

# FRIENDS OF NVT

OFFICIAL NEWSLETTER OF INNEURACTIVE



## INTRODUCTION

Welcome back to Issue 6 Volume 7 of the Friends of NVT Newsletter! In the main portion of today's newsletter, Dr. Joseph Clark breaks down the NVT-centric composition of Inneuractive's Marsden Ball Pack.

In our "How To" this week, authors Esha Reddy and Jon Vincent provide methods for performing traditional and dynamic jump-duction exercises using Brock string.

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:

- Introduction
- Breaking Down the NVT-centric Marsden Ball Pack - Dr. Joseph Clark
- How to: Jump-Ductions using Brock String - Esha Reddy and Jon Vincent
- Announcements
- Disclaimer



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# Breaking Down the NVT Centered Marsden Ball Pack

The Marsden ball variety pack uses a mixture of colored balls plus balls with shapes and characters as an NVT tool. Please note, this variety ball pack is for pitch and catch activities and is loosely based on the hanging Marsden ball and borrows the name Marsden despite being a distinct training modality. These balls are essentially wiffle balls in combination with ball pit balls all used during pitch and catch exercises to train eye hand coordination along with improving visual processing speeds. This activity covers pillar 3 of brain training including ocular motor pillar 1 for eye tracking.

Different sized balls are recommended to aid in size estimation when catching. Heavy balls such as lacrosse balls, should be avoided as they run a risk of injuring a person. Tasks can start simple and progress to more complicated tasks along with multi-tasking exercises. Athletes or clients are asked to make decisions while the balls in the air and act or react accordingly. You will want to progress your client or athlete from simple to complex. Consider starting the pitch and catch activity with the person catching red right, green left, blue or black both hands and all other colors in any hand. Then have a person call the shape or alphanumeric on the ball in the air. This task requires the person throwing the ball to throw a “knuckleball” with minimal spin. Continued progression with rhythmic stabilization, pinhole glass, strobe glasses and the like can add complexity to the task.

Composition of the Marsden Ball Variety Pack. The pack we wish to recommend includes 37 balls with a range of colors and shapes on them. A box of 37 balls is a unit of measure for us in that when planning NVT sessions a box of 37 balls is listed as a task taking 2 to 4 minutes to complete. Catching the balls with the correct hand, based on color, and calling the shape in the air is a visual processing and eye hand multi-task that enhances cognitive processing while tracking and catching the balls. This NVT tool is fun and challenging, it is simple to get started and has a wide range of progression options as a person gets better at the task.

## The List of Balls:

6x solid White balls with Triangles, Red Blue Green (RBG).

6x solid White balls with Squares, RBG

6x solid White balls with Circles, RBG

3x solid Red balls

3x solid Blue balls

3x solid Green balls

\*1x solid White ball for each of: Z, X, L, P, M, H, U, E, 9.

NOTE: “\*” is that the single alphanumeric should be written such that they can look like an alternate character, see below. Also, these tend to be written with different colors (RBG) on white wiffle balls. The Red right, green left, blue both rule applies to these as well.

The alpha numeric characters should be written in a font such that they can appear to be more than one character such as: 9 like 6, E like 3, H like I, L like 7, M like W, P like D, U like n, X like +, and Z like N, etc.

The rationale for this combination of balls is grounded in the concept of aiding the thinking part of the pitch and catch. The color determination to use the correct hand. But color can be the ball or the alphanumeric. Thus, a differentiation calculation for the source of the color is needed. The shapes and the alphanumeric require a higher level of acuity and tracking for the brain to receive sufficient information to identify the content on the balls. Good eye tracking is needed to take in this visual detail. The alphanumeric which can be interpreted into different characters are intentional and a decision needs to be made. But it also enables the client or athlete to have more than one angle to obtain the answer and increases the perception of more options for response on the balls.

Of all the vision training modalities supported by Friends of NVT, the pitch and catch modalities are generally the most popular especially for the ball-sport athletes. The Marsden ball Variety Pack is a lot of fun for many athletes and clients and forms a foundation for many of our clients and patients. Add a box of balls for a pitch and catch as part of an NVT session and have fun.

## Disclaimer.

Nothing in this communication should be construed as a practice of medicine, an endorsement, or political action. The opinions are the opinions of the a

# “How To” – Jump Ductions using Brock String

Jump Ductions are exercises used by optometrists in traditional vision training to improve the ability of the eyes to “move from visual tasks that require convergence to divergence of the eyes and back”. Naturally, jump ductions involve the utilization of the extraocular muscles to converge for near objects and diverge for far objects in an efficient manner.

In clinical settings, there is robust scientific literature demonstrating the utility of jump duction exercises in improving accommodative dysfunction in adolescent and adult patients. In sports, it is imperative that athletes have an efficient capacity to converge and diverge effectively, not only to prevent injury, but to also maximize performance.

Traditional jump duction exercises using the Brock string are performed in a sequential manner. In these exercises, the participant diverges on the beads moving away from them and then converges on the beads coming towards them in a sequential manner. Our version of jump ductions include these traditional sequential jumps but further build upon them by incorporating dynamic jump ductions. Dynamic jump junctions go a step beyond traditional jump ductions in the fact that they include random jumps that can vary in type of vergence and distance – more accurately resembling the playing field. For example, in soccer, if a player has the ball and is driving towards the goal, they are looking at their teammates father away (divergence), then looking for their defender (near convergence), and for a teammate that they can potentially pass the ball to (less far divergence).

The ability to accurately and efficiently converge or diverge their vision to a particular spot has the potential to shave nanoseconds off the vision processing and inevitably their decision making in whether to shoot to score or pass to their teammate who may be more open and have a better chance of a successful goal.

Evidently, the real world does not consist of only sequential processes, demonstrating the need for dynamic jump duction exercises. Below we provide instructions on how we would coach someone through doing sequential and dynamic jump ductions using the Brock string.

## Instructions: Jump Ductions using Brock String

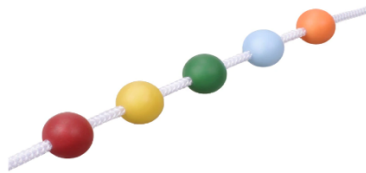


Figure 1. Five bead Brock string

Our exercises consist of three sets of 10 jump ductions per set. The first set is a sequential jump junction set to acclimate the participant to the exercise whereas the second and third sets are dynamic jump duction sets.

### Set 1:

a. Use a 10ft Brock string with five 1in beads of different colors. As an example, we will be using a Brock string with red, yellow, green, blue, and orange beads.

b. Instruct the participant to hold the Brock string at their nose bridge as usual. Then, have them start by looking at the first (nearest) bead for one second while calling out the color of that bead (red).

(Note: As the trainer, you want to orient yourself so that you can see the participant’s eyes converging on each bead).

c. Instruct the participant to move their gaze from the nearest bead to the next bead for one complete second while calling out the color (orange). Continue the same process of having them shift their gaze to the subsequent bead and calling out the color of the beads.

We want the participant to get to the point that when they get to the second bead (orange), they should perceive two of the first beads (red) with two strings that converge onto the second bead. Essentially, they should see an “X” at the bead that they are converging at (except for the first/nearest bead and last/furthest bead).

d. At the conclusion of the fifth bead, instruct the participant to look into the distance for one second and then come back down the string towards themselves, focusing on each bead for 1 second and calling out the color again.

Repeat steps b-d until the participant has completed five down-backs (10 jump ductions each). Between sets, allow the participant to rest for a minute.

### Set 2 & 3:

a. Instruct the participant to start at the middle bead.

b. Call out a bead color. As you call this out, the participant has to jump and converge or diverge to the bead color that was called out.

c. Using Figure 1 as an example, if the participant is starting at the middle green bead, as the trainer, you could call out “red”, then “blue”, then “orange”, then “yellow”

d. As you are calling out the bead colors, aim to hit every color twice.

Break for one minute, and repeat the same procedure for Set 3.

Overall, jump ductions are a great vergence exercise and tool in training the accommodative system.

In addition to our dynamic jump duction exercise, one could build even more off this by progressing to include flashcards that have to be answered in between each jump duction. This would add more of the “brain processing” from pillar 3 of our Neuro-Visual Training philosophy (FoNVT I1V1).

## Announcements

Check out this article regarding the recent meeting of the International Consensus on Concussion in Sport and their opinion on the link between concussion and brain disease: <https://www.nytimes.com/2022/11/08/sports/football/cte-brain-trauma-concussions.html>

If you are interested in learning more about NeuroVisual Training modalities such as how to use a phoropter in a rehab setting, please look into this course: [tinyurl.com/b9x3wv2z](https://tinyurl.com/b9x3wv2z). The course is designed for Athletic Trainers, Physical Therapists, Chiropractors and NeuroVisual Training specialists to gain more skills on the uses of the phoropter. Feel free to contact Dr. Clark if you have questions, [clarkjf@gmail.com](mailto:clarkjf@gmail.com).

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](http://www.inneuractive.com).

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

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