

FRIENDS OF NVT

OFFICIAL NEWSLETTER OF INNEURACTIVE



INTRODUCTION

Welcome to Issue 4, 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 an exciting and important topic: Peripheral Vision Testing, Training, and its Role in NVT. This topic of "peripheral vision" is a popular one, as many people claim to train peripherals, improve peripheral vision awareness, etc. It is important to keep in mind that no device will appropriately train peripheral vision processing, awareness, or reaction time. What devices allow for is good exercises and methods. The device is just the conduit for what good neuro-visual training exercises and methods can go through to help improve peripheral vision abilities (processing, awareness, reaction time, etc.).

Furthermore, our "How To" for this week is quite complimentary to the peripheral focused content piece as it explores peripheral training with Hart Charts. 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:

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Peripheral Vision Testing, Training, and its Role in NVT

“Use your peripheral vision.” A sentence if not an epithet used by numerous coaches. Coaches involved in sports like soccer, football, basketball et cetera know that athletes need to be field and situationally aware including information from their peripheral vision. Based on the universality of this quote it is easy to infer that neurovisual training (NVT) that incorporates peripheral vision would be welcomed by the sports performance community. The questions then become how do you do it and how do you know you’re successful? In this article we’ll present some of the critical components as to what one should consider when adding peripheral vision training to a NVT program.

Optometrists can assess peripheral visual fields using automated perimetry or similar devices. These are great to test peripheral vision, but this only tests peripheral vision. What do you want to do for athletes to improve performance? When considering peripheral vision training you may wish to have testing and training methods so you can document benefits.

A recent review article by Vater et al., reviewed peer reviewed publications that utilized peripheral vision training for sports focusing on 5 main peripheral vision modalities, Vater et al., 2021. The peripheral vision training devices they examined were: Dynavision D2, CogniSense NeuroTracker, Nike SPARQ Vapor Strobe, FitLight Trainer, Vienna Test System. There are other NVT based methods to improve peripheral vision that does not require purchasing these devices. These other devices are pinhole peripheral cards, Hart Charts, Computer based eye discipline, Flash cards, as well as Two Baton Pitch and Catch. Several of these have been discussed in FoNVT. The authors conclude “the five most widely studied peripheral vision tools, we were able to show that devices like the Dynavision D2 and the Vienna Test System allow testing the ability to detect peripheral targets with comparably high experimental control and (simple) action responses.” They also highlighted some of the training benefits of the other modalities, except for the strobe glasses. The constellation of the devices they reviewed had strengths for testing and training of peripheral vision.

Concerning NVT, lets list the critical elements. The ‘extremes’ of peripheral vision are limited by anatomy and a person’s anatomy is hard to change. It may be essential to assess those limits and work within those limits, however. For sports NVT and peripheral vision training one may wish to consider working on the following: improve the degrees of peripheral vision, improve trust in peripheral vision, improve color recognition in the periphery and improve speed (reaction times) of peripheral vision.

To train peripheral vision degrees of recognition in the periphery you can use pinhole peripherals and Hart charts. The pinhole peripherals use cards with colors and shapes around a pinhole and the person identifies the peripheral images while focusing on an object or testers eyes looking through the hole in the center of the cards. Using Hart charts the athlete reads columns of alphanumeric while scanning down a line in the center of the columns. Each test can be scored by recording the time as well as number of errors. The training can be progressed to more difficult by extending the distance away from central vision.

Trusting peripheral vision can be achieved in several ways. Using pitch and catch with multi color batons or multi color hula hoops can improve trust of peripheral vision (Reference FoNVT IIV2 and FoNVT I8V4). The trust is built by throwing two batons or two hula hoops simultaneously to the athlete and the athlete must keep his/her eyes on the eyes of the thrower and catch on the correct color as called. They need to trust their peripheral vision to make the simultaneous catches. The NVT trainer throwing the two objects ensures the athletes eyes stay straight.

Training the speed of peripheral vision can be trained and tested using Dynavision D2, Senaptec Sensory Station, Fit Lite, and/or Blaze Pods, as well as several others. When using these devices, especially the Dynavision D2, it is very important to instruct or coach the athlete to keep their eyes fixed straight ahead and use their peripherals to hit the buttons or lights. This improves speed of visual reaction processing and the trust of the peripheral vision.

There are computer-based training aids such as Eye Discipline + Retinal Retention Software (FoNVT Issue 3, Volume 2: www.inneuractive.com/friends-of-nvt-newsletter) where a person keeps their eyes fixed and must see, recognize, and call out objects in the periphery. This training aid is a simple software program that can be loaded on to a computer. Other computer-based programs such as NeuroTracker can be used as well. These can be used to improve degrees of peripheral vision as well as color peripheral vision.

Color peripheral vision can be trained as needed with several of the modalities above. Dynavision, Blaze Pods and Senaptec can have different colors for the eye hand coordination and reaction training with peripherals. The computer programs, pinhole cards and Hart charts can be progressed to include colors. For example, with the pinhole cards the athlete may be instructed to call out color and shaper or color and alphanumeric.

Overall, for peripheral vision training the NVT practitioner has a wide range of aids and modalities to choose from. These can easily be added to an existing NVT program to address coaches, “use your peripheral vision” exclamation, with the response of we can test it, train it and make it better.

“HOW TO – Hart Charts for Peripheral Vision Training

If you are interested in doing peripheral vision training and progressing, as well as quantifying that peripheral vision training, you likely have a simple tool to do that immediately. Hart charts in a 10 by 10 grid, or similar, can be used to train peripherals.

In Figure 1, there is a Hart chart with a line drawn down the middle. This line becomes the tracking line. The subject can do this task with or without the line. Herein the line is used as a training aid. The client is told to visually track from top to bottom the line and using peripherals read off the alpha numeric to the immediate left and right. It helps to cover the columns not being called out. So with the eyes moving down the subject would call out: “M”, “C”, “A”, “H”, et cetera. To quantify the results, record the time it took the participant to complete the task, and make sure to record if there were misses or eye peeks.

Next uncover the columns starting with P and Z. Have the person repeat the task calling out the alpha numeric while scanning down. Record the time it takes and the misses or eye peeks. Continue until the person is unable to resolve the alphanumeric. You can do this with two eyes and or one eye at a time. You can also add color to the task. Or a person can call color and shape. This trains peripheral vision, trust in peripheral vision, color peripheral vision and speed of visual processing.

You can progress the difficulty by having the font smaller, the person closer to the sheet (closer is harder). Keeping score gives people a sense of accomplishment and they can track their progress.

One caveat to using the Hart charts for peripheral vision training is once people get proficient in this task it can positively impact their reading saccades performance. If you are

interested in assessing saccadic eye movement time using the Hart chart for reading saccades make sure they person has their eyes moving left and right, and not just using their newly improved peripheral vision!

Figure 1: Hart Chart with vertical line example.

3	Z	P	M	C	Z	E	B	L
W	T	S	A	H	F	3	R	V
C	Q	J	D	W	T	N	C	4
U	Q	L	R	8	W	P	K	Y
Q	2	I	K	I	G	2	D	B
P	A	T	X	U	6	E	X	1
C	G	M	W	P	O	X	Z	Q
B	K	D	B	7	1	9	X	F
A	Q	Z	D	N	C	O	E	P
V	C	2	H	G	J	H	L	U

Announcements

The Carrick Institute, thought leaders in the field of Functional Neurology, are hosting their biannual Synapse Sessions October 23-24, 2021. For more information and registration, please visit the following link: <https://synapse.carrickinstitute.com/>.

As always, if you're interested in learning more about Inneuractive, our mission, our products and service offerings, please click the following link: www.inneuractive.com.

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