

FRIENDS OF NEUROVISUAL TRAINING NEWSLETTER. ISSUE 7, VOLUME 1.

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Introduction.

Have you ever been to the gym and seen “that guy” with huge arms and pecs? He’s doing vanity weights but seems to be skimping on his leg days. Do you have the mental image of “that guy?” Well this weightlifter is clearly suffering from a mismatch in his upper body to lower body training days, focusing on one group of muscles (upper body) versus another group of muscles (lower body). An experienced strength coach or trainer would quickly see this mismatch and, assuming no contraindications, work on developing their lower body. An experienced strength coach or trainer would not give him a cookie cutter strength & conditioning program, they would design it for “that guy’s” needs, sports specific or vanity needs.

Assuming you agree with the above, why would anyone want to participate in or develop a NeuroVisual Training (NVT) program with a “cookie cutter” approach? Today’s article is about personalized NVT to work the systems that need to be worked based on sports, position, and/or pre-existing abilities (including pre-existing deficiencies). Now take the previous concept to the next level; what does the person wants to accomplish based on sports or activities? Again, customization of NVT based on that person’s sport is critical.

Benefits of a Personalized NeuroVisual Training Program.

When we are setting up to do NVT, we always establish the following: (1) What is the sport (including position) or activity, (2) What are the current abilities of the athlete(s), (3) How much time do we have with the athlete(s), and (4) What are the facilities we have to operate within. We use these four crucial pieces of information to design a personalized NVT program that is tailored to the individuals, especially with deficiencies. As we know that it would be quite difficult, and inefficient to provide individualized NVT programs to each individual player on a sports team, we are able to develop more team-specific NVT programs, while still tailoring certain exercises to the different position groups. This allows for a more genuine approach with 1-on-1 and/or small group NVT programs (<10

individuals or players per team), as well as a more realistic approach for teams' NVT programs, especially the larger teams such as baseball and football.

With that said, let's highlight some examples: With a sport such as football, we have over 100 individuals with different skill sets and different needs within that team. Think about the many distinct and obvious differences between receivers and linemen. Linemen tend to do a lot of hand fighting on the line of scrimmage with an adversary less than 3 feet away. Whereas receivers may have to maneuver their arms over their head while essentially airborne to catch the football, which can be coming from half a field away. The lineman will need eye-hand coordination, quick reaction times, rhythmic stabilization, balance, eye discipline and peripheral vision training. The receiver will need accommodation training, near/far, vertical and horizontal saccades, jump training, balance training, and overhead eye hand coordination training. When comparing Linemen to receivers, Linemen need to do very little NVT above their shoulders, so we do relatively little overhead training with them.

There are also times where an athlete's innate abilities may dictate their NVT needs. There may be preexisting conditions that could warrant a person to avoid certain drills. For example, if a person has an esophoria*, say from a weak eye as a kid, you would want to be cautious on what exercise that person does. You may want to avoid Brock string, make sure computer programs are farther away, or set the T-scope to 3-feet or more away. You may wish to regularly check depth perception and binocularity or suppression. You may also wish to up suppression mitigation exercises if the person tends to suppress their "weaker" eye. The lesson here is to consider a solid baseline to give guidance on needs as well as contraindications. Most optometrists can do a pre-NVT exam to aid in setting restrictions and goals.

Space is a consideration as it can dictate what you need to do, but it should also guide in the sport you are working. For example, if you want to do NVT with baseball batters, they need to track a ball from 60 feet 6 inches through to crossing the plate. If your training facilities are a 10-feet x 10-feet box, you may be missing appropriate accommodation training what these batters need while batting. If you choose to do NVT exercises entirely through using a computer screen, you are also losing valuable accommodation training and the scanning requirements needed on a baseball diamond. Conversely, if you are restricted to a 10-feet x 10-feet room and you are working through your NVT program on a boxer, that may be okay. If you are training someone who plays tennis, maybe the peripheral vision training is less important. NVT through a wide range of depth, breadth, height, and speed based on the sport is critical.

For NVT we recommend multiple short duration exercises. Typically, the tasks are 1 to 2 minutes and rotate on to another activity. These 1 to 2 minutes exercises are performed in multiple sets, over a period of 15 to 30 minutes depending upon the needs of the athlete(s). The rationale behind this philosophy is expanded upon in *Issue 4 of Friends of*

NVT on neuroplasticity; www.inneuractive.com/friends-of-nvt. We also recommend the total duration of the NVT to be about 75 to 150 minutes per week, spread out over several days. You may have as little as 2 weeks or 6 months for NVT. Thus, it is necessary to customize the duration and lead in for the NVT based on the time available. Like strength and conditioning (*Issue 3 of Friends of NVT*) you cannot do one day of NVT and see the same benefits you would have if the NVT was consistently performed and spread over several weeks. We have seen benefits from NVT within as little as 3 weeks of NVT (5 days per week for 15 min per session) and 6 weeks (2 days per week for 30 minutes per session). Thus, there are ample options to customize a quality and effective NVT program based on the needs of the athlete(s) or the team(s).

In conclusion, NVT can be applied to a wide variety of sports and activities. It can and should be implemented with an eye to improving the craft required of those individuals to optimally perform during their sport. Taking into consideration the abilities and or deficiencies of the individuals being trained will also improve the efficacy of the NVT program.

**esophoria* - a tendency of the eyes to turn more inward than necessary when an individual is viewing an object at near or at distance which may cause the individual to experience eyestrain and other symptoms

How To: Reading Saccades

Saccadic eye movements are a rapid eye movement that allow us to quickly scan a visual scene. An example of this would be looking left, then looking right before crossing the road, but without moving your neck or head, only using your eyes. Saccadic eye movements are routinely assessed post traumatic brain injury (TBI), as they are a part of the eye-brain axis that seems to be commonly affected by TBI. One thing to note is that there are different processes at play when performing saccades up close, like when reading, or when at a distance, such as quickly checking each side of the football field looking for where the other team's players are positioned.

Even without injury, we like to obtain a baseline measure of a player's saccadic abilities prior to play to appropriately design NVT programs that improve upon their baseline scores to help enhance their performance. Therefore, we suggest testing for 'near' saccadic eye movement with a "Reading Saccades" assessment, which takes about 1 minute to provide the directions, and 1 minute to perform the assessment. This test can be scored using a stopwatch and uses a single sheet of paper with a 10 by 10 hart chart on it.

Our protocol for Reading Saccades:

1. Advise the participant to sit comfortably and hold a 10x10 alphanumeric sheet as if they were reading a book.
2. Have the participant read out loud the alphanumeric starting at the top left character of the first column with the second alphanumeric read out loud being the top right character of the tenth (furthest right) column.
3. Continue reading the characters of the first and tenth column until the most bottom character of the first and tenth column are read.
4. Then progress to the reading out loud the top left character of the second column and then the top right column of the ninth column.
5. Read these characters until the bottom characters of the second and ninth columns are read out loud and progress back up to the top left character of the third column and the top right character of the eighth column.
6. Continue reading the alphanumeric chart in this fashion until the final characters at the bottom of the fifth and sixth columns have been read out loud.
7. Record the time it takes the participant to completely read the entire alphanumeric sheet in this fashion, making sure to stop the time once the last characters of the alphanumeric have been read out loud (bottom characters of the fifth and sixth columns).

If we see poor results (> 1 minute to finish the task) plus poor scanning saccades, we might be concerned with an extra ocular muscle deficiency and consider referral to an optometrist. The optometrist might aid us in developing NVT to treat such deficiencies. Difficulty with the reading saccades can also be a harbinger for academic difficulties. Your optometrist might repeat the tests but with prisms, one eye at a time or other means for improving saccadic eye movement.

Announcements.

The biggest announcement for this week is that the University of Cincinnati Bearcats Football Team has officially started their Fall Pre-Season Camp! We are literally writing this from the grounds of Camp Higher Ground (in the COVID bubble). Let's wish them the best through yet another pre-season camp at Camp Higher ground. GO BEARCATS!

Fun Fact: The University of Cincinnati Football Team has one of the oldest college football traditions in the nation by still going off campus for their Fall Pre-Season Camp.

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