# Evidence-Based Vision Screening

Our vision screeners, as well as their sensitivity and specificity, have proven themselves in validity, accuracy and reliability. Have a look at the peer-reviewed, evidence-based studies from the list below.

## 2019

Diagnostic test accuracy of Spot and Plusoptix photoscreeners in detecting amblyogenic risk factors in children: a systemic review and meta- analysis

**Reference:**
Diagnostic test accuracy of Spot and Plusoptix photoscreeners in detecting amblyogenic risk factors in children: a systemic review and meta- analysis

**Results:**
“Comparing the two photoscreeners for overall performance, the Plusoptix is showing slightly higher scores than the Spot in sensitivity, specificity, diagnostic odds ratio and AUC. However, there are no statistical differences between them in any aspect.” [Quote from the full text]

## 2018

Kindergarten Vision Testing Programme

**Reference:**
2015-2018 Report - Kindergarten Vision Testing Programme

**Results:**
“The two autorefractors agreed 89% of the time. When they disagreed, the PlusoptiX combined with the three other tests caught all but one child with eye problems, but the Spot with the three other tests missed six.”

“After using both for two years we stopped using the Spot.“

## 2018

Traditional and Instrument-Based Vision Screening in Third-Grade Students

**Reference:**
Open AAPOS Poster (Evan Silverstein, MD; Elaine R. McElhinny, MD)

**Results:**
"Instrument-based vision screening is more time efficient than traditional screening and has a similar PPV in third-grade students."

Time to screen (average):
Plusoptix 30 seconds
Traditional 120 seconds

## 2018

Results with photoscreener shown comparable to comprehensive exam - One ophthalmologist advocates standardized vision screening programs.

**Reference:**
Primary Care Optometry News, October 2018

**Results:**
"Results with photoscreener shown comparable to comprehensive exam. One ophthalmologist advocates standardized vision screening programs [...]"

Sensitivity of 93.02%
Specificity of 84.96%
False positive rate of 9.13%
False negative rate of 2.74%
Positive predictive value of 80.00%
Negative predictive value of 94.96%

## 2014

Calibration and Validation of the 2WIN Photoscreener compared to the plusoptiX S12 and the SPOT

**Reference:**
JPOS; e-publication

**Results:**

"The Plusoptix outperformed the SPOT and 2WIN as an autorefractor, particularly with respect to astigmatism power and axis."

2WIN A:
Sensitivity 71% Specificity 67%

2WIN B:
Sensitivity 73% Specificity 76%

SPOT:
Sensitivity 78% Specificity 59%

plusoptiX S09:
Sensitivity 85% Specificity 73%

plusoptiX S12:
Sensitivity 91% Specificity 71%

## 2013

A comparison of referral criteria used by the Plusoptix photoscreener

**Reference:**
A comparison of referral criteria used by the Plusoptix photoscreener

**Results:**
Plusoptix Criteria 1:
Sensitivity 98% Specificity 80%

Plusoptix Criteria 2:
Sensitivity 81% Specificity 96%

Plusoptix Criteria 3:
Sensitivity 81% Specificity 92%

Plusoptix Criteria 4:
Sensitivity 80% Specificity 94%

Plusoptix Criteria 5:
Sensitivity 98% Specificity 41%

Plusoptix Criteria 6:
Sensitivity 74% Specificity 86%

Plusoptix Criteria 7:
Sensitivity 67% Specificity 96%

## 2013

Pediatric photoscreeners in high risk patients 2012: A comparison study of Plusoptix, iScreen and Spot

**Reference:**
Binocul Vis Strabolog Q Simms Romano 2013;28(1):20-8

**Results:**

| | | | |
|---|---|---|---|
| Highest sensitivity: | Plusoptix 84% | Lowest sensitivity: | iScreen 72% |
| Highest specificity: | Plusoptix 94% | Lowest specificity: | Spot 68% |

## 2013

Performance of the detection of amblyopia risk factors in children 0 to 5 in central Iowa

**Reference:**
AAPOS 2013 Poster

**Results:**

Plusoptix:
Sensitivity 87% Specificity 88,0%