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VT on DVD

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VT on DVD

Abstract

Purpose: VT on D VD provides optometric interns and vision therapy (VT) patients with video demonstrations of five VT techniques on Digital Video Disc (DVD). It provides the opportunity for interns to use correct instructional and observational tools when demonstrating VT activities. In addition, VT on D VD provides patients with a simple clarification of vision therapy exercises. Interns and patients will find VT on D VD to be a useful tool in addition to office-based VT activities.

Methods: The online version of the BABO manual found on the OEPP Clinical Curriculum website was used for written instructions of each exercise. Rob Lewis, O.D., FCOVD, was consulted extensively and is involved in the instruction of some video footage along with the authors as the patients. Each VT activity was storyboarded, videotaped, and edited onto a final DVD. Two video cameras, a microphone for narration, and video editing software were used to complete the DVD.

Results: These procedural videos have been compiled into a set of two DVD collections, one for intern use and one for patient use. These videos are for educational use and will be included in the fee package of a VT program.

Discussion: Coin Circles, Lens Feeling, and See 3 Coins are used for various ocular dysfunctions and at different stages during therapy. Future improvements should include follow-up with patients using the DVD, increasing the VT exercises, eliminating background distractions in the video, and improving video quality.

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Hannu Laukkanen

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vision therapy, video, binocular vision, oculomotor, accommodative dysfunction

Subject Categories

Optometry

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VT ON DVD

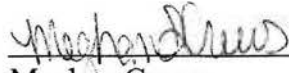
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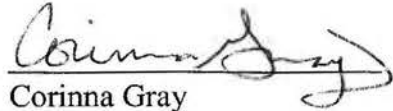
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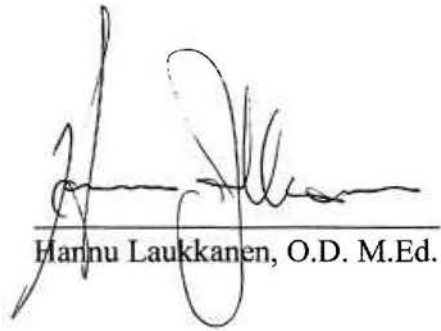
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Biographies

Corinna Gray received her Bachelor of Science in Kinesiology from San Francisco State University. She is currently in her final year at Pacific University College of Optometry where she is pursuing an OD.

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Abstract

Purpose: *VT on DVD* provides optometric interns and vision therapy (VT) patients with video demonstrations of five VT techniques on Digital Video Disc (DVD). It provides the opportunity for interns to use correct instructional and observational tools when demonstrating VT activities. In addition, *VT on DVD* provides patients with a simple clarification of vision therapy exercises. Interns and patients will find *VT on DVD* to be a useful tool in addition to office-based VT activities.

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Key words: vision therapy, video, binocular vision, oculomotor, accommodative dysfunction

Introduction

VT on DVD is a thesis project consisting of video demonstrations of vision therapy procedures in two different versions; one for optometric interns and one for vision therapy patients. Included in the final DVD are the following activities:

- ✦ Lens Feeling
- ✦ See 3 Coins
- ✦ Vertical Coin Circles
- ✦ Horizontal Coin Circles
- ✦ Figure 8 Coin Circles

Each exercise is clearly demonstrated and narrated for patients and interns. The videos have been captured, edited, and assembled into DVD format.

Purpose

It is often easy for a patient to understand and perform a particular VT exercise correctly while a therapist is guiding them through each step. However, it is often difficult for the patient to remember details the VT exercises when having to correctly complete them at home. This leads to several problems, including decreased patient compliance and increased levels of frustration for the patient and doctor, intern, or therapist involved. While the patient *does* receive a written handout describing each procedure in detail, many patients have a hard time reading, comprehending, and remembering written content. These difficulties may be the reason they are enrolling in vision therapy in the first place, and the written instructions may be counter-productive to the success of such patients.

Another problem that may be encountered in the vision therapy room is the fact that many optometric interns cannot remember exactly how to correctly perform each activity. This can lead to incorrect instruction and performance, both of which would be detrimental to the success of the patient's program. If the patient is given conflicting instructions from different interns, they may feel that the interns and/or institution are incompetent and that they are not receiving quality vision care.

VT on DVD provides a way to remedy each of these problems by producing video examples of different therapy techniques for all of which can be performed in-office and at home. Separate videos were produced so that the intern video is more utilitarian and the patient video is clear and concise. Written handouts are still valuable and should not be eliminated. These videos will

serve as another means of communicating to the patient exactly how each procedure should be performed.

The goal of this project is to increase in-office and home vision therapy compliance and success rates, as well as decrease the patient's and parent's frustration level. The intern video creates a consistency between each intern when working in the field of vision therapy.

Methods

We consulted with several expert vision therapy doctors to get a general idea on how to proceed with this project. After studying the BABO website, we chose five different activities to put onto DVD. As stated above, these included See 3 Coins, Lens Feeling, Vertical Coin Circles, Horizontal Coin Circles, and Figure 8 Coin Circles.

Each procedure was studied from the manual and an initial video taping with Dr. Lewis was performed. This gave us insight into exactly what we wanted to convey with the videos. We then made a storyboard for each activity and proceeded with videotaping, utilizing ourselves and Dr. Lewis as the primary subjects on the video. Subsequent footage was shot to enhance effects and understanding of the techniques.

The filming location was in the Vision Therapy wing of the Pacific University College of Optometry in Forest Grove, Oregon. Two different digital handycam video cameras were used in order to provide us with various angles. The original audio was used for the intern video clips because the dialogue provides interns with answers to some of their own questions, although the clarity is not always excellent. A narration was dubbed onto the patient videos using an external microphone in the Windows Movie Maker software. The two thesis authors served as directors, actors, editors, film crew, and narrator.

After filming was complete, the editing process began. The initial footage was recorded onto mini-DV's. The video clips were imported into Microsoft Windows Movie Maker for editing and narrations. The final product was a DVD built with Roxio Easy Media Creator 7 DVD

Builder software. Video transitions were used to create special effects which are important for the viewer to visualize the correct response. An external microphone was used to add narration into the patient video. This audio editing was fairly labor-intensive and required an accurate narration. The language is user-friendly and eliminates any optometric jargon. Questions on the video are asked about how the patient is feeling during each exercise, which is a critical component to consider while doing home therapy.

The intern video is a raw version of the patient presentation. It contains some live material from the initial filming with Dr. Lewis. We talk about what the patient feels and what the intern should be observing. It is valuable for the intern to hear the conversation between Dr. Lewis and the optometry students because it is a real situation, not just a simulation.

The refined videos were then burned onto DVD's. After some trial and error, the editing process resulted in a smooth video with quality audio and visual effects. The thesis project was then divided into two separate entities. One DVD will be distributed to patients and the other will be used by optometry interns. These educational devices will be available at both private practices and at Pacific University College of Optometry.

Results

See enclosed DVD

Discussion

There are several visual diagnoses that may be treated with these VT exercises. Coin circles are used in the treatment of oculomotor dysfunction, which is defined as the inability to perform effective ocular pursuit, saccades, and/or fixations. Coin circles are generally used early in therapy. Lens feeling, which is typically used in early to middle therapy, can be used to treat patients with accommodative dysfunction. This diagnosis includes reduced facility and flexibility, reduced amplitude of accommodation, or the inability to sustain accommodation. See 3 Coins is useful in Binocular Vision Dysfunction, which is described as the inability to efficiently, accurately, and comfortably utilize and sustain binocular vision. This activity is generally used in middle to late therapy because free fusion is often difficult to achieve for many patients.

The main problem with this thesis project is the lack of provision for follow-up. Ideally, there would be a study in place to measure the actual impact VT on DVD has made after a period of time. Unfortunately, due to time restraints, we were not able to make such provisions.

In the intern video, there is a distracting picture on the wall behind the actors. In the patient video there is some sort of stuffed animal in the background. These items should have been eliminated before taping began. The lighting also appears differently in the two different

cameras, so the harsh fluorescent lighting could have been softened a bit. Lastly, audio syncing was unsuccessful when transferring data from video to DVD for the “Lens Feeling” activity.

When we began this project, we hoped to demonstrate ten VT techniques. As the project continued, we realized that with only two people this was an unrealistic goal. We know that this DVD is in no way a complete guide to VT for either patients or interns. This is only a small beginning to a much larger project.

This DVD is an optometric tool that will be used to further both intern and patient education. As the realm of vision therapy becomes more technologically advanced, patients will gain greater benefits from projects such as this. We look to the future as we try to increase patient compliance and intern enthusiasm for a very important aspect of optometry.

Acknowledgements

We would like to thank our thesis advisors, Dr. Hannu Laukkanen and Dr. Rob Lewis for their time, expertise, and guidance throughout this project. We learned from their expertise, enjoyed participating in this project and look to the future of developmental optometry. We appreciate the money for this project granted by Dr. Lewis and Dr. Harold Bacon of Family Optometry.

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COIN CIRCLES - Home Activity Directions

_____times per day _____mins per session _____sessions per week

PURPOSE: To learn to direct action slowly and smoothly with fine control and to be able to reproduce different shapes in your near space world accurately. It is important to make sure you see the coin clearly at all times. This helps make sure you are looking right at it. At the same time it is important to be aware of the rest of the room and to be aware of where you plan to move the coin next so you will be able to make the best possible shapes.

A. HORIZONTAL CIRCLES

1. Stand with feet apart (about the same width as your shoulders) and with your weight distributed equally on both feet. Hold a coin between your thumb and forefinger, and starting at eye level and getting as close to your eyes as you can and still see it clearly, move it slowly in a horizontal circle, following it with the eyes and not moving the head. Move it at arm's length, as far away as you can and still keep it in sight. RELAX - breathe normally, don't squint, and blinking is allowed.
2. Your helper should see if your 2 eyes stay on the coin at all times, that the circle is round, and that it extends as far to the left as it does the right. The circle should be done slowly, taking 10 - 15 seconds to complete.
3. Do about 3 circles, then change the direction of the circle and do 3 more circles.
4. Repeat 3 circles in both directions using the other hand.

B. VERTICAL CIRCLES

1. Holding the coin in front of the eyes, move it up, out, down, and back, making as large a circle as you can while keeping the eyes on the coin.
2. The circle should extend the same distance above the eyes as below the eyes. It is important that you get the "feel" of a circle, so avoid the tendency to move down too far, forming an "egg" shape.
3. Do about 3 circles, then change direction and do 3 more.
4. Repeat 3 circles in both directions using the other hand.

C. FIGURE EIGHTS

1. Horizontal Figure Eights

- a. Holding the coin in front of the nose, move it out to the left as far as possible, to the front, back to the nose, then to the right, out, and back to your nose. The 2 circles should be of equal size and extend equally on both sides of the head. Do three of these in a row.

- b. Repeat 3 more of these, but reversing the directions and going to the right first.
- c. Repeat 3 of these in both directions using the other hand.

2. Vertical Figure Eights

- a. Hold the coin in front of the nose, then move up, out, and back in to the nose. Then down, out, and back in. Repeat 3 times, making sure the circles are round and that the upper and lower circles are equal in size.
- b. Repeat, reversing the directions by moving downward first.
- c. Repeat both directions using the other hand.

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SEE THREE COINS - Home Activity Directions

_____times per day _____mins per session _____sessions per week

I. First Stage

1. Place the card with the 2 coins on it on the table in front of you. Then hold a pencil so that the point lies flat on the paper directly between the 2 coins.
2. SLOWLY MOVE THE PENCIL UP TOWARD YOUR NOSE, making sure you look directly at the point of the pencil. Keep looking at the pencil, but stay aware of the coins. At some point, the coins will look double, making 4 coins.
3. As you continue to move your pencil closer to you, the 2 middle coins will overlap and become one. There will be three coins. Make sure to keep looking at the tip of your pencil. If you look directly at the card, the effect will disappear. If it does, start over with the pointer placed on the card again.
 1. Continue until you can see the image of the center coin while looking at the very tip of the pencil. Where does the center coin seem to be - is it on the card, closer, or farther away than the outer 2 coins? Move the pencil slightly toward and away from you several times to see when the center coin seems to be right at the pencil. Now examine the coin - look at the words on it, Lincoln's nose, hair, etc.

II. Second Stage

1. After mastering the above, slowly remove the pencil tip while looking at the center coin. The 3 coins will remain if you can do this. If the image disappears when you move the pencil, start over again.
2. After you can hold the image after taking the pencil away, try moving the card slightly to the left, right, up, and down directions and seeing if you can still maintain the center image. When successful, move the card in a circle of about 12-16 inches diameter.

III. Third Stage

Practice being able to get the effect without using a pencil at all, by just focusing your eyes at the point in space at which the effect is produced.

IV. Fourth Stage—look “farther”

1. Look at a distant object. While keeping your eyes focused on that object, slowly move the card up in front of that object. In effect, your eyes are looking THROUGH the card, still staying focused on the far object.
2. If you are successful in keeping the far focus, you should again see 3 coins. Examine the center coin while still maintaining the far focus. Where does it seem to be in relation to the other coins?