

# Article ▶ Improving Orientation with Yoked Prism

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## ABSTRACT

Orientation is an essential visual skill for maintaining attention and concentration, common areas of difficulty in patients with binocular vision problems. Streff Walk is an indispensable therapy procedure that can improve a patient's orientation by requiring maintenance of fixation with physical change, as well as maintenance of physical balance with visual changes. Questions about visual space perception are asked before and after the activity in order to allow the patient to communicate appreciated changes appreciate changes in orientation.

**Keywords:** orientation, perception, yoked prism, Streff Walk, vision therapy

## Introduction

Orientation is one of the six visual skill areas presented in the late Dr. John Streff's publication entitled *Optometric Vision Therapy: Remediation to Meet Individual Needs*.<sup>1</sup> Streff described orientation as "Eye-body control which is essential to our knowing where we are in relation to other people and to our surroundings." The symptoms that result from poor orientation can include difficulty sitting still, difficulty with concentration, difficulty completing tasks, and distractibility. Physical signs include excessive talking and fidgeting.<sup>1</sup>

Streff recommended two strategies for improving a patient's orientation: 1) have the patient perform activities that provide physical change while maintaining visual fixation, and 2) provide visual changes through the use of lenses, prisms, or instruments while the patient maintains physical balance.

The Streff Walk activity incorporates yoked prism, along with directed movement and looking, to provide conditions under which a patient is given opportunity to improve orientation.

## Procedure

The pieces of equipment needed for this activity are a full length mirror and a pair of 15<sup>Δ</sup> yoked prism glasses. The patient does the activity without their shoes on. According to Streff, prism is best tolerated when worn in the following order: Base Down, Base Up, Base Right, and Base Left. The goal of the activity is to improve the patient's orientation, so it is essential to probe the patient with questions regarding their orientation both before and after the activity is performed.

The questions outlined in the activity instructions created by Dr. Jeff Getzell<sup>2</sup> are:

- Does space appear flat or three-dimensional?
- Is the patient seeing in small or big chunks?

The patient is then asked to walk forward and backward in the room while being aware of balance, posture, weight distribution, and groundedness. By asking these questions, you establish an understanding of the patient's orientation prior to beginning the activity and effecting any change.



**Figure 1:** The back is parallel to the floor with the eyes fixating on the right foot.

During the activity, the patient's breathing is to be directed in the following way: breathe in through the nose and out through the mouth from the diaphragm. The breathing should be deep and relaxed.

The activity begins by having the patient stand facing the full-length mirror wearing the prism Base Down. The patient begins by looking at their eyes in the mirror. Before any movement, have the patient take in a long and relaxed breath. Next, they slowly bend forward at their waist while keeping their focus on their eyes in the mirror. When the patient's back is parallel to the floor (Figure 1), they move their eyes along the floor towards their right foot. Note that this activity is performed without shoes on but the figure shows the opposite. Next, they are to keep their eyes on the big toe of the right foot while slowly lifting their left foot up (Figure 2). They should raise the left knee as high as possible before moving their left foot forward to be placed directly in front of the right foot, heel first (Figure 3). The patient then moves their eyes slowly from their right big toe along the floor to the image of the right big toe in the mirror. At this point, the patient again fixates on their eyes in the mirror as they begin slowly to transition from their back being parallel to the floor to standing erect (Figure 4). This entire process is repeated two more times for a total of three steps forward. It is then performed for three steps going backward. When



**Figure 2:** The eyes remain fixated on the right foot while the left knee is raised.



**Figure 3:** The left foot is placed in front of the right foot

going backward, the patient looks at the big toe of the rear foot, steps back with the forward foot, and lands toe first. The procedure is then repeated with Base Up, Base Right, and Base Left yoked prism.

It is important to note that the patient should try to be aware of visual space all around them throughout the activity. Streff states, "Peripheral vision is the primary process to control both movement and balance."<sup>1</sup> Immediately after the activity, the patient should remove the prism glasses and answer the aforementioned questions regarding orientation.

## Discussion

The Streff Walk incorporates both strategies mentioned by Streff as being effective for the improvement of a patient's orientation: a physical activity (bending and stepping) while maintaining visual fixation (fixating on eyes, floor, and feet) and visual changes (using yoked prisms) while maintaining physical balance (bending and stepping).

Improving orientation is an essential part of vision therapy for several patient populations: children with learning-related vision problems, patients receiving neuro-optometric rehabilitation for acquired brain injury, and athletes working to improve their visual skills through sports vision training. Orientation should be addressed early in a program of vision therapy, but can be addressed throughout. Progress is gauged



**Figure 4:** Transitioning to erect position and fixating straight ahead at a mirror.

by ease of completing the task as well as quality of observations following the procedure.

Patients who have difficulty with 15<sup>Δ</sup> yoked prism glasses may perform better with lower amounts of prism. The activity can also be modified for patients who have difficulty making the directed movements. One way of doing this is to have the patient simply walk forward and back while fixating on the image of their eyes in the mirror. If the patient has success with this modification, they may eventually attempt the more complex movements of Streff Walk.

## References

1. Streff JW. *Optometric Vision Therapy: Remediation to Meet Individual Needs*. Lancaster, OH: John W. Streff, 1993.
2. Getzell J. *Prisms & Walking (Streff Walk)*. Procedure Handout.

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