



Penlight Red/Green (PLRG) Procedure For Screening of Convergence Insufficiency

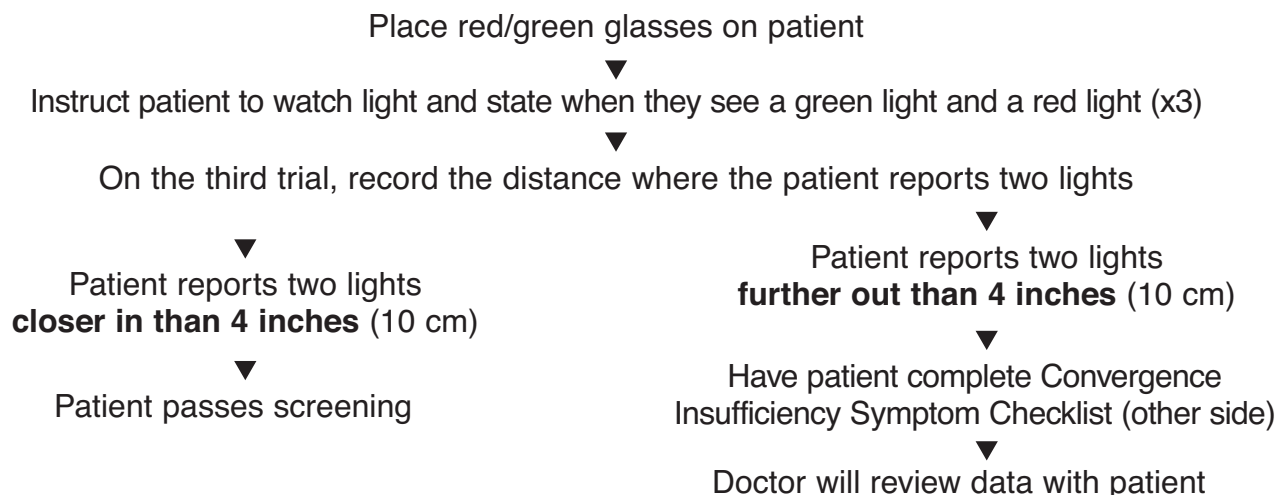
Convergence Insufficiency is a condition in which a patient finds it difficult to maintain alignment of the eyes on a near object. Inability to sustain convergence may cause a person to look with just one eye at a time, or to see double.

The PLRG procedure is a near point of convergence test with good sensitivity that is relatively easy to perform in a short period of time. With the room illumination dimmed, the patient is asked to put on the red/green glasses. If the patient typically wears glasses for near, the red/green glasses are placed over the patient's eyewear.

The penlight is presented directly in front of the patient at a distance of 24 inches. The penlight is held along the midline and slightly below eye level. Ask the patient "How Many Lights Do You See?" If the patient has normal convergence to that distance, the expected response is "one." Tell the patient that you are going to slowly move the penlight toward their nose and ask them to report if they ever see two lights instead of one. At some point, while you are slowly moving the penlight inward, the patient should report seeing two colored lights, one red and one green. This is the convergence break point. The penlight is then moved slowly away from the nose until the patient reports seeing one light again.

Repeat this procedure three times and record the convergence break point for the third measurement only. The reason why you repeat the procedure three times is because the Near Point of Convergence tends to recede (move outward) over time due to fatigue, particularly when the patient has convergence insufficiency.

5-Step Screening for Convergence Insufficiency



Convergence Insufficiency Symptom Survey (CISS)

Name: _____

Date: ___ / ___ / ___

Clinician/Assistant instructions: Pose the following questions exactly as written. If the patient responds with “yes” - please qualify with frequency choices. Do not give examples.

Patient instructions: Please answer the following questions about how your eyes feel when reading or doing close work.

Possible Subjective Symptoms	Frequency				
	Never (0)	Infrequently/ not very often (1)	Sometimes (2)	Fairly often (3)	Always (4)
1. Do your eyes feel tired when reading or doing close work?					
2. Do your eyes feel uncomfortable when reading or doing close work?					
3. Do you have headaches when reading or doing close work?					
4. Do you feel sleepy when reading or doing close work?					
5. Do you lose concentration when reading or doing close work?					
6. Do you have trouble remembering what you have read?					
7. Do you have double vision when reading or doing close work?					
8. Do you see the words move, jump, swim or appear to float on the page when reading or doing close work?					
9. Do you feel like you read slowly?					
10. Do your eyes ever hurt when reading or doing close work?					
11. Do your eyes ever feel sore when reading or doing close work?					
12. Do you feel a “pulling” feeling around your eyes when reading or doing close work?					
13. Do you notice the words blurring or coming in and out of focus when reading or doing close work?					
14. Do you lose your place while reading or doing close work?					
15. Do you have to re-read the same line of words when reading?					
Total score _____	_____ x 0	_____ x 1	_____ x 2	_____ x 3	_____ x 4

For Children (< age 21) total score = 16 or higher is suggestive of convergence insufficiency.

For Adults total score = 21 or higher is suggestive of convergence insufficiency.

Reference: Borsting EJ, Rouse MW, Mitchell GL, et al and the CITT group. Validity and reliability of the revised convergence insufficiency symptom survey in children. Optometry and Vision Science 2003; 80(12):832-838.