94 (0.92 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  iScreen photoscreener | 0.1% (2/1,439) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition: 0.37 (0.32 to 0.42)  “Very important to detect and treat early” conditions: 0.57 (0.50 to 0.64) | Any condition: 0.94 (0.92 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  MTI photoscreener | 0% (0/1444) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition: 0.37 (0.32 to 0.42)  “Very important to detect and treat early” conditions: 0.55 (0.48 to 0.63) | Any condition: 0.94 (0.92 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  Power Refractor II | 1.5% (22/1,438) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition  A: 0.54 (0.49 to 0.59)  B: 0.36 (0.31 to 0.41)  “Very important to detect and treat early” conditions  A: 0.72 (0.65 to 0.79)  B: 0.56 (0.48 to 0.63) | Any condition  A: 0.90 (0.88 to 0.92)  B: 0.94 (0.92 to 0.95) |
| Schmidt et al, 200465 and Freedman et al, 2006104  Cover-uncover test | 2.1% (24/1,141) | Excluded from analysis | 83% (2,588/3,121) of enrolled patients | Any condition: 0.16 (0.12 to 0.20)  “Very important to detect and treat early” conditions: 0.24 (0.17 to 0.31) | Any condition: 0.98 (0.97 to 0.99) |
| VIP Study Group, 2011106 | A (Palm-AR): 0.8% (3/380 eyes)  B (Retinomax): 0.3% (1/380) | Considered them to be a positive screen | 95% (181/190) | For 90% specificity, by severity  *Overall*  A: 0.74 (0.61 to 0.84)  B: 0.78 (0.67 to 0.88)  *Group 1*  A: 0.79 (0.59 to 0.92)  B: 0.93 (0.84 to 0.94)  *Group 2*  A: 0.77 (0.55 to 0.92)  B: 0.64 (0.41 to 0.83)  *Group 3*  A: 0.60 (0.32 to 0.84)  B: 0.73 (0.45 to 0.92)  Type of Condition  *Amblyopia*  A: 0.75 (0.53 to 0.90)  B: 0.88 (0.68 to 0.97)  *Strabismus*  A: 0.70 (0.35 to 0.93)  B: 0.70 (0.35 to 0.93)  *Refractive Error*  A: 0.84 (0.71 to 0.92)  B: 0.84 (0.71 to 0.92)  *Reduced visual acuity*  A: 0.30 (0.06 to 0.65)  B: 0.70 (0.35 to 0.93) | Specificity set at 90% or 94% for all sensitivities reported; calculated 95% CIs were (0.83 to 0.95) and (0.88 to 0.98), respectively. |
| VIP Study Group, 2011106 |  | Considered them to be a positive screen | 95% (181/190) | For 94% specificity, by severity  *Overall*  A: 0.66 (0.53 to 0.77)  B: 0.66 (0.53 to 0.77)  *Group 1*  A: 0.71  B: 0.82  *Group 2*  A: 0.64  B: 0.50  *Group 3*  A: 0.60  B: 0.60  Type of Condition  *Amblyopia*  A: 0.67  B: 0.83  *Strabismus*  A: 0.60  B: 0.60  *Refractive Error*  A: 0.76  B: 0.75  *Reduced visual acuity*  A: 0.30  B: 0.30 |  |
| VIP Study Group, 2010107 | A: 0.53% (6/1,253)  B: 0.79% (9/1,253) | Considered them to be a positive screen | 91% (1,142/1,253) | For 90% specificity  *To detect >1 Condition*  *3 years*  A: 0.61 (0.47 to 0.73)  B: 0.46 (0.33 to 0.59)  *4 years to young*  A: 0.57 (0.46 to 0.67)  B: 0.57 (0.46 to 0.67)  *4 years to old*  A: 0.65 (0.54 to 0.75)  B: 0.57 (0.45 to 0.67)  *5 years*  A: 0.60 (0.51 to 0.70)  B: 0.56 (0.46 to 0.65)  *To detect a group 1 condition*  *3 years*  A: 0.83 (0.61 to 0.95)  B: 0.57 (0.34 to 0.77)  *4 years to young*  A: 0.73 (0.56 to 0.86)  B: 0.65 (0.47 to 0.80)  *4 years to old*  A: 0.83 (0.65 to 0.94)  B: 0.80 (0.61 to 0.92)  *5 years*  A: 0.78 (0.63 to 0.88)  B: 0.82 (0.68 to 0.91) | Specificity set at 90% or closest to 90% achievable  *To detect >1 Condition*  *3 years*  A: 0.90 (0.84 to 0.94)  B: 0.88 (0.82 to 0.93)  *4 years to young*  A: 0.91 (0.86 to 0.94)  B: 0.91 (0.86 to 0.94)  *4 years to old*  A: 0.90 (0.85 to 0.94)  B: 0.87 (0.82 to 0.91)  *5 years*  A: 0.92 (0.87 to 0.95)  B: 0.92 (0.87 to 0.95)  *To detect a group 1 condition*  *3 years*  A: 0.90 (0.85 to 0.94)  B: 0.88 (0.83 to 0.92)  *4 years to young*  A: 0.91 (0.87 to 0.94)  B: 0.91 (0.87 to 0.94)  *4 years to old*  A: 0.90 (0.86 to 0.93)  B: 0.87 (0.82 to 0.91)  *5 years*  A: 0.92 (0.88 to 0.95)  B: 0.92 (0.88 to 0.95) |
| Ying et al, 2011111  VIP (Phases 1 and 2) | A: 0.79% (9/1,142)  B: 0.35% (19/5,476)  C: 1.27% (55/4,341) | Considered them to be a positive screen | NR | Sensitivity dependent on specificity for any targeted condition and given for group 1 and any targeted conditiond  Specificity 0.50  *Group 1 Conditions*  A: 0.98  B: 0.96  C: 0.98  *Any Targeted Condition*  A: 0.88  B: 0.90  C: 0.91  Specificity 0.60  *Group 1 Conditions*  A: 0.96  B: 0.96  C: 0.95  *Any Targeted Condition*  A: 0.84  B: 0.88  C: 0.88  Specificity 0.70  *Group 1 Conditions*  A: 0.96  B: 0.95  C: 0.95  *Any Targeted Condition*  A: 0.81  B: 0.83  C: 0.83 | Fixed at 0.50, 0.60, 0.70, 0.80, 0.85, 0.90, or 0.95 |
| Ying et al, 2011111  VIP (Phases 1 and 2) |  |  |  | Specificity 0.80  *Group 1 Conditions*  A: 0.96  B: 0.92  C: 0.90  *Any Targeted Condition*  A: 0.76  B: 0.77  C: 0.77  Specificity 0.85  *Group 1 Conditions*  A: 0.92  B: 0.91  C: 0.87  *Any Targeted Condition*  A: 0.71  B: 0.73  C: 0.72  Specificity 0.90  *Group 1 Conditions*  A: 0.90  B: 0.87  C: 0.82  *Any Targeted Condition*  A: 0.64  B: 0.68  C: 0.65  Specificity 0.95  *Group 1 Conditions*  A: 0.85  B: 0.83  C: 0.77  *Any Targeted Condition*  A: 0.56  B: 0.58  C: 0.55 |  |
| VIP Study Group, 2005108  Phase II | <2% | NR | Year 1: NR  Year 2: 94% (1,452/1,541) | By severity, screener tool  *Any condition*  *Nurse*  A: 0.68 (0.64 to 0.72)  B: 0.64 (0.60 to 0.68)  C: 0.49 (0.44 to 0.54)  D: NA  E: 0.45 (0.40 to 0.50)  F: NA  *Lay Screener*  A: 0.62 (0.57 to 0.66)  B: 0.61 (0.56 to 0.66)  C: 0.37 (0.32 to 0.42)b  D: 0.61 (0.56 to 0.66)  E: 0.40 (0.36 to 0.45)  F: 0.47 (0.42 to 0.52)b  *Group1*  *Nurse*  A: 0.88 (0.83 to 0.92)  B: 0.83 (0.77 to 0.88)  C: 0.60 (0.53 to 0.67)  D: NA  E: 0.58 (0.51 to 0.65)  F: NA  *Lay Screener*  A: 0.85 (0.79 to 0.89)  B: 0.82 (0.76 to 0.87)  C: 0.50 (0.42 to 0.58)b  D: 0.78 (0.72 to 0.83)  E: 0.56 (0.49 to 0.63)  F: 0.70 (0.62 to 0.77)b | By severity, screener tool  *Any condition*  *Nurse*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)  D: NA  E: 0.90 (0.88 to 0.92)  F: NA  *Lay Screener*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)b  D: 0.91 (0.89 to 0.93)  E: 0.90 (0.88 to 0.92)  F: 0.90 (0.88 to 0.92)b  *Group1*  *Nurse*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)  D: NA  E: 0.90 (0.88 to 0.92)  F: NA  *Lay Screener*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)b  D: 0.91 (0.89 to 0.93)  E: 0.90 (0.88 to 0.92)  F: 0.90 (0.88 to 0.92)b |
| VIP Study Group, 2005108  Phase II |  |  |  | *Group 2*  *Nurse*  A: 0.59 (0.51 to 0.67)  B: 0.57 (0.48 to 0.65)  C: 0.38 (0.30 to 0.47)  D: NA  E: 0.37 (0.29 to 0.45)  F: NA  *Lay Screener*  A: 0.49 (0.41 to 0.58)  B: 0.51 (0.42 to 0.59)  C: 0.19 (0.12 to 0.27)b  D: 0.51 (0.42 to 0.59)  E: 0.31 (0.24 to 0.40)  F: 0.31 (0.23 to 0.40)b  *Group 3*  *Nurse*  A: 0.39 (0.30 to 0.49)  B: 0.34 (0.25 to 0.44)  C: 0.42 (0.32 to 0.52)  D: NA  E: 0.30 (0.21 to 0.39)  F: NA  *Lay Screener*  A: 0.36 (0.27 to 0.46)  B: 0.34 (0.25 to 0.44)  C: 0.35 (0.25 to 0.45)b  D: 0.40 (0.31 to 0.50)  E: 0.23 (0.16 to 0.32)  F: 0.26 (0.17 to 0.35)b | *Group 2*  *Nurse*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)  D: NA  E: 0.90 (0.88 to 0.92)  F: NA  *Lay Screener*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)b  D: 0.91 (0.89 to 0.93)  E: 0.90 (0.88 to 0.92)  F: 0.90 (0.88 to 0.92)b  *Group 3*  *Nurse*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)  D: NA  E: 0.90 (0.88 to 0.92)  F: NA  *Lay Screener*  A: 0.90 (0.88 to 0.92)  B: 0.90 (0.88 to 0.92)  C: 0.90 (0.88 to 0.92)b  D: 0.91 (0.89 to 0.93)  E: 0.90 (0.88 to 0.92)  F: 0.90 (0.88 to 0.92)b |
| Weinand et al, 1998109 | 9% (10/112) | Not described | 91% (102/112) | A (Pediatrician interpreter): 0.94 (0.86 to 0.98)  B (Orthoptist interpreter): 0.80 (0.69 to 0.88)  C (Ophthalmologist 1 interpreter): 0.72 (0.61 to 0.82)  D (Ophthalmologist 2 interpreter): 0.86 (0.76 to 0.92) | A (Pediatrician interpreter): 0.42 (0.20 to 0.66)  B (Orthoptist interpreter): 0.74 (0.49 to 0.91)  C (Ophthalmologist 1 interpreter): 0.74 (0.49 to 0.91)  D (Ophthalmologist 2 interpreter): 0.58 (0.34 to 0.80) |
| Williams et al, 2000110 | 15% (33/222) | Excluded from analysis | 85% (189/222) | A: 0.50 (0.33 to 0.67)e  B: 0.74 (0.52 to 0.90)e  C: 0.47 (0.28 to 0.66)e | A: 0.95 (0.90 to 0.98)e  B: 0.95 (0.91 to 0.98)e  C: 0.96 (0.92 to 0.99)e |
| Ying et al, 2011111  VIP (Phases 1 and 2) | A: 0.79% (9/1,142)  B: 0.35% (19/5,476)  C: 1.27% (55/4,341) | Considered them to be a positive screen | NR | Sensitivity dependent on specificity for any targeted condition and given for group 1 and any targeted conditionf  Specificity 0.50  Group 1 Conditions  A: 0.98  B: 0.96  C: 0.98  Any Targeted Condition  A: 0.88  B: 0.90  C: 0.91  Specificity 0.60  Group 1 Conditions  A: 0.96  B: 0.96  C: 0.95  Any Targeted Condition  A: 0.84  B: 0.88  C: 0.88 | Fixed at 0.50, 0.60, 0.70, 0.80, 0.85, 0.90, or 0.95 |
| Ying et al, 2011111  VIP (Phases 1 and 2) |  |  |  | Specificity 0.70  Group 1 Conditions  A: 0.96  B: 0.95  C: 0.95  Any Targeted Condition  A: 0.81  B: 0.83  C: 0.83  Specificity 0.80  *Group 1 Conditions*  A: 0.96  B: 0.92  C: 0.90  *Any Targeted Condition*  A: 0.76  B: 0.77  C: 0.77  Specificity 0.85  *Group 1 Conditions*  A: 0.92  B: 0.91  C: 0.87  *Any Targeted Condition*  A: 0.71  B: 0.73  C: 0.72  Specificity 0.90  *Group 1 Conditions*  A: 0.90  B: 0.87  C: 0.82  *Any Targeted Condition*  A: 0.64  B: 0.68  C: 0.65  Specificity 0.95  *Group 1 Conditions*  A: 0.85  B: 0.83  C: 0.77  *Any Targeted Condition*  A: 0.56  B: 0.58  C: 0.55 |  |

a Data in main paper focused on area under the curve (AUC). For detection of each type of SRE, AUC of each test was high; AUC was better for detecting the most severe levels of SRE than for all Res considered important to detect (AUC 0.97 to 1.00 vs. 0.92 to 0.93). The AUC of each screening test was high for myopia (AUC 0.97 to 0.99). Noncycloplegic retinoscopy and Retinomax performed better than SureSight for hyperopia (AUC 0.92 to 0.99 and 0.90 to 0.98 vs. 0.85 to 0.94, P ≤ 0.02), Retinomax performed better than NCR for astigmatism greater than 1.50 D (AUC 0.95 vs.0.90, P=0.01), and SureSight performed better than Retinomax for anisometropia (AUC 0.85 to 1.00 vs. 0.76 to 0.96, P ≤ 0.07). Performance was similar for nurse and lay screeners in detecting any SRE (AUC 0.92 to 1.00 vs. 0.92 to 0.99).

b Interpretable by at least 6 of 11 reviewers.

c Calculation based on n=379, median sensitivity and specificity.

d Data in main paper focused on AUC. The AUC for detecting any VIP-targeted condition was 0.83 for NCR, 0.83 (phase I) to 0.88 (phase II) for Retinomax, and 0.86 (phase I) to 0.87 (phase II) for SureSight. The AUC was 0.93 to 0.95 for detecting group 1 (most severe) conditions and did not differ between instruments or screeners or by age of the child.

e Results based on cutoffs to obtain specificity at least 95%.

f Data in main paper focused on AUC. The AUC for detecting any VIP-targeted condition was 0.83 for NCR, 0.83 (phase I) to 0.88 (phase II) for Retinomax, and 0.86 (phase I) to 0.87 (phase II) for SureSight. The AUC was 0.93 to 0.95 for detecting group 1 (most severe) conditions and did not differ between instruments or screeners or by age of the child.

Abbreviations: AUC=area under the curve; CI=confidence interval; mo=month; NA=not applicable; NR=not reported; RPST=Randot Preschool Stereoacuity Test; SSST=Stereo Smile Stereoacuity Test; VIP=Vision In Preschoolers.