

Brock String Exercise

One of the most important pieces of equipment for vision exercises when working on convergence is the Brock String. It offers instant feedback to the participant if their eyes are working together to focus on an object at various distances. Children with reading problems or who are slow readers often have problems with convergence. Children with Strabismus (one eye turned inward or out while the other eye is on the visual target) definitely could use practice with the Brock String. Individuals with Amblyopia (one eye seeing things blurry and the other eye sees things in focus) can also benefit from exercises with the Brock String.

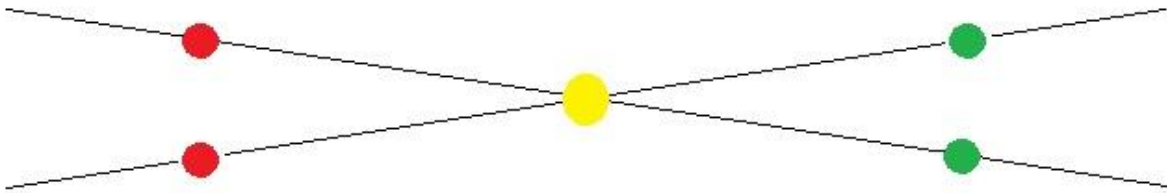
A Brock string can be purchased or made. It is simply a string with three beads. The beads can be of any color but for the purpose of this instruction, we will use a green, yellow and red beads. The string of the Brock String should be thick enough to fit somewhat snug in the holes of the beads. It should not be too tight of a fit so that the beads can easily be moved to different positions on the string. The string should resemble the figure below. The string on most Brock Strings is white instead of gray.



When using a Brock string, one end can be tied to an object (e.g., door handle, back of a chair) that is at eye level to the participant as the participant sits down or stands up. The other end of the Brock string is held by the participant to touch the participant's nose (at about or just below eye level). As the participant holds the Brock string they are to look down the string at a particular bead.

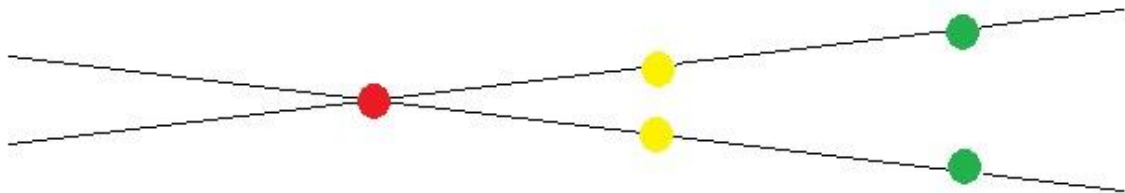
Step by Step Instructions: Brock String Exercise.

1. Obtain a Brock String and tie or hold one end at eye level. The participant is to hold the other end to their nose so they can look down the string at a target bead.
2. At first the beads, should be placed such that the green bead is 14 inches from the participants nose, the yellow bead is about 30 inches from the participants nose and the red bead is about 5 feet from the participant's nose. The distances of the beads do not have to be exact. The green bead should be placed at a comfortable (to the participant) near point distance. A comfortable near point distance is a little further (about one inch) than the normal reading distance (the length that a book is from the eyes during reading).
3. The participant is instructed to look at the yellow bead. The instructions may be something like: "Look down the string at the yellow bead. When your eyes are in focus together they should see one yellow bead, two red beads and two green beads. Please let me know when you see this." The assistant makes sure that both eyes are looking at the yellow bead and appear to both be aiming at the bead. If the eyes are working together, the participant will see an optical illusion of one yellow bead, two green beads and two red beads. See figure below:



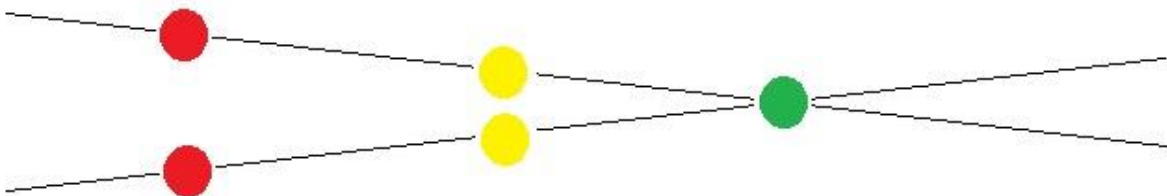
4. Some participants may have difficulty seeing something like this figure. The assistant may notice that one eye is looking at the yellow bead and the other eye is not. If this happens, put a 3x5 index card over the dominate eye and instruct the participant to look at the yellow bead and concentrate at looking at the yellow bead. While the participant is looking at the yellow bead, slowly move the index card away from the dominate eye. If done correctly both eyes will be on the yellow bead and the participant will report that they see two red beads, two green beads and only one yellow bead. This step is to be repeated until the participant actually sees something that looks like the above figure. When this happens the eyes are perfectly converged at the yellow bead.

5. With the end of the string at the participant's nose, have the participant shift the focus to the red bead so that the participant sees one red bead and two of the others. The assistant continues to observe the eyes and how they make the adjustment. The participant should see something like the figure below:



6. If the participant has difficulty seeing one red bead, repeat the technique described in step 4 using an index card. Repeat this technique until the participant reports seeing one red bead, two yellow beads and two green beads. Monitor the participant's eyes to insure that they are reporting correct information.

7. Have the participant shift the focus to the green bead so that the participant sees one green bead and two of the others. The assistant continues to observe the eyes and how they make the adjustment. The participant should see something like the figure below:



8. If the participant has difficulty seeing one green bead (this is usually the hardest one to see), repeat the technique described in step 4 using an index card. Repeat this technique until the participant reports seeing one green bead, two yellow beads and two red beads. Continue to monitor the position of the eyes.

9. Have participant go from the green bead, to the yellow bead, to the red bead, to the yellow bead, and to the green bead, just practicing adjusting their focus to the different lengths. Watch the participant's eyes so they appear to be converging at the correct spot. When they have difficulty, use the index card to help obtain correct convergence.

10. This is a good stopping place for beginning trials.

11. As the participant improves in mastery, move the green bead closer to the participant's nose inch by inch. Between each move have them focus up and down the string at the other beads. Make sure they obtain good convergence at each glance.

12. Over time and over multiple sessions, continue moving the green bead until convergence is comfortably reached at 6 to 8 inches from the nose. This will be mastery. Mastery is when the participant consistently is able to converge at each bead, even when the green bead is well within the individual's comfortable reading distance.

Exercise: Brock String Exercise.

Time: about 2 to 5 minutes, sometimes longer during the beginning sessions.

Recommended Frequency: once or twice daily or more for 5 or 6 days a week.

Materials Needed: a Brock String