

SIGHT INTELLIGENCE TEST GUIDE

A comprehensive guide for parents to understand and interpret visual processing assessments that impact reading, comprehension, and sports performance.

 **2 Contributors**

Understanding Reading Skills Assessment

Words Per Minute (WPM)

Measures reading speed. Faster WPM improves fluency and comprehension. Higher WPM indicates strong fluency; lower WPM may indicate struggles with decoding or processing speed.

Fixations

Number of times eyes stop while reading. Too many fixations can slow reading and comprehension. High fixations suggest difficulty processing text smoothly.

Regressions

Number of times eyes move backward while reading. Frequent regressions indicate struggles with decoding or retention. High regressions suggest difficulty with visual memory and word recognition.

Average Fixation Accuracy

The ability to keep the eyes steady on a word or object. Poor accuracy can cause skipped words, difficulty with tracking, and reduced reading fluency. Lower scores indicate better fixation accuracy, leading to improved word recognition and smoother reading.

Comprehension

The ability to understand and interpret text. Comprehension is impacted by visual memory. Weak comprehension can lead to difficulty grasping meaning, recalling details, and making inferences. Higher percentage score reflect stronger reading comprehension, while lower scores indicate challenges in processing and retaining information. Over 80% accuracy is considered proficient.

Reading Test Scoring Ranges by Grade Level

Average Expected Scores Based on Grade Level. Scores are categorized as:

- Above Average: score is 10% above listed average score
- Average: score is at or near listed average score
- Below Average: score is 10% below listed average score

Grade	WPM	Regressions (out of 100)	Fixations	Average Fixation Duration (seconds)	Comprehensio n
1	80	52	224	.33	Above 80%
2	115	40	174	.3	Above 80%
3	138	35	155	.28	Above 80%
4	158	31	139	.27	Above 80%
5	173	28	129	.27	Above 80%
6	185	25	120	.27	Above 80%
7	195	23	114	.27	Above 80%
8	204	21	109	.27	Above 80%
9	214	20	105	.26	Above 80%
10	224	19	101	.26	Above 80%
11	237	18	96	.26	Above 80%
12	250	17	94	.25	Above 80%
18 (Adult)	250	2	44	.22	Above 80%

Primary Eye Movement Test Results

Static Fixation Gaze Accuracy

Stability of gaze affects reading fluency and sustained attention. In sports, it affects ability to maintain focus on stationary targets.

Interpretation:

- .9 -1.0: Enhancement
- .80 - .89: Minor concerns
- .70 - .79: Moderate difficulty
- .60 and below: Significant challenge
- L/R Discrep .05+: Potential binocular vision dysfunction

Horizontal Saccades

Reaction Time: Fast, accurate saccades support reading fluency and word recognition. Affects ability to shift gaze quickly between moving objects.

Interpretation:

- Reaction Time 0 - .40 (8 yo): No concerns
- Over .40 (8 yo): May indicate slower visual processing

Gaze Accuracy: Accuracy impacts ability to scan and locate words efficiently. Affects ability to track multiple fast-moving objects.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate deficit
- 0.60 and below: Significant difficulty

On Target: Impacts reading efficiency and skipping/missing words. Affects rapid gaze shifts needed for tracking play in sports.

Interpretation:

- Proficient: 10+/20 trials
- Concerns: 9/20 or less

Visual Reaction Time

Impacts speed of processing and ability to react to visual information. Critical for responding to fast-paced sports situations.

Interpretation:

- Reaction Time 0 - .40 (8 yo): No concerns
- Over .40 (8 yo): May indicate slower visual processing

Circular Pursuits Gaze Accuracy

Smooth eye movement is essential for tracking words across lines. In sports, it affects ability to follow moving objects like a ball.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty
- L/R Discrep .05+: Potential tracking deficit

Vertical Saccades

Gaze Accuracy: Affects ability to move between lines of text smoothly. Influences ability to adjust gaze quickly during dynamic sports play.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty

On Target:

Interpretation:

- Proficient: 10+/20 trials
- Concerns: 9/20 or less

Visual Reaction - # Targets Hit

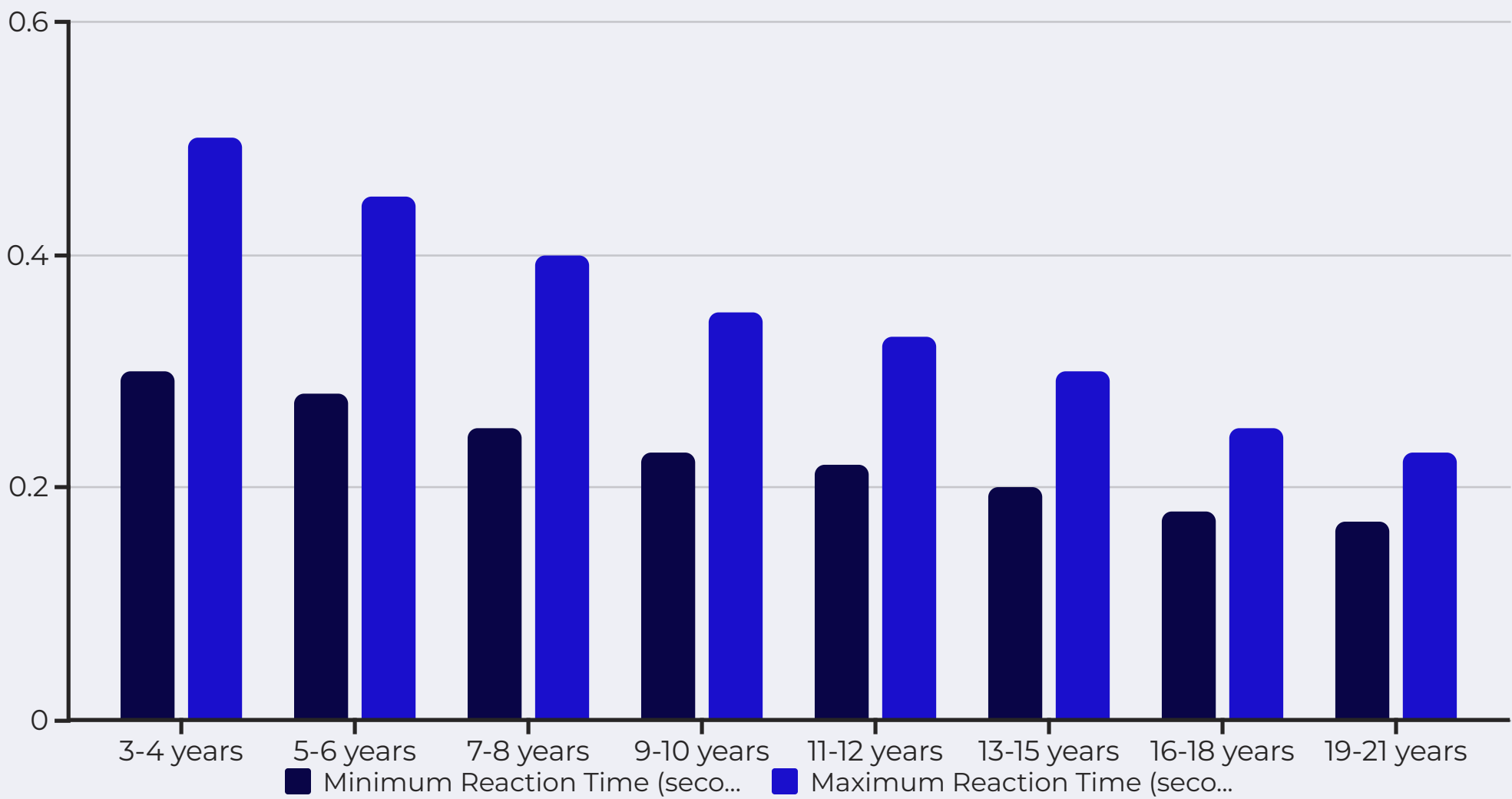
Affects visual-motor coordination needed for tracking words and objects. Key for hitting, catching, or reacting in sports.

Interpretation:

- Proficient: 4+/8 targets
- Concerns: 3/8 or less

Saccadic Reaction Time by Age

Saccadic reaction time (latency) varies by age as visual processing systems develop.



Age (years)	Saccadic Reaction Time (Latency) in Seconds	Developmental Notes
3-4	0.30 - 0.50 sec	Longer reaction time, immature control, frequent corrective saccades.
5-6	0.28 - 0.45 sec	More efficient saccades but still slower than older children.
7-8	0.25 - 0.40 sec	Improved inhibition of reflexive saccades, faster initiation.
9-10	0.23 - 0.35 sec	Developing adult-like speed, better voluntary control.
11-12	0.22 - 0.33 sec	Further refinement, more precise targeting.
13-15	0.20 - 0.30 sec	Approaching adult-like latencies, better suppression of reflexive saccades.
16-18	0.18 - 0.25 sec	Adult-like reaction time, optimal control.
19-21	0.17 - 0.23 sec	Fully matured saccadic latency, peak efficiency.

Secondary Eye Movement Tests – Part 1



Horizontal Pursuits (Gaze Accuracy Score)

Ability to smoothly follow a moving target left to right. Essential for tracking words across a line while reading. Affects ability to track moving objects, such as a ball in motion.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty
- L/R Discrep .05+: Potential tracking deficit



Vertical Pursuits (Gaze Accuracy Score)

Ability to smoothly follow a moving target up and down. Affects ability to move between lines of text efficiently. Important for adjusting visual attention quickly during play.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty
- L/R Discrep .05+: Potential tracking deficit



Diagonal Pursuits (Gaze Accuracy Score)

Coordination of eye movement along diagonal paths. Impacts reading flow and scanning across a page. Crucial for following angled movement in sports (e.g., dodging players, intercepting passes).

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty
- L/R Discrep .05+: Potential tracking deficit

Secondary Eye Movement Tests – Part 2

Box Pursuits (Gaze Accuracy Score)

Tracking a target in a box pattern. Helps with scanning worksheets, graphs, and multi-line text. Important for tracking multiple objects moving in different directions.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty
- L/R Discrep .05+: Potential tracking deficit

Vertical Saccades (Gaze Accuracy Score)

Accuracy of quick eye jumps between two vertical targets. Affects moving between lines of text while reading. Important for scanning vertically in fast-paced sports.

Interpretation:

- 0.9 - 1.0: Accurate
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate difficulty
- 0.60 and below: Significant challenge
- L/R Discrep .05+: Potential tracking deficit

Figure 8 Pursuits (Gaze Accuracy Score)

Ability to track a moving target in a figure-eight motion. Enhances smooth transition between different areas of text. Develops fluid motion tracking necessary for agility-based sports.

Interpretation:

- 0.9 - 1.0: Strong performance
- 0.80 - 0.89: Minor difficulty
- 0.70 - 0.79: Moderate tracking deficit
- 0.60 and below: Significant difficulty
- L/R Discrep .05+: Potential tracking deficit

Vertical Saccades (Reaction Time)

Speed of shifting gaze up and down between targets. Impacts reading fluency and efficiency. Affects rapid eye movements needed for dynamic play.

Interpretation:

- 0 - 0.40 sec (8 yo): Normal speed
- Over 0.40 sec (8 yo): Slower response time
- L/R Discrep .05+: Potential tracking deficit

Advanced Visual Processing Assessments

Dynamic Fixation (Gaze Stability Accuracy Score)

Ability to maintain steady fixation on a target while moving. Essential for sustained attention during reading and writing. Helps maintain stable focus when in motion, crucial for balance and coordination.

Interpretation:

- 0.9 - 1.0: Stable
- 0.80 - 0.89: Minor instability
- 0.70 - 0.79: Moderate instability
- 0.60 and below: Significant instability

Visual Motor Reaction Time (Eye-Hand Coordination)

Speed of responding to a visual stimulus with hand movement. Affects handwriting speed and accuracy. Critical for quick reactions in sports (e.g., catching, hitting).

Interpretation: To be determined based on standardized test norms

Visual Cognition Reaction Time (Eye-Hand Coordination & Visual Memory)

Reaction time combined with remembering and responding to visual cues. Impacts ability to recall and process visual information efficiently. Crucial for strategic thinking and quick decision-making in sports.

Interpretation: To be determined based on standardized test norms

These advanced assessments provide deeper insights into how visual processing affects both academic performance and athletic abilities. The results help identify specific areas for targeted intervention to improve overall visual efficiency.