

THE STRING AND ITS APPLICATION IN SYNTONIC OPTOMETRY

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The "Brock String and Beads" has long been a fundamental device used by optometrists for diagnosis and treatment of suppression, convergence and binocular efficiency. It has been gaining popularity recently among sports vision optometrists who, with practice in the application of the test, can predict abilities or shortcomings of a player. Many a coach has been impressed by the optometrist's observation that a baseball player will swing his bat too soon (or too late), or that a football player will have difficulty catching a high punt although he is efficient in other aspects of the game. "The String" is no less important to Syntonic optometrists.

A simple string may be devised by attaching one end of a string to one end of a pencil. (Tie it on the end or split the eraser, insert the string, and secure it.) The string should be about six feet (two meters) long.

Whether the procedure is used as a training device or a diagnostic instrument for a child, the parent should be placed in a position to view the procedure, i.e. directly behind the practitioner.

The optometrist should be at eye level with the patient and on the patient's midline. The pencil is held by the patient parallel to and resting on the surface of the nose, with the string approximately at the bridge of the nose. The free end of the string is held taut by the optometrist along the midline, at about 20 inches from the patient's eyes. The optometrist asks, "Do you see two strings making a 'V' at my thumb?" (The string is held by the index finger and thumb, with the thumb prominent.) When the patient perceives the "V", use the following procedures:

- The string is pulled through the finger and thumb and kept taut as the finger and thumb approach the patient's face, the distance lessening. Say, "Tell me when the strings cross in an 'X', or when one string disappears." When the patient reports, the string length is noted. The finger and thumb are now moved back slowly, lengthening the string, and the patient is told, "tell me when you see the 'V' at my thumb again". The length of the string is noted when the patient reports. When the "V" is recovered, the practitioner slowly rotates the string, noting whether the "V" is maintained throughout a 360° rotation. If not, the position(s) at which it is lost is noted (e.g. by degrees or quadrant). Head movements during the rotation demonstrate peripheral limitations (which deter smooth tracking) and indicate a "tunnel" field.
- Beginning at the midline and holding the string at the patient's reading distance, if the "V" is seen, the string is moved in a vertical direction above and below the midline. "Does the string 'X' or does one string disappear?" Responses are noted with description and linear measurement from the midline to the point of response. The procedure is repeated, moving the string horizontally.
- All notations and measurements are recorded to provide baseline data against which progress will be compared later.

Significance

The closer to the midline any breaks or disappearances of the string "V" occur, the smaller the field. When such disruptions occur the optometrist, with practice, will perceive the eyes lose their fusional position. This observation is important, since the patient's reports may be delayed or ability to "see" a change may be poor.

The parent who has been observing these procedures should be encouraged to watch for the "telltale" eye movements which occur when fusion is lost. Usually the same eye loses fixation consistently, and the parent should be alerted to watch that eye closely.

String rotations for home therapy may be done monocularly for five minutes and binocularly for five minutes (total of 15 minutes). The Brock string and beads also may be used for jump fixations from six feet (or farther) to intermediate or near points. Push-ups should be added, with the parent alert to eye posture.