

FRIENDS OF NVT

OFFICIAL NEWSLETTER OF INNEURACTIVE



INTRODUCTION

Welcome to Issue 5, Volume 5 of our continuing Friends of NVT Newsletter! The place for all your neuro-visual training insights and information. We are thrilled for you to be joining us yet again and continuing your support for our mission to provide the cutting-edge of NVT methodologies and newsletter.

In this week's issue, we are discussing a great topic about a certain NVT progression and why it's important: Rhythmic Stabilization – Why & When to Incorporate it into your NVT Program. This topic of "Rhythmic Stabilization" is a popular one, because it combines NVT with the vestibular system, on top of our usual cognitive overlay of an exercise making the athletes focus on a primary and sometimes multitasking while ignoring the physically induced distractions.

Furthermore, our "How To" for this week explores sequential processing exercises. So make sure to stick around for that and learn how to get more out of your NVT program! Lastly, we have several exciting updates and announcements, so stay tuned and make sure you don't miss those, found at the bottom of this newsletter.

As always, we genuinely appreciate your support, and continue to look forward to bringing you the latest updates, philosophies, and strategies of Inneuractive, and our NVT programs. Make sure to follow us on twitter at @FriendsofNVT.

WHAT'S IN OUR LATEST ISSUE:

- Introduction
- When and Why to Incorporated Rhythmic Stabilization into NVT - Dr. Joseph Clark
- How To: Sequential Processing - Jon Vincent
- Announcements
- Disclaimer



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WHEN AND WHY TO INCORPORATE RHYTHMIC STABILIZATION INTO NVT

Rhythmic stabilization is a relatively established method of perturbing the core of the body or the limbs while the subject is doing a task. The subject must adjust from the perturbation to continue the task. A simple example is to have the subject lay on his/her back, hold a weight straight up. We'll call this the starting position. A therapist will push and pull the arm and the subject must adjust to bring the arm and weight to the starting position.

Now take this concept to an NVT training program. Imagine an athlete doing the Dynavision A* routine and a trainer is doing rhythmic stabilization by pushing, pulling, and bumping the arms and shoulders of the athlete. You've added a cognitive, visual, and proprioceptive load to the task. Let's break this down. When the athlete sees a button light up, the right arm starts moving to the button based on visual and motor commands. But if the arm is moved via the rhythmic stabilization, the proprioceptive system must detect that movement, the visual and motor systems must change the trajectory of the arm to be able to hit the button and do this quickly as the task is a timed task. Every hit now has this added set of calculations, making for a great training tool.

We can do the rhythmic stabilization with resistance bands or by hand. I've had hockey players do the Dynavision with their colleagues doing mock hip-checks on them. Please note, for safety reasons we tend to keep the rhythmic stabilization from the waist and above, excluding the head and neck.

If the movement with the rhythmic stabilization is forceful enough it can even challenge the balance system. People may lower their center of gravity or broaden their stance to combat balance disruption. Football linemen are often taught, the low man wins. Meaning they may stand up too much. Rhythmic stabilization of the hips and core will teach them to keep their center of gravity low.

We mix up the rhythmic stabilization to stimulate the body's core, the upper extremities, the hands, and all of the above. This is one of those activities where the limit is your imagination.

We will do rhythmic stabilization during pitch and catch as well. Imagine doing Marsden balls, aka Squarkle (FoNVT I1V2), where the athlete needs to catch the balls in the right or left hands based on color and call the shapes on the balls. All the while a trainer is hip checking them or push/pulling on their core. Rhythmic stabilization can be performed while a person is doing saccades or near far. We've used rhythmic stabilization as a surrogate means to aid in dynamic visual acuity while reading a Snellen eye chart or Hart chart.

Several athletes that FoNVT authors have worked with have used rhythmic stabilization as part of their pre-game warm up. For some athletes it can help them get into the zone of focusing on a task while "ignoring" but dealing with an activity like being pushed around. Boxers and combat sports athletes get benefits from this type of warm up.

If you've got two hands, resistance bands and some NVT drills you can progress your NVT training by adding rhythmic stabilization. It makes the task harder but grows the benefits from that task.

“HOW TO – Sequential Processing

The Encyclopedia of Clinical Neuropsychology defines “Sequential Processing” as a cognitive process of integrating and understanding stimuli in a particular, serial order. Sequential processing is used to accomplish tasks that focus on the order of the information or stimulus is presented. This commonly occurs when reading. In order to effectively read, one must be able to recognize the letters, the word that is made up of those letters, the words meaning within that sentence, and so forth. Neuropsychologists believe that there are three main stages of information processing: the stimulus-identification stage, the response-selection stage, and the response-reprogramming stage. They believe that each of these three stages of information processing contributes to an individual’s reaction time. With that in mind, we believe that to effectively train sequential processing, each of these three stages of information processing must be addressed with each task.

Athletes are a common group of people that must excel at sequential processing in order to be successful on the field or court. Let’s take a quarterback on a football team for an example. During each play, a quarterback has to make several reads off of the information the opponents are presenting with their defense. These are commonly called a QB’s progressions. When they go to pass the ball, the QB has to make these progressions in a sequential order due to how the play is drawn up. The primary target for the pass is the first look, but to be confident in this throw, the QB must assess all sorts of information with this first process, and then most importantly, make a decision to either throw or proceed to their next progression. Several sequential decisions are made in a very quick amount

of time, and this is only one of many examples of how sequential processing is very important for athletes.

Another example of sequential processing could be a basketball player receiving a pass on a fast break from a player that just rebounded the ball. The basketball player receiving the pass must first, catch the pass, which in itself requires processing of several different pieces of information really quickly. Then once the ball is caught, to run down the court quickly, assessing the defenders and teammates that may be open for a pass, or a lane then can drive into and attack the basket. This decision is also based off of sequential processing. If the player with the ball sees no one open to pass to, the next action is to look for a lane to drive into. If that doesn’t work then they may have to bring it back out and try again with the same decision.

As you can see, sequential processing spans throughout most sports decision making, as it is a fundamental cognitive ability with regards to information processing. Now we will provide an example of how we train sequential processing by combining our Marsden ball or Squarkle exercise (FoNVT IIV2) with our Dynavision Reaction Time assessment/exercise (FoNVT I4V2). The instructions are as follows:

1. On the Dynavision D2 device, run Mode C, which is the reaction time assessment/training exercises.
2. Align the participant up on the center left side of the board as you would if you were going to have someone perform the D2 reaction test.
3. Have the participant perform one reaction time run, using their right hand to hold the illuminated light, and then once a horizontal button lights up,
 4. have them quickly hit that newly lit button with their right hand.
 5. As soon as the new button lights up, the partner or trainer tosses a Marsden ball up in the air to the participant to turn and catch with the appropriate hand, following the Marsden ball pitch & catch instructions.
 - a. RED balls are caught using the RIGHT hand
 - b. GREEN balls are caught using the LEFT hand
 - c. BLUE balls are caught using BOTH hands
 - d. BLACK balls are also caught using BOTH hands
 - e. GREY balls are AVOIDING & IGNORED – NOT CAUGHT
 - f. Any other color balls are caught without any specific rules
 - g. WHITE balls are caught according to the above-mentioned rules; however, their color is associated with the sticker color on the white ball.
 - h. For WHITE balls, the participant must also call out loud the shape of the sticker on the WHITE balls, while maintaining the color to hand associated catching rules, and calling out loud the shape of the sticker on the WHITE ball being thrown WHILE IT IS IN THE AIR, PRIOR TO BEING CAUGHT.

So, with all that put together, you have an effective sequential processing drill that trains the participant to perform specific tasks in order while making varying levels of difficult decisions and information processing.

Announcements

We have an exciting announcement this week! Congratulations to several FoNVT team members on publishing a recent paper in the Journal of Optometry and Visual Performance entitled; "Use of Optical Coherence Tomography to Demonstrate Retinal Integrity in Division 1 American College Football Players as a Means to Reflect Brain Health With or Without Sports-Related Concussion." This paper presents a novel concept concerning Sports Concussion where exit baselines can be used to document brain health of the athlete post sports career using OCT as a kind of biomarker of brain injury.

Also, the Carrick Institute’s biannual Synapse Sessions are approaching quickly, sign up why you still can! They occur between October 23-24, 2021. For more information and registration, please visit the following link: <https://synapse.carrickinstitute.com/>.

One thing we must mention, is congratulations to our UC Bearcats football who are now ranked #3 in the nation and are slated to play UCF at 12:00 PM EST on Saturday, October 16.

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.