

FRIENDS OF NEUROVISUAL TRAINING NEWSLETTER.

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Introduction.

In this week's issue of the Friends of NeuroVisual Training Newsletter we discuss one of our favorite adjuncts to address foot awareness, Zoids. Training foot awareness and reaction time present numerous benefits for both performance enhancement and injury prevention. We will also provide you with a few ideas to begin incorporating this into your own NVT program!

Within this issue you will also find an expansion to our Stroop Saccades "How-To". In Issue 8, Volume 2 we provided instructions for using Stroop Saccades as a testing method. In this issue you will learn about how to further utilize the Stroops as a training method.

As always, thank you for your continued support of NeuroVisual Training and be sure to follow us on Twitter @FriendsofNVT!

Eye, Hand, and Foot NVT: The Use of Zoids

Throughout past issues of the Friends of NVT Newsletter a topic we have often discussed is the importance of hand-eye coordination and various ways to train the underlying neurological processes involved. However, often forgotten and therefore undertrained, is the 3rd aspect of this relationship; the foot. Foot-eye coordination, as well as the ability to recognize and process external stimuli, are critical components of performance enhancement and injury prevention for many sport related activities.

In Issue 1, Volume 2 we discussed the use of Marsden Balls for pitch and catch exercises to train hand-eye coordination in efforts to improve the ability to track, hit, and catch objects. While these balls are great for the hand-eye relationship, they fail to address the foot. One of our favorite tools to incorporate foot training into any NVT program is the use of Zoids.



Zoids (as seen on the left) are a versatile training product that was originally developed as an upgrade to the traditional speed ladder used for agility training. They come as a set of trapezoidal shaped objects in 3 different colors that can be oriented in various ways depending on the goals of the drill. In addition to the multi-colors, one unique feature about Zoids that make them great for our training is the texture and thickness of the trapezoids. While they are thin enough to not trip the athlete while going through the exercise, they

are also just thick enough that the athlete is aware of when he steps on the Zoid, rather than in the middle of it. This recognition is an important aspect of the goals behind Zoid training.

Let's first consider injury prevention. One of the more common lower extremity sport related injury is an ankle sprain. Often caused by the rolling of an ankle that can be the result of poor technique or improper foot placement. While proper technique is something to be trained by the athlete's respective coach, foot placement is something that NVT can be of great use to train and help limit these nagging ankle injuries. In the game of football, offensive and defensive linemen tend to be the position groups that are most prone to experience ankle sprains and other ankle related injuries. This is in large part due to the environment they compete in. Most of their time throughout games and practice is spent in what many football players and coaches refer to as the "trenches"; an area where players are engaged with their opponents, bodies often rolling on the ground, feet are everywhere, and little room to move. The result of these factors combined is athletes paying little attention to what is going on below them and misplacing their foot to either step on, or get rolled up on, by another player, thus resulting in an ankle injury. Many athletes do not possess the awareness to recognize what is going on anywhere other than their primary area of focus, nor do they possess the lower extremity reaction time to replace their foot when their brain receives input of tension in the ankle area. These two areas of weakness are exactly where an NVT trainer can aid in injury prevention with use of the Zoids through lower extremity awareness and reaction time training. As I have stated in past articles, without durability, the athlete's ability cannot be appreciated.

In terms of performance enhancement, eye-hand/foot coordination is a central component to the craft of athletes of a wide variety of sports. One of the great aspects of the Zoids is their ability to serve as an adjunct to numerous other NVT drills to allow us to address both hand and foot coordination at the same time. One of our favorite combinations is using Zoids while performing pitch and catch with Vector balls. In addition to catching the ball with the correct hand dependent upon the color flashed, the

athlete must also quickly move his feet to the Zoid corresponding to the color perceived. This drill serves as a great carry over to the field or court as many times an athlete's footwork is dependent upon various visual inputs he receives from his opponent. In order to successfully execute his/her responsibilities in an effective manner, the athlete must keep their eyes up and cannot be looking down at their feet to ensure proper placement. They must learn to trust their lower extremities while focusing their visual attention on other tasks. The incorporation of Zoids into NVT activities thus requires multitasking with footwork related activities and is a great way to enhance this lower extremity trust.

As with many other NVT exercises, the greatest limitation to the use of Zoids in your NVT program is your imagination. Zoids can be integrated as a progression to numerous NVT activities with great on-field benefits and can also help your athletes avoid burnout. Next time you are conducting hand-eye coordination training, be sure not to neglect foot coordination as well!

“How To” – Stroop Training

In issue 8, Volume 2 we presented the Stroop testing methods we often use. In this how to segment we will discuss some of the methods for training and rehab in which we engage the Stroop training methods.

If you recall from V218 we use three Stroop sheets, with an 8x8 grid of colored words (figure 1). The timing and sequence used provides information concerning cognitive abilities such as memory, saccadic eye movement, and impulse control. If deficiencies are seen in a patient post TBI or in an athlete who needs some improved performance parameters, we can use the Stroop sheets as part of the rehab.

One can use the Stroop sheets and repeat the three-sheet sequence to document improvement. You can also use two sheets of words that are colors only or the sheets with a mixture of color words and non-color words. These can be done in isolation as a stand-alone technique where you set the task and time how long it takes to perform the task, plus how many words the person can recall. The goal for the subject is to do the two tasks as fast as possible and for the two times to be as close as possible, with good recall. Typically, we start with 10 non color words (figure 2) to be recalled and we want the person to be getting greater than 8 consistently. Then we progress the task to more non color words and require more to be recalled. We typically use a theme of words in the non-color words sheets and will take away that theme to make the recall more difficult.

The Stroop sheets can be added as one of the near far or saccades sheets used when using hart charts for saccades or near far. You can add one Stroop sheet to the pair of hart charts or use two Stroops instead of hart charts. This adds a level of difficulty to a training session. A typical set of instructions might be to do scanning

saccades (12V2) with one regular hart chart plus one Stroop sheet with combined color words and non-color words. The person would do a 2-minute set of scanning saccades and be asked how many non-color words they recall, list them and give the theme. Picture if you will, having the standard hart chart be in multiple colors. The person DOES not call the color of the hart chart alpha numeric but does for the Stroop. Or you could have the person call color and alpha numeric. This might have a person look left to call, "red-A" and look right to call "blue" and back to the left to say, "green-3" and so on. Again, you would record the score based on how far the subject got in the time allotted and record how many words were recalled out of possible words.

The goal is to add the stroop based training to a secondary activity like saccades or near far to have the person engage multiple cognitive tasks with the activity. Please also note it is possible to change the 8x8 grid to match another task, like a 10x10 hart chart.

When we add words to the Stroop set past 10, we typically go up to as many as 20 words. More than that gets hard to recall even with a theme as a memory cue.

Other activities that you could use with the Stroop sheets would be the agility drill, zoids (this issue). Have a person do hart chart Stroop scanning saccades and move their feet based on the colors they call out. They should eventually know where the zoids are and where their feet are but need to keep control of their feet while doing the drill.

The Stroop drill is a great drill for impulse control, and it can be expanded to couple with other drills, saccades, memory and other dual tasking activities. This is relevant to patients post brain injury and athletes for numerous sports. It is an easy 1- or 2-minute drill you can add to lots of different NVT programs.

Figure 1.

RED	BLUE	GREEN	BLACK	GOLD	BLUE	GREEN
BLACK	RED	ORANGE	YELLOW	BLACK	GREEN	YELLOW
GOLD	ORANGE	YELLOW	PINK	BLUE	BLACK	RED
PINK	BLACK	ORANGE	RED	YELLOW	BLUE	GREEN
PURPLE	ORANGE	GREEN	PURPLE	ORANGE	PINK	RED
BLUE	PINK	PURPLE	GREEN	YELLOW	YELLOW	BLACK
RED	GREEN	BLUE	GOLD	YELLOW	ORANGE	BLACK
PINK	YELLOW	GREEN	RED	BLACK	ORANGE	BLUE

This is a Stroop sheet with all color words in various colors.

Figure 2.

GREEN	PINK	GOLD	PARIS	ORANGE	ROME	GOLD	RED
GOLD	BERN	GREEN	RED	SOFIA	ORANGE	PINK	YELLOW
BLACK	GREEN	PINK	ORANGE	PURPLE	RED	PURPLE	PRAGUE
VIENNA	YELLOW	ORANGE	PURPLE	YELLOW	DUBLIN	OSLO	PINK
BLUE	ORANGE	BERLIN	RED	GREEN	YELLOW	YELLOW	GOLD
YELLOW	LONDON	PURPLE	BLUE	RED	PURPLE	ORANGE	BLACK
PURPLE	BLUE	BLACK	YELLOW	PINK	ORANGE	GREEN	BLACK
ANKARA	PINK	GREEN	ORANGE	PINK	ATHENS	BLUE	TALLINN

This is a Stroop sheet with words that are a mixture of color words and non-color words. The theme for this sheet is European capital cities.

Announcements.

The next issue of the FoNVT Newsletter will be released following Christmas on December 28th. Following the 28th we will return to our normal schedule of releasing a new issue each Thursday!

This Saturday, the #9 Cincinnati Bearcats will compete in the AAC Conference Championship game at Nippert Stadium vs #23 Tulsa Golden Hurricanes. The game will air on ABC with an 8:00 PM kickoff.

The Carrick Institute, leaders in clinical neuroscience and rehabilitation, are offering discounts on specific training programs as part of their "12 Days of Neuro" holiday special. Be sure to check our Day 5: Neuro-Visual Therapy Program, Presented by Dr. Joseph Clark from June 11-13th in Cincinnati, OH. If interested in more information, please visit <https://carrickinstitute.com/12-days-of-neuro/>.

Inneuractive has recently added more NVT tools to their store! Be sure to check it out at <https://www.inneuractive.com/s/shop>.

If you are interested in purchasing Zoids, please visit their website using the link below.
<https://www.zoidfitness.com/>

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