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FRIENDS OF NVT

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INTRODUCTION

Welcome back to Issue 8 Volume 6 of the Friends of NVT Newsletter! In the main portion of today's newsletter, our author/team member Esha Reddy discusses the importance of the three pillars of NVT and reviews the Oregon State Beaver's vision training video.

In our "How To" this week, Dr. Joseph Clark provides methods for incorporating NVT into traditional "visual training" activities. An example includes the addition of word finding to saccades to involve the third pillar, brain processing, into the exercise.

We encourage you all to leave questions and/or comments below. Thank you for the continued interest and enjoy!

If you missed an issue, please visit https://inneuractive.com where all issues are available for free. Please tweet and share with your friends as we plan to release more great content. @FriendsofNVT.

WHAT'S IN OUR LATEST ISSUE:

@FriendsofNVT

Review of the Oregon State Beavers Vision Training Video:

https://www.youtube.com/watch?v=MCC8fjIFQuk

As discussed in I1V1, there are three pillars of NeuroVisual training – ocular motor performance, eye discipline, and the brain's abilities. To review, pillar one encompasses training the eyes to track or move in a controlled, appropriate way. This includes tracking an object, scanning a field, and following objects coming in and out of the visual field. The second pillar represents keeping the eyes where they need to be, when they need to be. Lastly, pillar three regards training the brain to take in and use information more efficiently.

Optometric-based sports vision training has been around for a long time. However, traditional sports vision training covers pillars one and two, whereas NeuroVisual Training covers all three pillars.

The third pillar should be considered as incredibly important in NeuroVisual Training. Athletic performance has a large cognitive component and is more than just vision, strength, and endurance. In training pillar one and two – without a focus on pillar three – the brain will receive greater amounts of visual information but may not have the capacity to process the larger amounts of information. As Hick's principle says, the more choices that one is presented with, the longer it will take them to decide. To mitigate the delay from Hick's principle, we must train pillar three.

Incorporating sports vision training into athletes' strength and conditioning regimen can be incredibly beneficial. For example, the Oregon State Beavers Football Team utilizes vision training to improve athletic performance and strengthen their eye muscles.

The Beaver's YouTube video outlines activities that their athletes train with – including the Dynavision D2 board, near/far, scanning saccades, and accommodative flippers. Sports vision trainer Krisi Conrad states that the goal of their training is to "help them [the football athletes] to improve dynamic visual skills including peripheral awareness, eye hand coordination, depth perception, accommodation, tracking, and convergence/divergence".

Training with accommodative flippers, as the name suggests, trains the accommodative system using a kind of corrective lens. This is especially important as the accommodation system is used for 3D activities, in many day-to-day tasks as well as in football. In using the accommodative flippers, the Beaver athletes are effectively strengthening their accommodative muscles (pillar one) and preparing themselves to respond more effectively on the playing field. Near/Far also works on the accommodative system with the addition of strengthening eye discipline (pillar one and two). Without the T-scope, the Dynavision D2 board trains eye discipline if the athletes are told to keep their eyes fixed on a point or ocular motor scanning to search and find the buttons to hit. .

The team does a wonderful job in addressing the first two pillars of NVT. In training these skills, the athletes are well positioned to have improvements on the field. However, to maximize their vision training, we recommend incorporating more activities that target the third pillar of brain training into their regimen.

For example, the Beaver's already use scanning saccades in their training. Scanning saccades are a great tool to work the oculomotor muscles (pillar one). With the progression and addition of word finding, detailed in our "how to" below, saccades can progress to an activity that works both pillar one and three. Within football, it is important that players can process information gathered from saccadic eye movement efficiently and effectively. For example, quarterbacks need to process a large amount of information after scanning the field to decide where to go with the ball as well as remembering where the receivers are. On the defensive side, linebackers must be aware of the whole field as the play develops left and right and use that visual information to process what they should do during that play. Furthermore, the addition of the T-Scope in the Dynavision with programs such as fill in the blanks, math, and call/recall would incorporate the third pillar into the exercise.

In conclusion, the Beaver's do a fantastic job of incorporating sports vision training into their sports performance program. However, incorporating more brain training, pillar 3, into that training could assist them in their sports vision program with NeuroVisual Training.

References:

OSUBeaversAthletics. (2015, July 24). *Oregon State Beavers Football Vision Training*. YouTube. Retrieved August 10, 2022, from https://www.youtube.com/watch?v=MCC8fjIFQuk

“How To” – Converting traditional “vision training” into NVT

NeuroVisual Training is an advanced form of vision training that works to engage the three pillars of NeuroVisual Training. Those Pillars are: Ocular motor, Eye discipline, and Brain. Why would a sports performance trainer want to engage the brain when training an athlete? Well, the answer is simple; The brain controls all athletic movements. If you want burst speed, the brain must coordinate that. If you want an athlete quick to respond during play, the brain makes that decision in part through recognition and reaction training. The concept of NeuroVisual Training is that if you train the brain and visual system together the two can and will get better together. The brain will keep up with the eyes and the eyes will be more effective at providing the brain with useful information.

Activities such as saccadic eye movement are a great exercise (I2V2), but it is deficient in engaging higher functions of the brain. If the eyes get faster at scanning the field can the brain keep up with the information coming into the brain? Hart charts and scanning saccades are a great vision training method to train eye movement specific saccadic eye movement which is critical to scanning activities. Once your athlete becomes proficient at saccadic eye movement with the Heart charts, how do you progress that activity to include the third pillar of brain training? You can use word finding Hart charts as the answer. Word finding Hart charts including custom made Hart charts with words of your choice, are available at https://inneuractive.com/product/saccadic-eye-charts-hart-charts/.

For word finding Hart charts the alphanumeric will spell out words. As the athlete calls out the alphanumeric while scanning left and right the letters spell words.

They are tasked with remembering the letters and calling out the words they spell. The added memory task usually causes a person to slow down on the speed of their saccadic activity and they sometimes do not find all the words. There are training and strategy benefits to this exercise, and it adds the third pillar to the NeuroVisual Training

We usually start a person on this with two sheets scanning and calling the alphanumeric and words for 1 minute. We will progress it to two minutes and allow the person to gain familiarity and proficiency. Proficiency is a fast speed as assessed by loops per minute (or 2 minutes) and finding a majority of the words consistently. Once this is mastered, we progress the complexity of the task by quizzing the subject on what words they remember. Delayed recall is an important part of the third pillar and delayed recall with word finding saccades is a great progression of the activity and training modality.

Hart charts are used for saccadic eye movement as well as accommodation or near far activities. The word finding Hart charts can be made or purchased for near far activities as well. Near Far NVT was discussed in I2V5 of FoNVT. You can progress the athlete in the same way as the Hart charts for scanning saccades. Also, regarding progression, the scanning Hart charts and near far Hart charts can be progressed from two sheets to 3 or 4 sheets with word finding. This added level of complexity with the Hart charts makes word finding hart charts a valuable tool for NeuroVisual Training.

Eye hand coordination was somewhat addressed in the Oregon State Beavers Football Vision Training - YouTube video using the Dynavision.

Dynavision is a platform technology that can train and test eye hand coordination, reaction time, peripheral vision and the third pillar of NVT brain training.

Finally, if you want to continue to progress an athlete to ever more complicated and higher levels of NVT using Hart charts, you can do that. Consider adding to the Hart chart training of saccades and / or near far accommodative flippers. The accommodative flippers are a great aid to exercise the accommodative system and they can be used with Hart charts (saccades or near far) with word finding. Determining the strength and settings for accommodative flippers is beyond the scope of this article, but if you are comfortable with using accommodative flippers and Hart charts, consider adding word finding as well. Also, for progressing Hart charts consider strobe glasses. Strobe glasses were discussed in I6V1 and can be used with Hart charts and word finding. Strobe glasses provide a temporal distraction and can be used for NeuroVisual Training. They train the brain to ‘fill in’ gaps in information coming from the eyes. As such they can be considered as a pillar three activity, but they can also be added to Hart charts with word finding. Strobe glasses layered on Hart charts with word finding would be a great training method for a NeuroVisual Training program.

In Conclusion the vision training program presented by The Oregon State Beavers is a great foundation for Vision Training and a gateway training program for NeuroVisual Training to engage the brain in Vision Training.

Announcements

We wanted to shout out two twitter accounts with amazing content! @hubermanlab is a great science communicator and neuroscientist at Stanford University and posts neuroscience related content regularly. @mementalmuscle posts videos related to cognitive science and applies psychology. We recommend checking out these pages for some great content!

Please take a look at the 2022 NORA conference https://noravisionrehab.org/about-nora/annual-conferences/2022-annual-conference it is in Columbus Ohio September 8 to 11. Several of us will be there.

As always, if you’re interested in learning more about Inneuractive, our mission, our products and service offerings, or just Neuro-Visual Training in general, please click the following link: www.inneuractive.com.

Have suggestions for a future issue? Please reach out to clarkjf@gmail.com or info@inneuractive.com and we will do our best to include your request in the future.