



THE  
NERVE HEALTH  
INSTITUTE



**SPORTS VISION INSTITUTE**

# 3V (VISION VESTIBULAR VAGUS) PROGRAM





SPORTS VISION INSTITUTE  
PLANO, TEXAS



# Welcome!

Studies show that professional athletes' eyes have better movement, depth perception, peripheral vision, accommodation, binocularity, coordination with the brain and body, and visual memory. The information the eyes bring in feeds into 30+ parts of the brain that we know of.

## The goals of this program are to:

- to help you better understand how your eyes work and harness their power
- to provide a systematic path for the athlete to change their own neurology through eye exercises
- to elevate visual skills & recovery to higher levels than possessed by the average individual and arrange conditions for optimal learning and performance
- to interconnect mind and body, do more with less effort, and improve schema (flexibility in the system)
- to improve visual thinking (attention, awareness, control, flexibility, discrimination), integration of vision with other senses, and integration within the visual system (accommodation, vergence, central peripheral integration, etc)
- for objective reality to match subjective perception of space

# VISION DIRECTS MOTOR OUTPUT



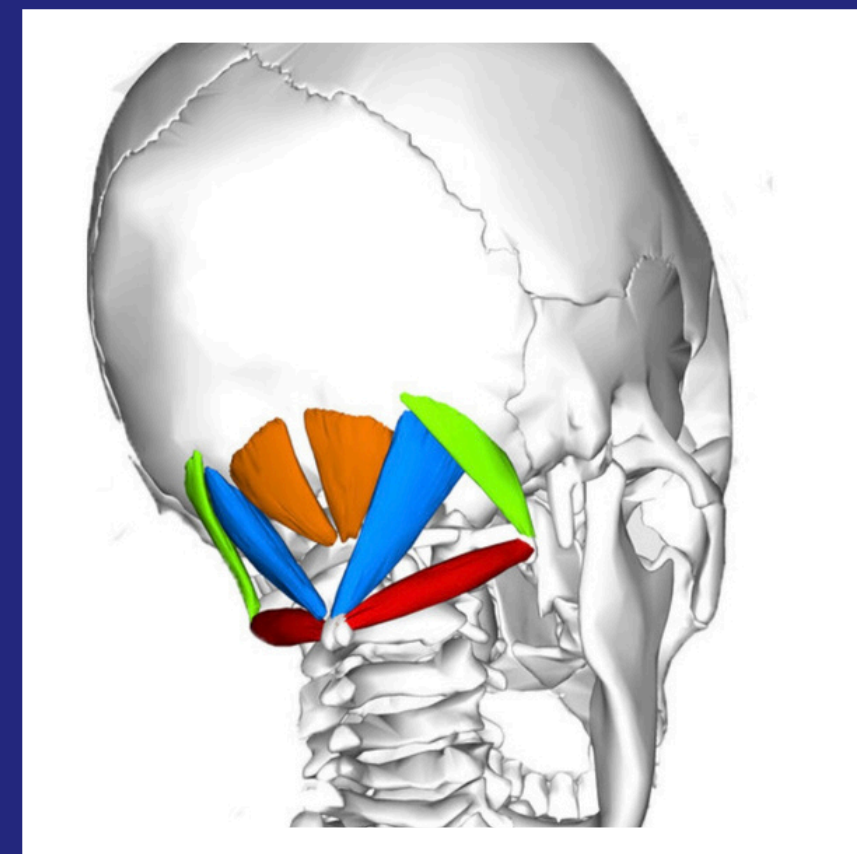
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## Try this (just an illustration, not an exercise!):

Find your neck muscles just below base of the back of your skull (suboccipital muscles). Gently place the tips of your fingers on those muscles and hold them there.

Move your eyes left, then right, then left, then right, —> left —> right —> left —> right —> left... Did you feel anything?

You should have felt those neck muscles pump or move a little. These suboccipital muscles position our head, and they are neurologically linked to eye position and will respond as you move your eyes. Then the head leads the body.





### What to expect:

Expect 3-4 exercises to take 15-30 minutes. Do them for 3 days weekly for 8-12 weeks. You may feel free to do your exercises up to 5 days/week if you want to go above and beyond and accelerate your improvement. I have provided a PDF that has a table to help you monitor your progress.

Where some athletes notice an improvement in 1-2 sessions, you may not notice any changes until after 8-12 sessions.

### At Home Vision Therapy

Doing daily oculomotor exercise as prescribed is a key component to success in improving the athlete's short- and long-term vision processing skills. **Build awareness of the feeling of the eye muscles during therapy so that the brain can make a record of it.**

The best time to do your exercises is at night before bedtime. The neural circuitry gets built in sleep!

Do your best and stay positive in the process.

# Sports Vision **Therapy**

Non-prescriptive Vision, Vestibular, and Vagus exercises that any athlete can benefit from and screen for problems.



## Accommodation

Accommodation is a monocular muscle action that focuses vision along the z-axis and is the foundation for binocular alignment.  
CRANIAL NERVE II, III



## Binocular Alignment

Your brain merges 2 images into 1 single image. This gives us depth. Binocular summation in the brain is key!  
CRANIAL NERVES II, III, IV, & VI



## Vestibular Ocular Reflex

The ability for the eyes to be stable through a rotation is extremely important.  
CRANIAL NERVES II, III, IV, VI, & VIII



## Vagus

The vagus nerve runs from the brainstem to every organ in the body. Good vagal tone keeps our body calm.  
CRANIAL NERVE X



## Central-Peripheral Integration

Maintain your attention on what matters without getting tunnel vision.  
CRANIAL NERVE II

# A NOTE ABOUT SCREEN TIME

ZERO SCREEN TIME 2-3 HOURS  
BEFORE GAMES OR PRACTICE.

Also limit screen time to 2-4 hours/day.  
Read it and weep.

Staring up close at a screen can make an athlete's accommodation "stuck." This can easily interfere with z-axis quickness and depth perception. Screen time can also fatigue an athlete's eyes before they even get started with a game. I am seeing accommodative spasm in kids more and more, which directly affect athlete's near-far (z-axis) quickness.

## MINDSETS

Historically the biggest downfall of this program has been compliance (athletes not finishing because they didn't notice results fast enough). The athletes who finish the 8 weeks have been 100% satisfied so far. Here are 2 mindsets you can adopt to increase your chances of success.

The well studied Growth Mindset and Stress-is-Enhancing Mindset are those you and your coach/teacher/parent absolutely must have to repeatedly & reliably reach goals. It comes down to what you believe. Just simply adopting these mindsets makes you 40-60% more likely to succeed.

## GROWTH MINDSET

You can change and grow with effort (neuroplasticity). If you can't do something... you just can't do it YET. When you fail, say a little "oops", observe, learn, and recalibrate. Learn how to learn. Failure is good.

## STRESS-IS-ENHANCING MINDSET

Start to think about stress in a different way. Leverage stress and limbic friction. Shift your attention from "I feel terrible" to a mode that discomfort is fording you an advantage. Shift your body away from a negative state to a positive state. Love pain. This is not a placebo. Difficulty is a sign that you're expanding. Stress and failure are indicators that your understanding is deepening, that you are learning, and that you are growing.



# EXERCISE 1: ACCOMMODATION

This isn't just a couple of papers full of letters... who cares about reading a chart!  
Register how your eyes feel while you do any of these exercises!

The athlete is working on:

- errors in accommodation & saccades
  - aka near far quickness & eye jumps, the most precise movements in the body
- localization, identification, discrimination, and auditory processing
- timing & rhythm
  - where was the last object and where is the next one?
- opening periphery and central-peripheral integration
  - dorsal peripheral and ventral central brain pathways and integration... especially when you get lost in the middle of the chart)
- sustained attention and focus (push through the friction in your brain)

## **DISCLAIMER:**

### **ATHLETES**

- **OVER THE AGE OF 40**
- **WITH AN UNDIAGNOSED OCULOMOTOR PROBLEM**
- **WITH AN UNDIAGNOSED LATENT HYPEROPIA**
- **WITH UNDIAGNOSED LEARNING DISORDERS SUCH AS RAN (RAPID AUTONOMIC NAMING), DYSLEXIA, LETTER CROWDING**
- **WITH UNDIAGNOSED AMBLYOPIA**

**MAY STRUGGLE EXCESSIVELY WITH THIS EXERCISE**

**PLEASE VISIT YOUR LOCAL EYE DOCTOR OR REACH OUT TO OUR OFFICE IF YOU ARE EXCESSIVELY STRUGGLING WITH THIS EXERCISE! WE EXPECT SOME MILD STRUGGLE IN THE BEGINNING. THIS PROGRAM HAS SERVED AS A SCREENER FOR SOME PROBLEMS.**

# Exercise 1

## Accommodation

### aka Near-Far Quickness

You will need:

- One Large Near-Far Chart (print from PDF)
- One Small Near-Far Chart (print from PDF)
- Metronome or Metronome App
- Wear your glasses or contacts if you wear them

Tape the larger distance chart on a wall 10 ft away; hold the small chart at reading distance.

With an eye patch, spoon, or your hand, cover your left eye.

Large Near-Far Chart  
@10 ft

Small Near-Far Chart  
@14-16 inches



# Exercise 1


## Accommodation

### Continued...

Set the metronome to 40bpm for the first exercise. This may feel a slow but let's take it easy this first time! You can always speed it up. Always push yourself to higher level thinking.

Cover the left eye. Using the right eye first, clear the first (top left) letter of the **distance chart** and **say the letter out loud**. Then clear the first (top left) letter on the **near chart** and **say it out loud**.

Shift your vision to the next letter/number on the chart at distance then the next one on the near chart, **saying it out loud when it is clear and single**.



T	8	V	J	P	N	Z	3	D	G
C	A	1	E	O	S	B	X	6	Y
R	W	K	4	L	D	9	2	T	7
M	5	D	X	F	H	J	P	A	8
N	3	E	C	S	6	Z	R	1	L
2	Y	B	U	7	D	K	T	V	9
H	F	J	5	N	G	X	A	M	C
R	T	4	V	W	1	N	Y	P	D
C	8	S	X	Z	O	3	U	K	E
F	6	V	L	A	B	G	D	2	R

# Exercise 1

## Accommodation


### Continued...

Keep shifting between the two charts until you have finished them. **Do not use your fingers**, only your vision.

Accommodation is **SPATIAL**, not just focal.

Be aware of the **space** between you and the distance or near chart when focusing. Be aware of moving your focus in space. What's the feeling of releasing focus to look far away? Imagine yourself "throwing" your focus in the distance and pulling your focus in to the near chart.

Internally ask yourself "where in space am I focusing (10ft or 14in)?" and be as precise and quick as possible. You're identifying and localizing items in space volume.




T	8	V	J	P	N	Z	3	D	G
C	A	1	E	O	S	B	X	6	Y
R	W	K	4	L	D	9	2	T	7
M	5	D	X	F	H	J	P	A	8
N	3	E	C	S	6	Z	R	1	L
2	Y	B	U	7	D	K	T	V	9
H	F	J	5	N	G	X	A	M	C
R	T	4	V	W	1	N	Y	P	D
C	8	S	X	Z	O	3	U	K	E
F	6	V	L	A	B	G	D	2	R

# Exercise 1 Accommodation

## Continued...

Repeat the entire exercise for the LEFT eye, then again for BOTH eyes. Complete 1 round per day, 3-5 days per week. When each level is mastered, proceed to the next level.

The goal is you to finish the chart without falling behind at 60 bpm before moving to LEVEL 2.




T	8	V	J	P	N	Z	3	D	G
C	A	1	E	O	S	B	X	6	Y
R	W	K	4	L	D	9	2	T	7
M	5	D	X	F	H	J	P	A	8
N	3	E	C	S	6	Z	R	1	L
2	Y	B	U	7	D	K	T	V	9
H	F	J	5	N	G	X	A	M	C
R	T	4	V	W	1	N	Y	P	D
C	8	S	X	Z	O	3	U	K	E
F	6	V	L	A	B	G	D	2	R

# Exercise 1 Accommodation

## Continued...

Repeat the entire charts for the LEFT eye, then again for BOTH eyes. Complete 1 round per day, 3-5 days per week. When each level is mastered, proceed to the next level.

The goal is you to finish the chart for the right eye, left eye, AND both eyes without falling behind at 60 bpm before moving to the next level.



T	8	V	J	P	N	Z	3	D	G
C	A	1	E	O	S	B	X	6	Y
R	W	K	4	L	D	9	2	T	7
M	5	D	X	F	H	J	P	A	8
N	3	E	C	S	6	Z	R	1	L
2	Y	B	U	7	D	K	T	V	9
H	F	J	5	N	G	X	A	M	C
R	T	4	V	W	1	N	Y	P	D
C	8	S	X	Z	O	3	U	K	E
F	6	V	L	A	B	G	D	2	R

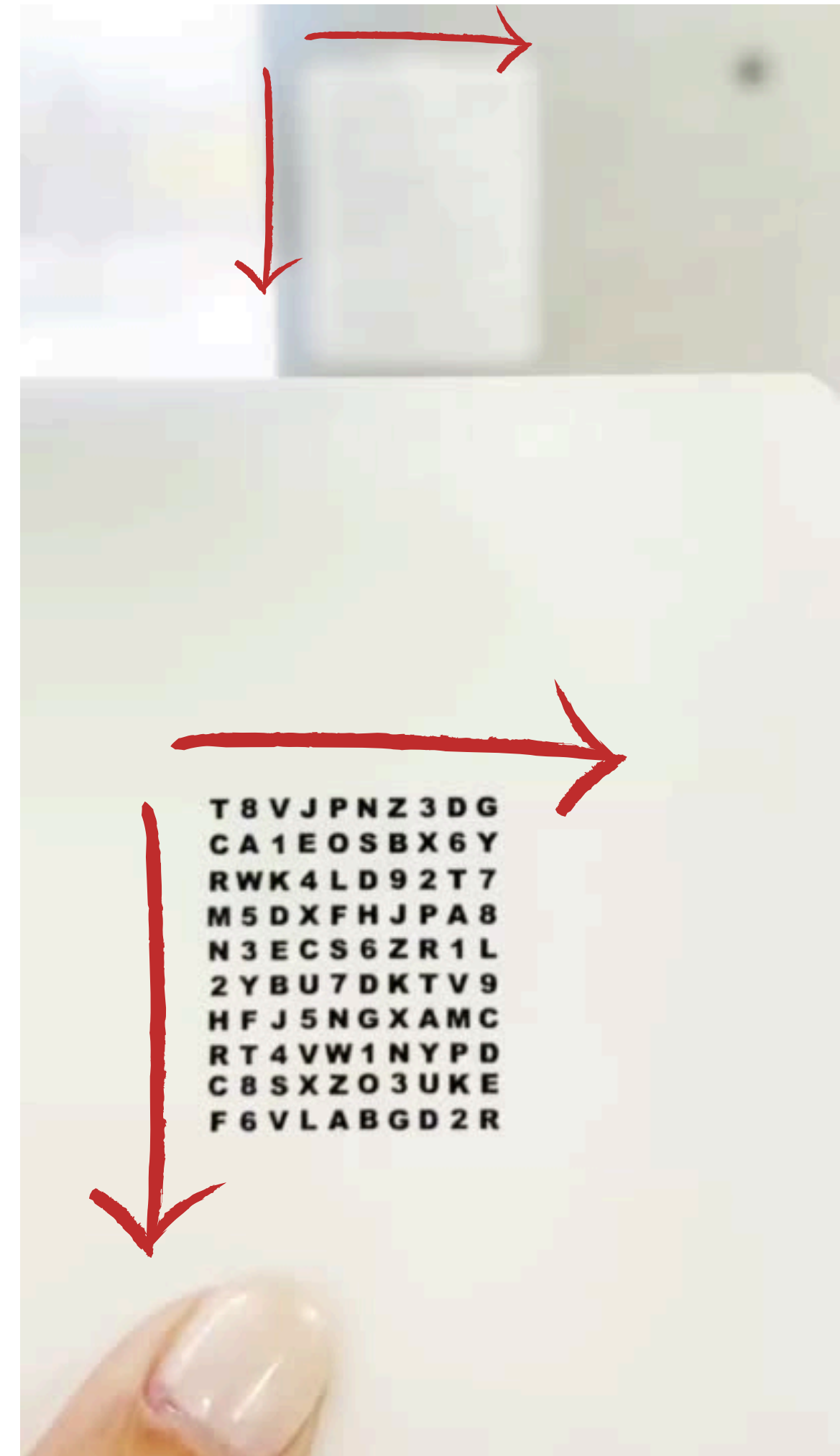
# Exercise 1 Accommodation

## Continued...

### LEVEL 1

- While **standing**, complete the charts reading **left—>right & up—>down** (like you'd normally read a book) without slowing down in the middle or the end of the chart.
- **Read the letters aloud** (this helps vagal tone).

You have mastered this level when you are able to do all of this accurately 60 bpm without slowing down. Proceed to LEVEL 2.



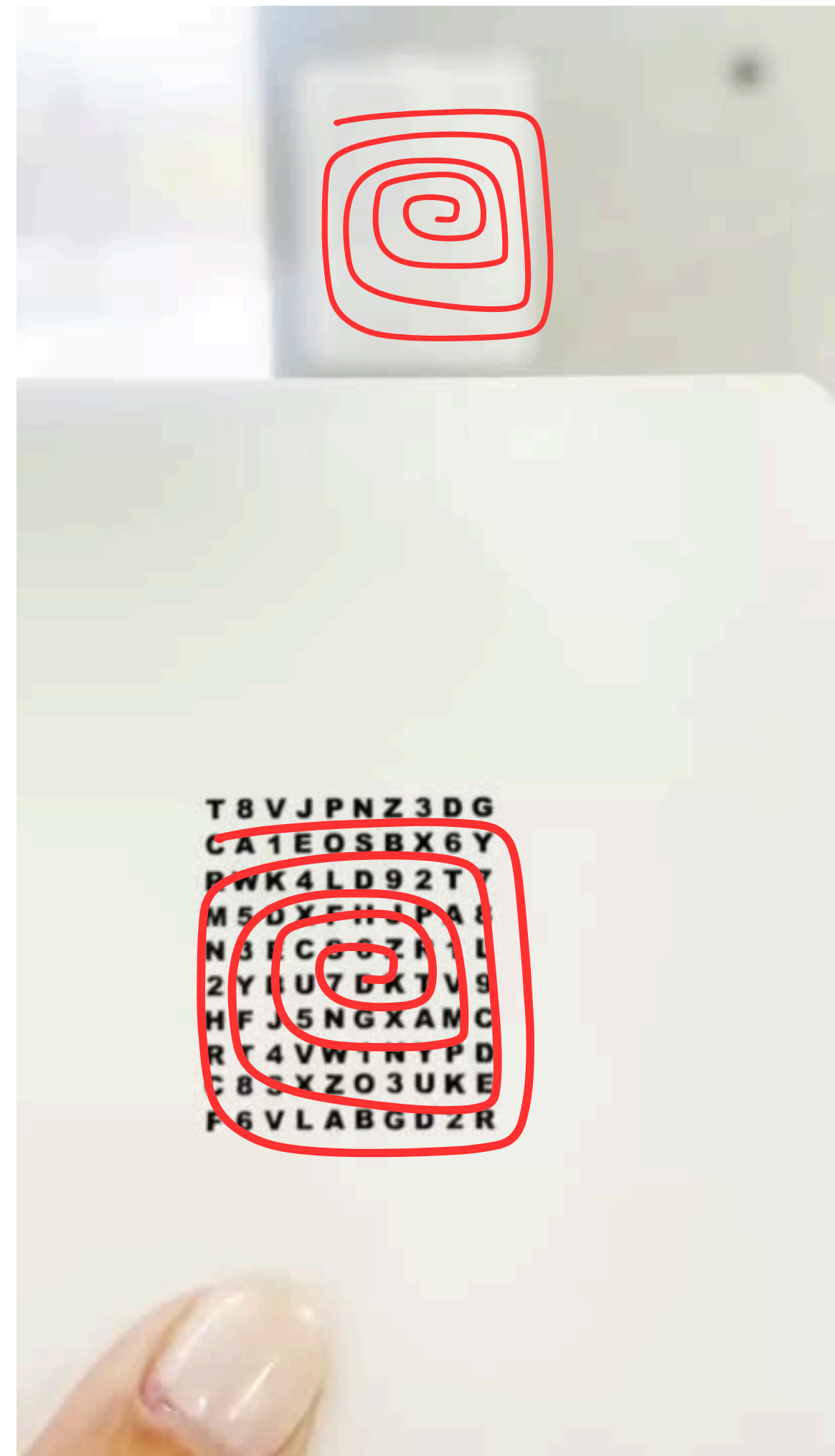
# Exercise 1 Accommodation

## Continued...

### LEVEL 2

- While **standing**, complete the charts reading in a **spiral**.
- Start with outer rectangle of letters, then move in a square, then again, until you reach the very middle.
- Read the letters aloud. Do right eye, then left eye, then both eyes.

You have mastered this level when you are able to do all of this accurately 60 bpm without slowing down. Proceed to LEVEL 3.



# Exercise 1

## Accommodation

### Continued...

#### LEVEL 3

- While **standing**, complete the charts **reading** columns of letters from the top down.
- First jump from the first column to the last, then 2nd column to 2nd last, 3rd/3rd last, 4th/4th last, then at last the two middle columns.
- Read the letters aloud.

You have mastered this level when you are able to do all of this accurately 60 bpm without slowing down. Proceed to LEVEL 4.



# Exercise 1

## Accommodation

### Continued...

#### LEVEL 4

- REPEAT LEVEL 1 (reading right-->left, up-->down), but add:
  - SAYING LETTERS OUT LOUD WHILE PUSHING TONGUE TO TOP OF MOUTH

As you can see in the video, this feels and sounds funny. It's OK to laugh. This helps with polyvagal tone.

You have mastered this level when you are able to do all of this accurately 60 bpm without slowing down. Proceed to LEVEL 5.



# Exercise 1

## Accommodation

### LEVEL 5

- REPEAT LEVEL 2 (reading in a **spiral**), but add **saying the letters aloud with tongue on the roof of your mouth** like in LEVEL 4.

Once you have mastered this level, proceed to LEVEL 6.

### LEVEL 6

- REPEAT LEVEL 3 (reading **columns**), but add **saying the letters aloud with tongue on the roof of your mouth** like in LEVEL 4 & 5.

Once you have mastered this level, proceed to LEVEL 7.



# Exercise 1

## Accommodation

### LEVEL 7

- REPEAT LEVEL 1 (reading right-->left, up-->down), but add:
  - SAYING LETTERS OUT LOUD WHILE ALTERNATING PUSHING TONGUE TO TOP LEFT OF YOUR MOUTH AND TOP RIGHT OF YOUR MOUTH. You may alternate every letter or every other letter.

Again, as you can see, this may feel and sound funny. It's OK to laugh. This is a hack to increase vagal tone.

You have mastered this level when you are able to do all of this accurately 60 bpm without slowing down. Proceed to LEVEL 8.



# Exercise 1

## Accommodation

### LEVEL 8

- REPEAT LEVEL 2 (reading in a **spiral**), but add saying the letters aloud **alternating your tongue on the top left and top right of your mouth** like in LEVEL 7.
- Once you have mastered this level, proceed to LEVEL 9.

### LEVEL 9

- REPEAT LEVEL 3 (reading **columns**), but add saying the letters aloud **alternating your tongue on the top left and top right of your mouth** like in LEVEL 7 & 8.
- Once you have mastered this level, proceed to LEVEL 10.

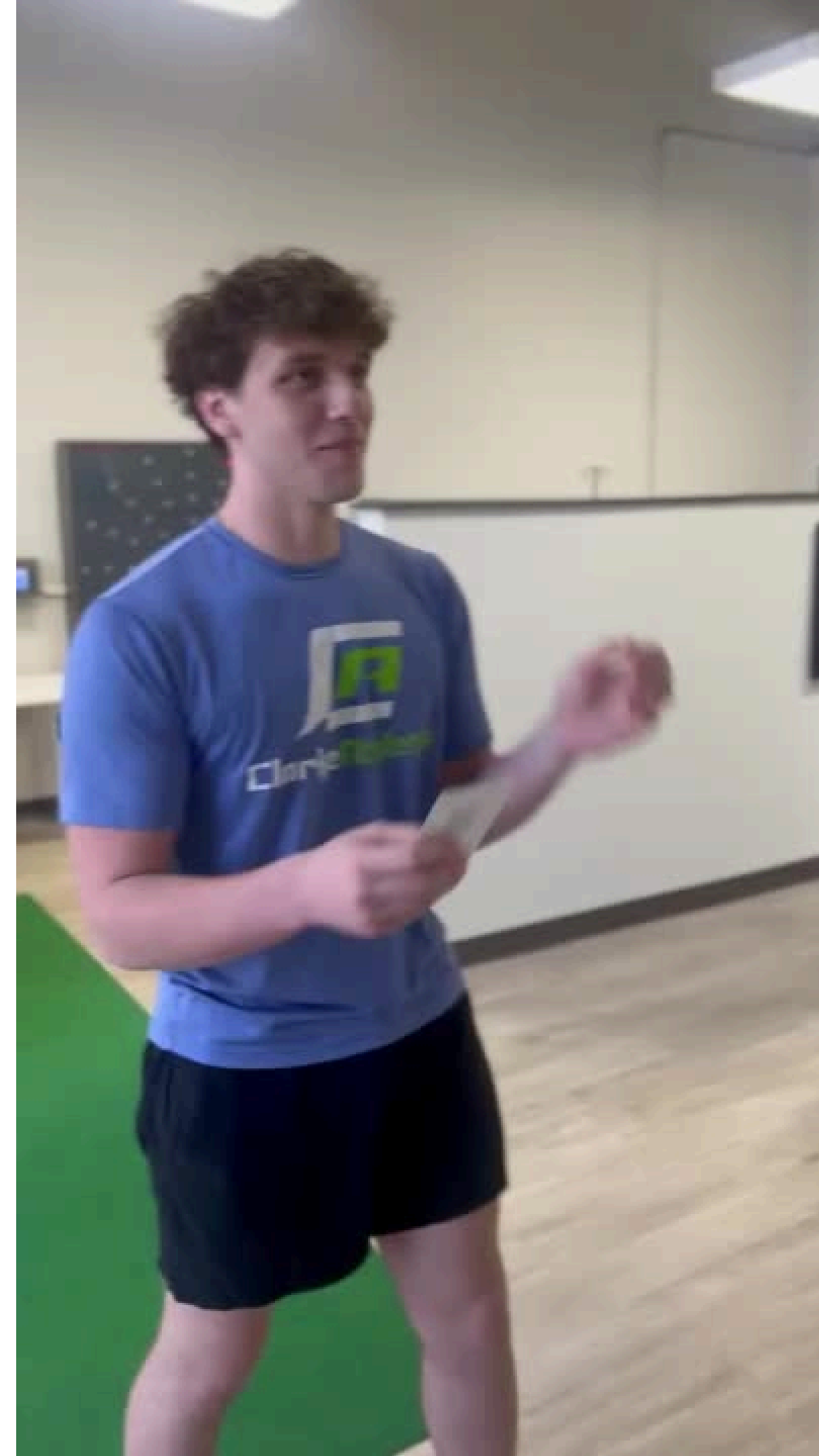


# Exercise 1

## Accommodation

### LEVEL 10

- REPEAT LEVELS 7-9, saying the letters aloud **alternating your tongue on the top left and top right of your mouth every letter or every other letter.**
  - **ADD TURNING HEAD LEFT & RIGHT WHILE YOU SWITCH THE SIDE OF YOUR MOUTH YOUR TONGUE IS.**

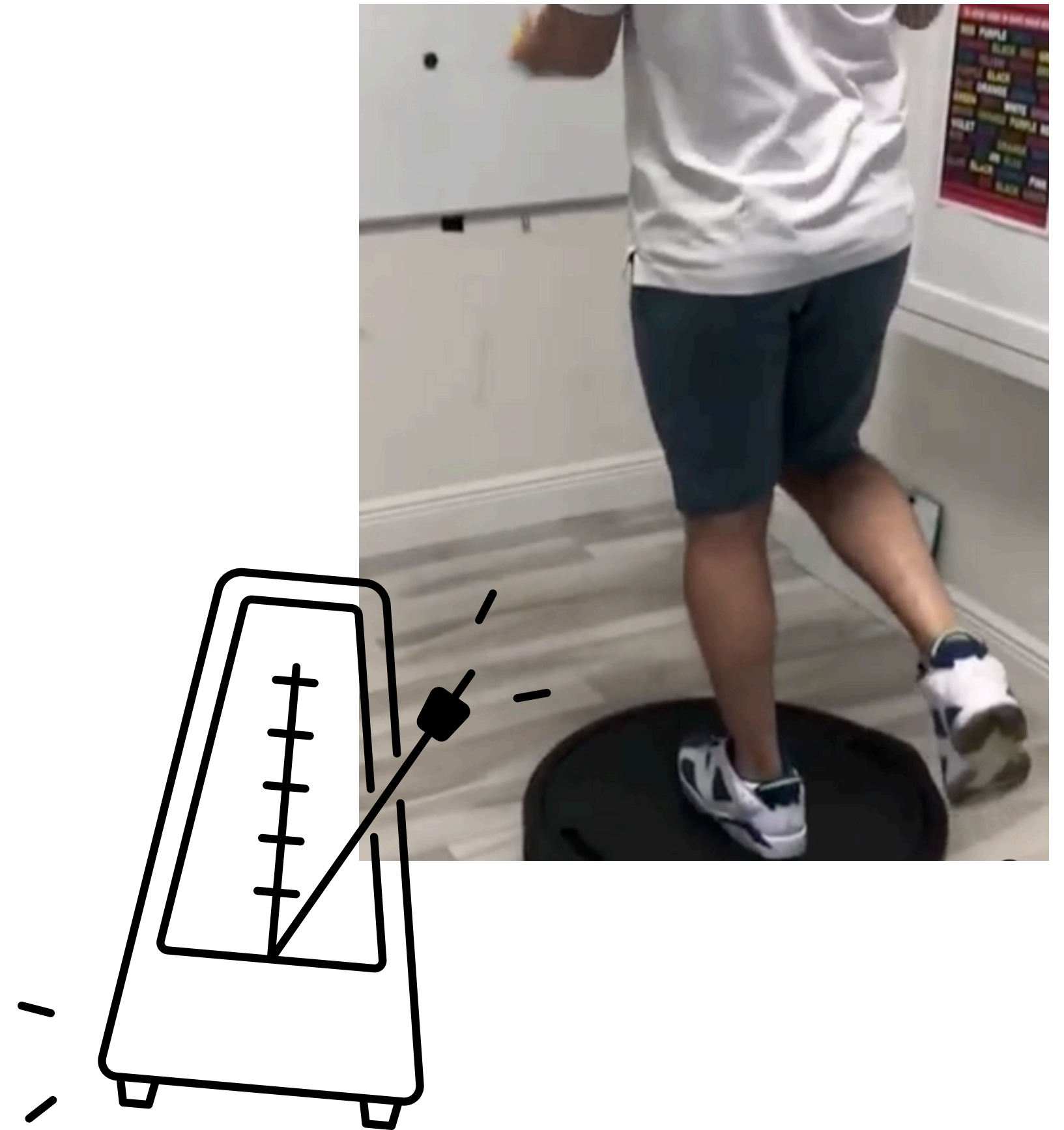


# Exercise 1

## Accommodation

If you complete all 10 levels before the end of the 8 weeks (or if you want to continue on afterward), **repeat LEVEL 10 ADDING CORE ENGAGEMENT**, such as standing on a bosu ball, standing on one leg, riding a stationary bike, or planking. Proceed to the next level once mastered.

If you master THAT before 8 weeks (or if you want to continue on afterward), repeat the levels with core engagement and **increase the metronome** (start at 60bpm, then 70bpm, then 80bpm, 90bpm, 100, 110, 120 etc.).





## **EXERCISE 2: BINOCULAR ALIGNMENT & DEPTH PERCEPTION**

Depth perception is more than just seeing things in time and space. It's identification of the ventral stream system, better fine motor and completing motor tasks (aka eye hand coordination), and quicker and more accurate cognitive information. It's a measure of overall BINOCULAR SUMMATION IN THE BRAIN.

Your right eye and left eye when used together well is more than just the sum of its parts.  $1 + 1 > 2$ . You're getting more signal in your visual cortex when you have good binocularity. More cells are firing. On the flip side, if you have poor binocularity your visual output (eye hand and general coordination and learning) will be reduced.

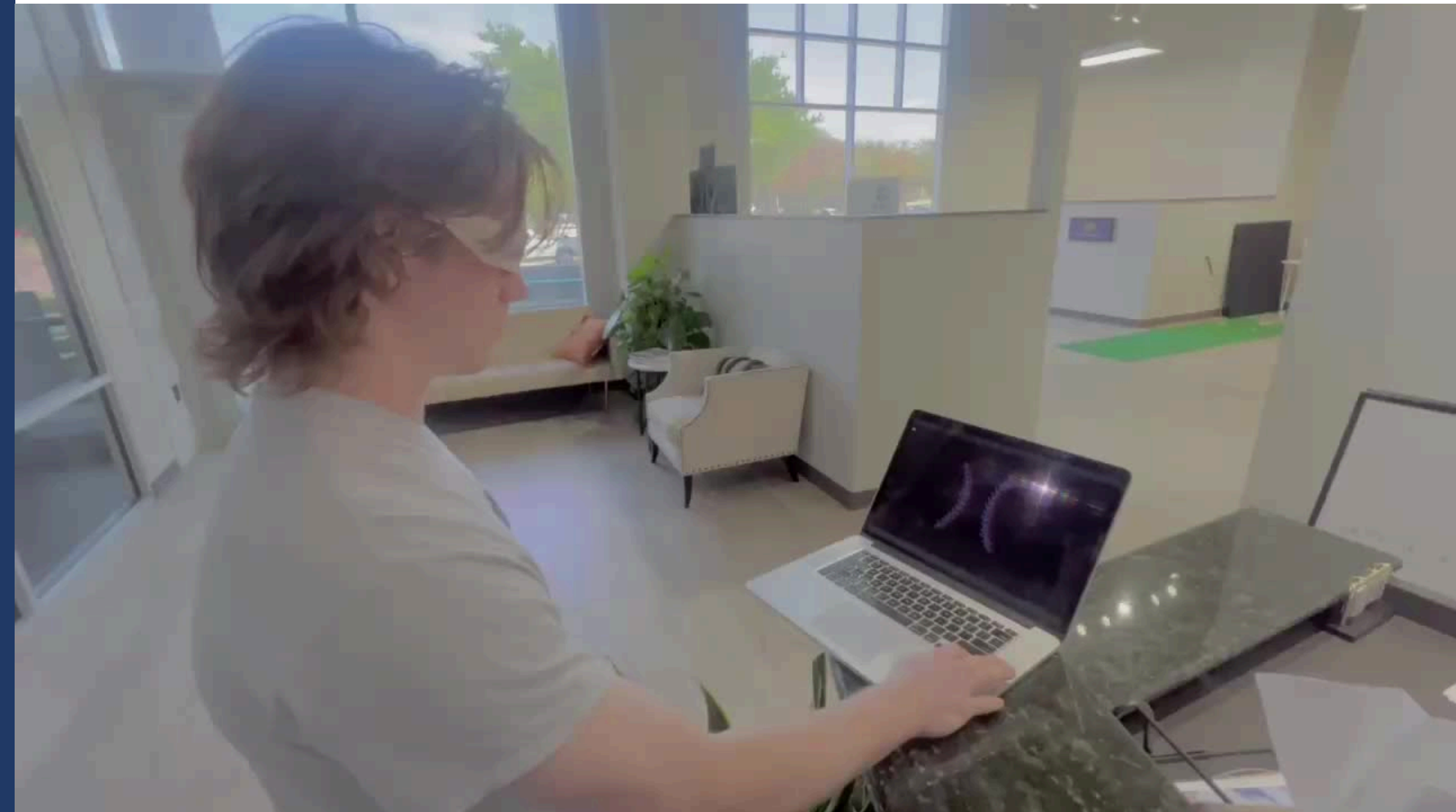
# Exercise 2

## Binocular Alignment

### For Depth Perception

You will need:

- One pair of red-blue glasses
  - Wear behind your glasses if you wear them
  - Wear over your contacts if you wear them
- A computer screen or tablet preferred, if the only screen available is a phone that is better than nothing
- TURN YOUR BRIGHTNESS ALL THE WAY UP



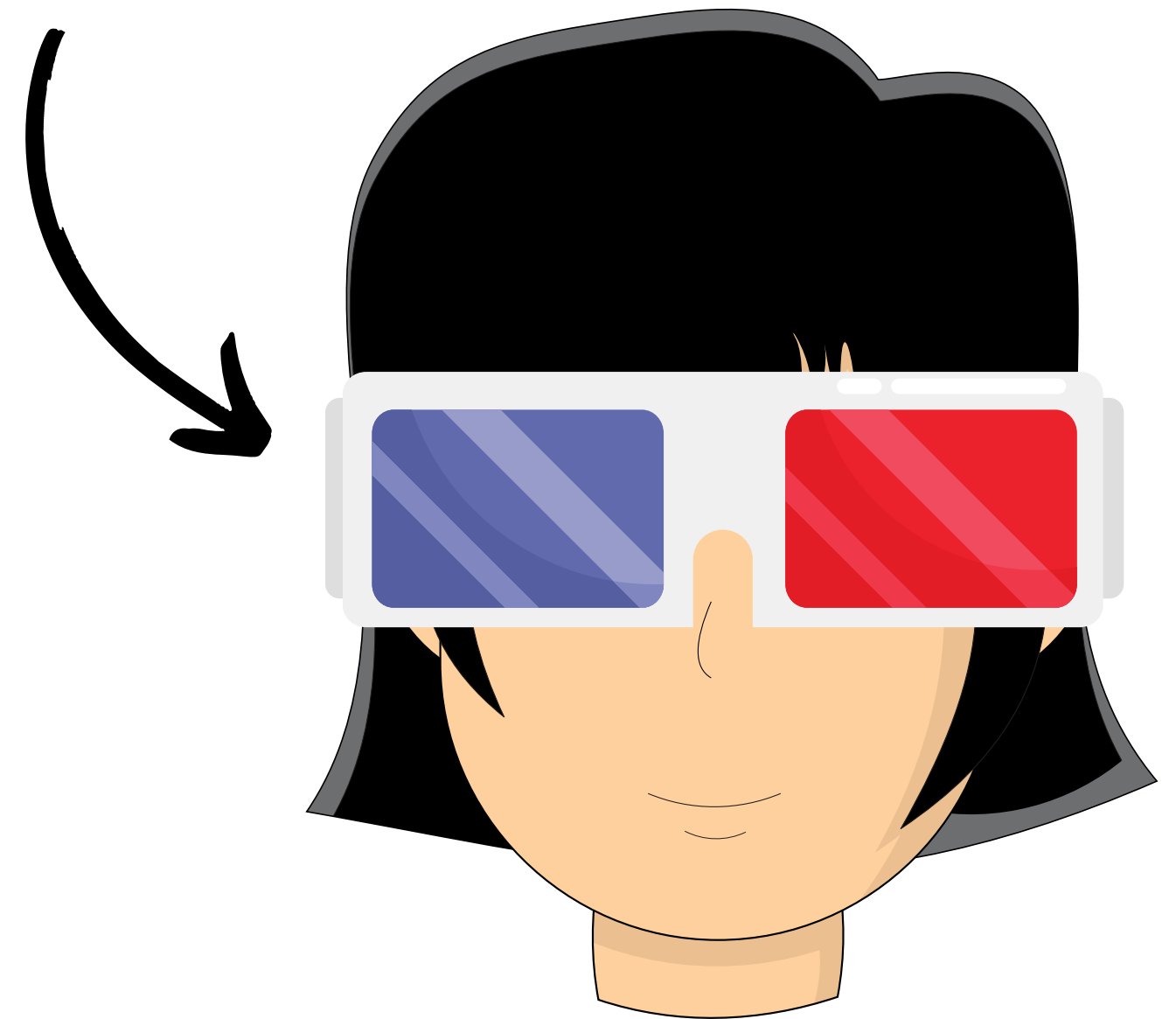
# Exercise 2

## Binocular Alignment

### DIVERGENCE

- Click the link in your email entitled "DIVERGENCE." The presentation should fill up the full screen.
- Put the red/blue glasses on **with the BLUE lens over the RIGHT eye.**
- Screen with the 4-dot test first. If you see 3 or 5 dots, contact Dr. Bailey's office. Then on the next slide make sure you are observing just ONE image. If you are seeing two images, contact Dr. Bailey's office.
- If you are unable to do this exercise or if it makes you feel sick, contact Dr. Bailey's office. Sometimes kids with color deficiencies struggle, or if they have a binocular misalignment, struggle with this.

**BLUE OVER RIGHT**

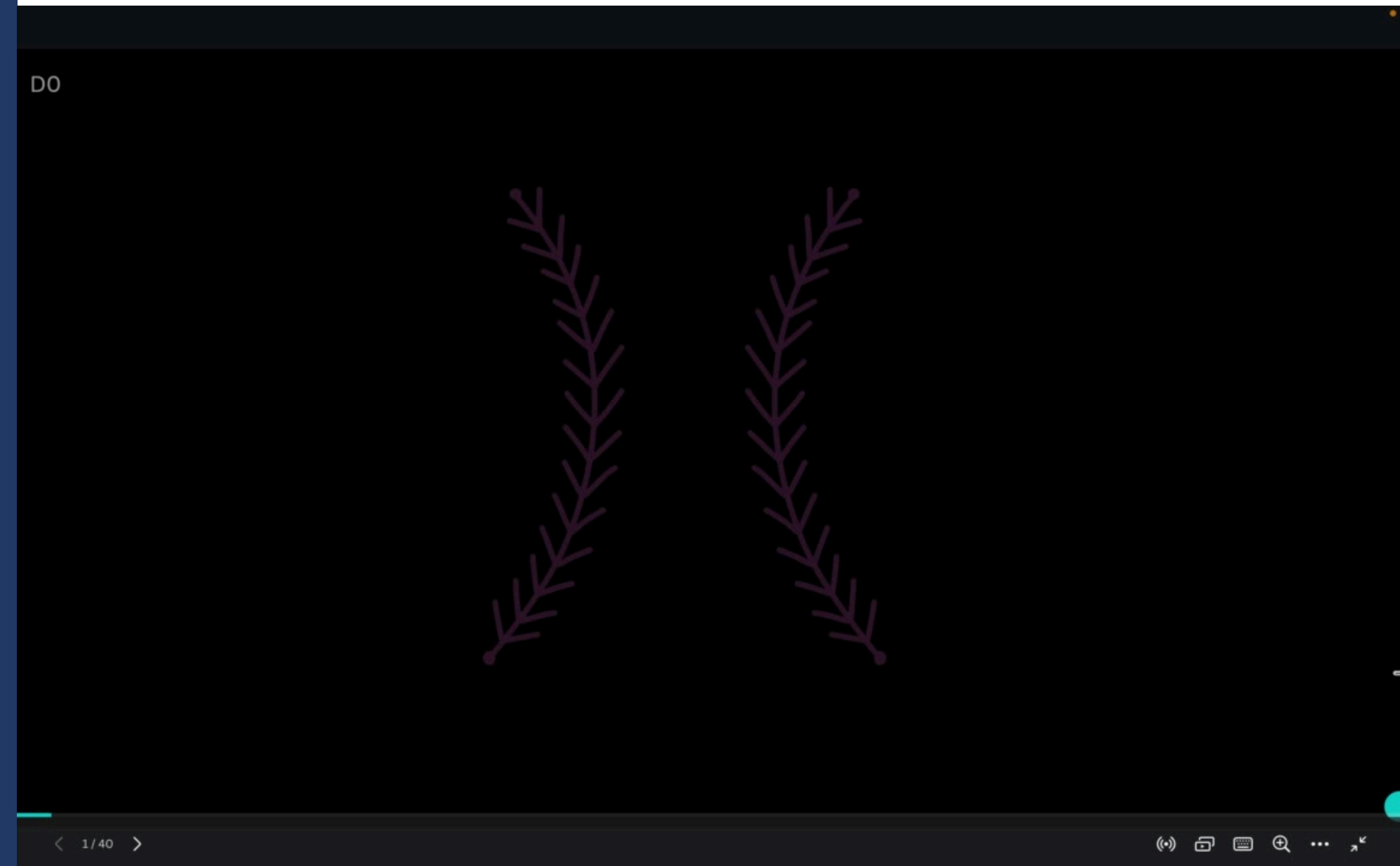


# Exercise 2

## Binocular Alignment

### DIVERGENCE

- Click the right arrow on your keyboard or take your mouse and click the right side of the screen to go to the next slide.
- The images on the screen separated a little, but with the red/blue glasses you should be able to fuse them into one single image.

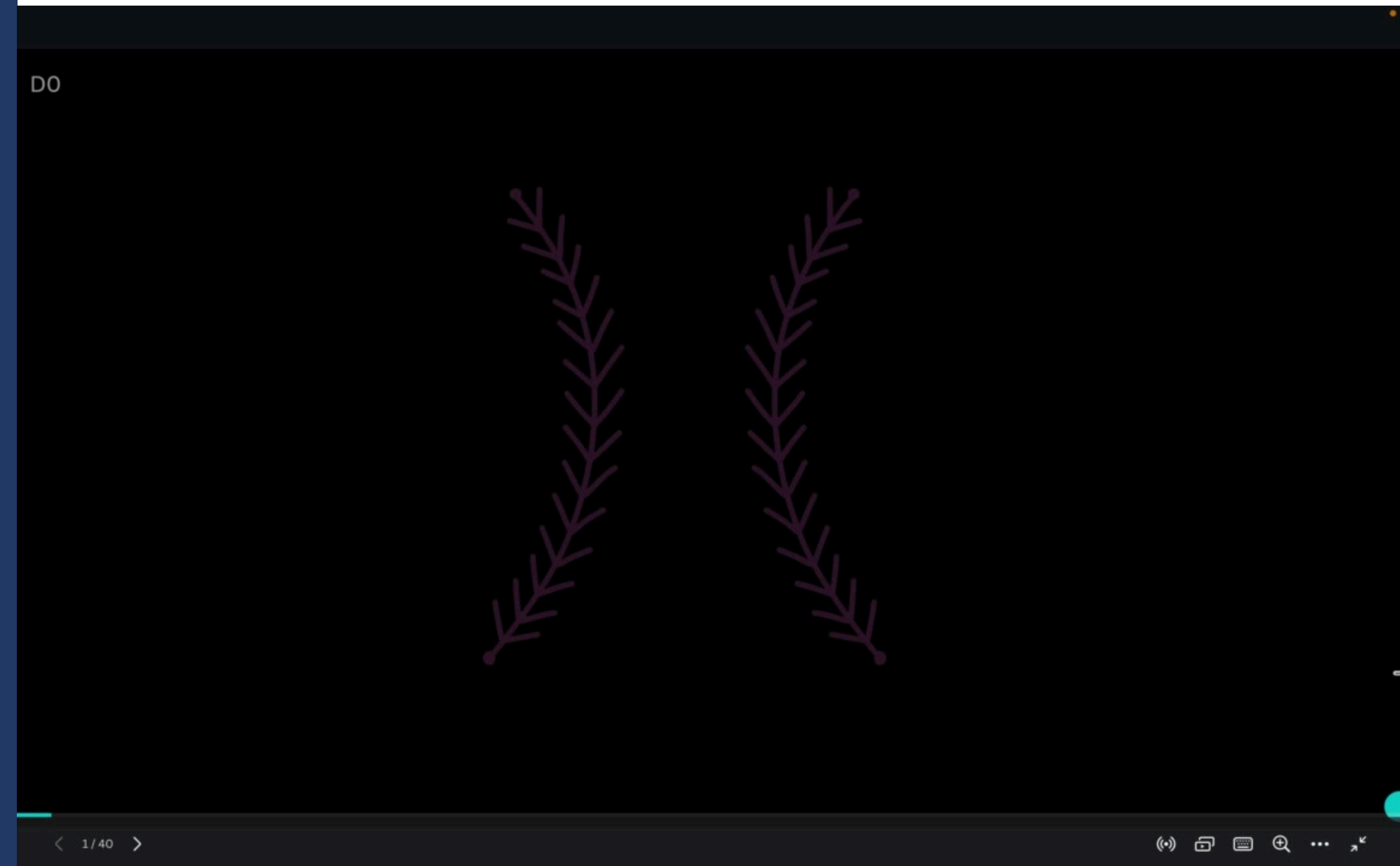


# Exercise 2

## Binocular Alignment

### DIVERGENCE

- Fusion is obtained when you see one image flickering red and blue.
- Once fusion is obtained, hold the image single for 5 seconds.
- Proceed to the next slide. This slowly and gradually moves the images further apart on the screen and makes fusion more difficult. Easy does it!
- Once fusion is obtained, hold the image for 5 seconds then proceed to the next slide again.

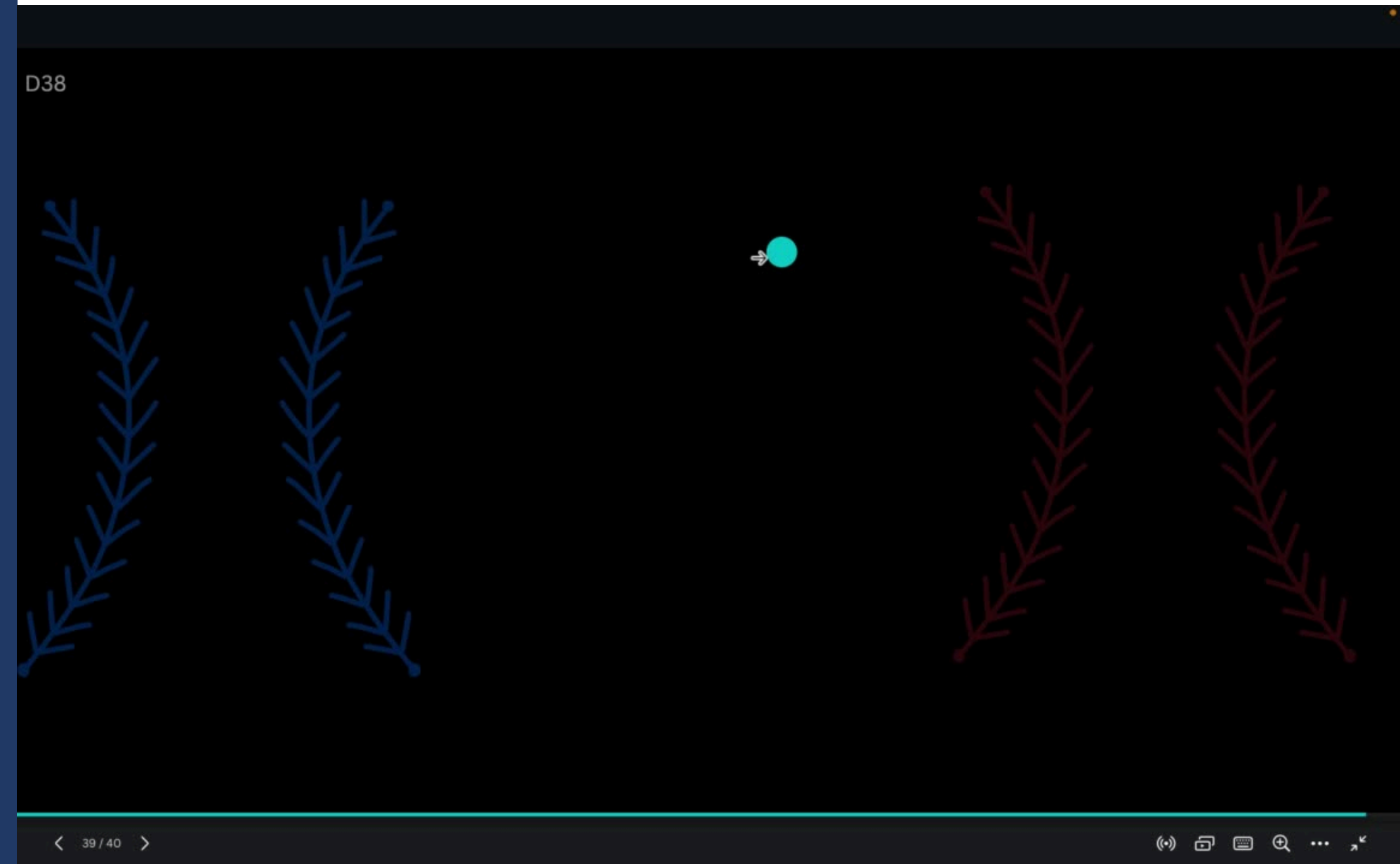


# Exercise 2

## Binocular Alignment

### DIVERGENCE

- Slowly move the images apart as mentioned before until fusion is lost.
  - Fusion is lost when you no longer see one red/blue flickering image, but you see two images (one red one blue) OR one image that is only red or only blue.
  - This is the "break" point.
  - NOTE THE D# (top left) of your break point ON YOUR LOG AT THE END OF YOUR WEEK.

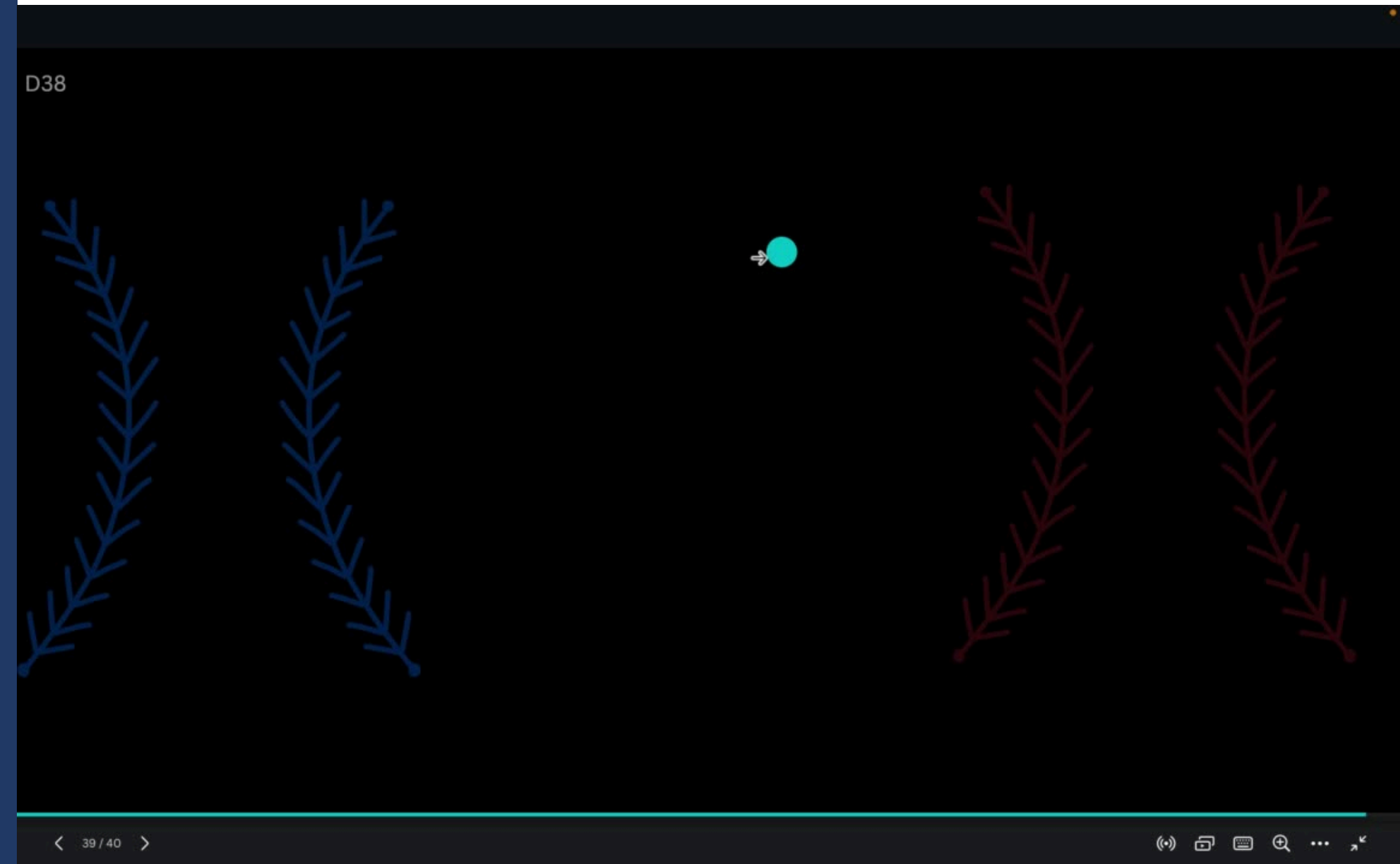


# Exercise 2

## Binocular Alignment

### DIVERGENCE

- When fusion is lost, try relaxing your eyes and opening your periphery to fuse the two images again.
- Once fusion is lost and unable to be regained, slowly move the slides backward (by clicking left or on the left side of the screen) to make the images come closer together.
  - When fusion is regained, hold for 5 seconds.

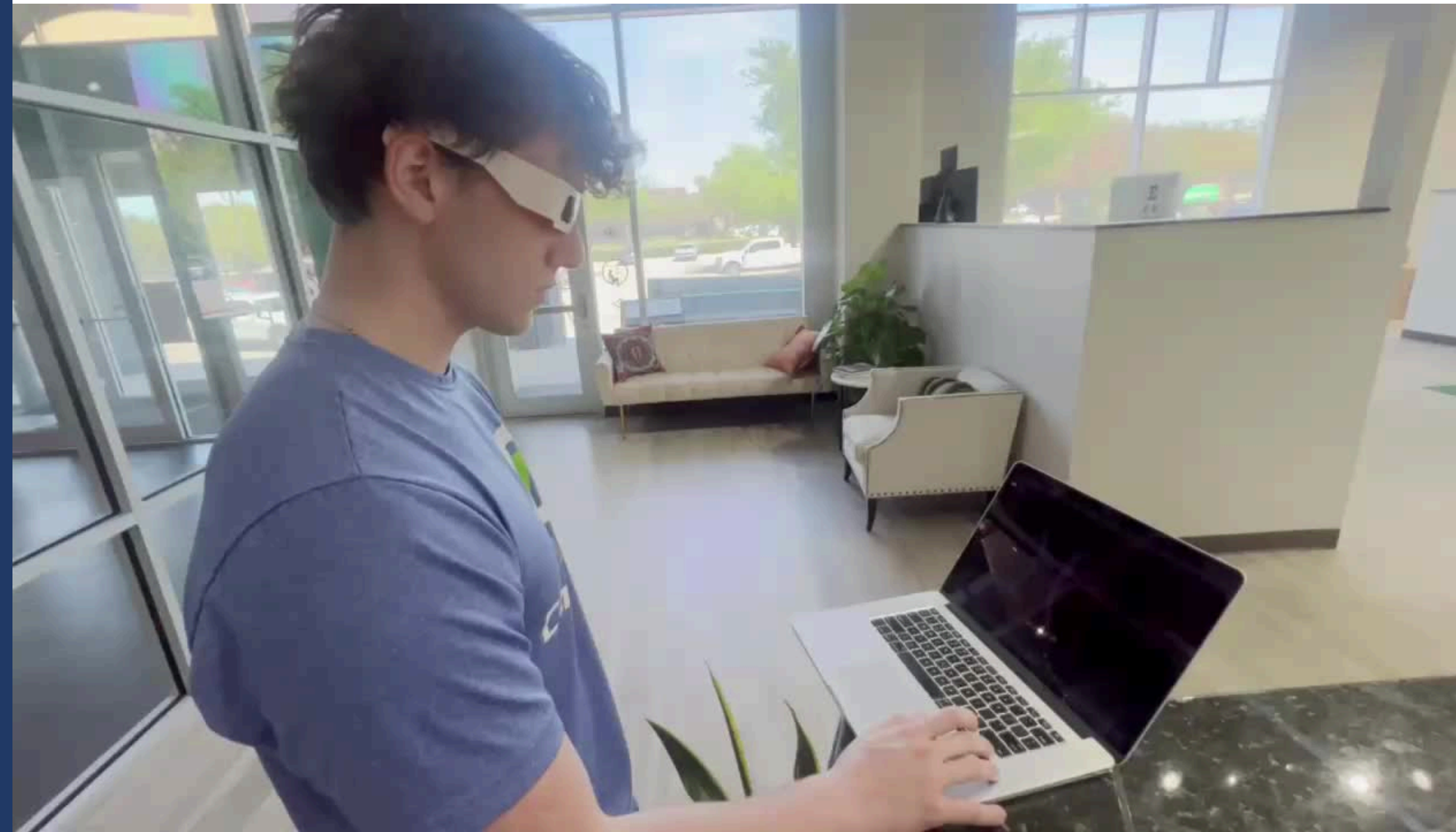


# Exercise 2

## Binocular Alignment

### CONVERGENCE

- Repeat the same process you did for DIVERGENCE except for CONVERGENCE.
- Do one round of both exercises once daily, 3-5 days/week.
- Try to increase your ranges a little bit every day or two! Easy does it!





## **EXERCISE 3 : PERIPHERAL AWARENESS**

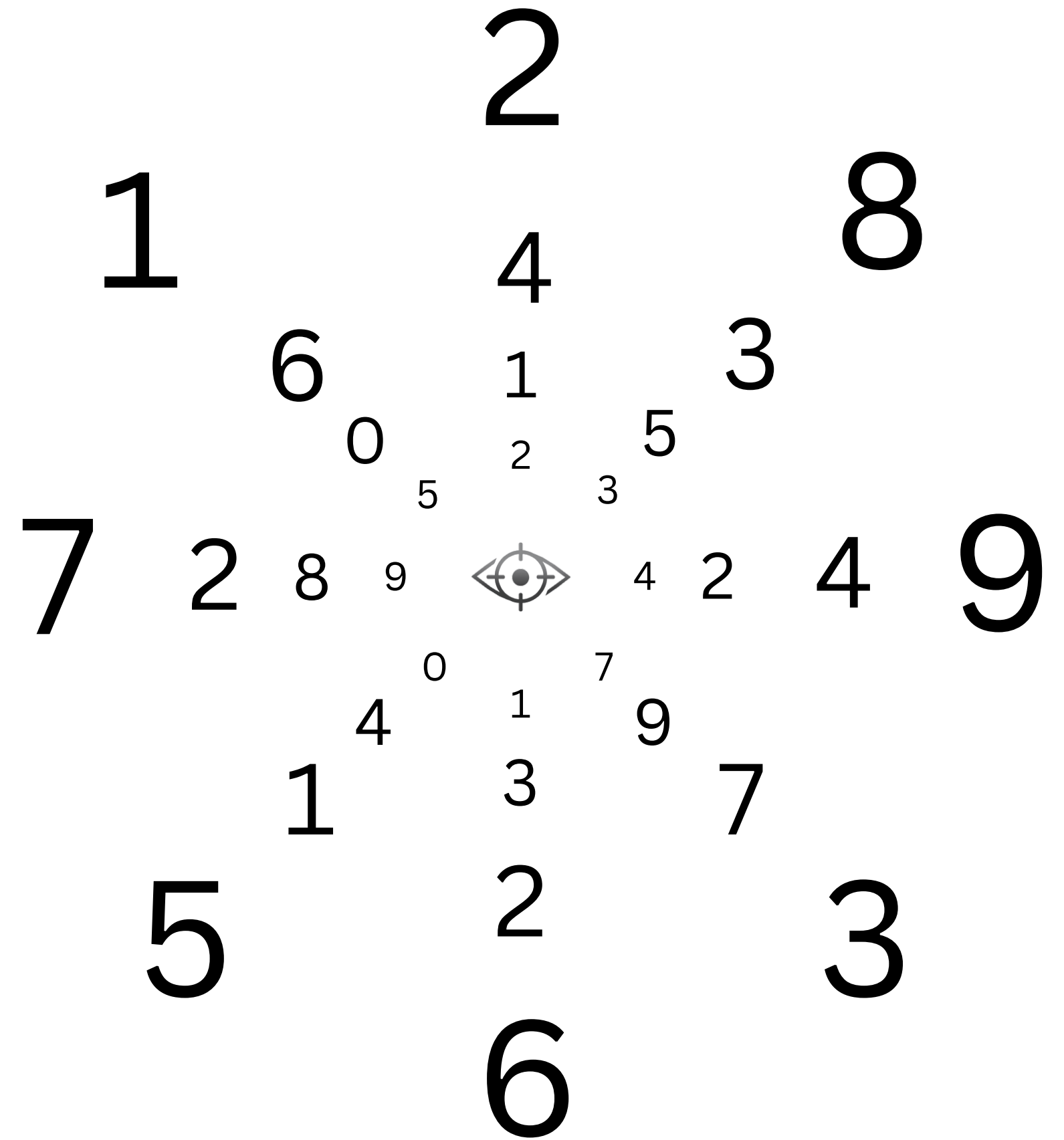
When the periphery is open, we make better eye movements.  
A collapsed periphery is a big problem with loss of localization  
and eye movement.

# Exercise 3

## Central-Peripheral Integration

You will need:

- One of the Peripheral Awareness Charts (printable from PDF)
- Wear your glasses or contacts if you wear them



# Exercise 3

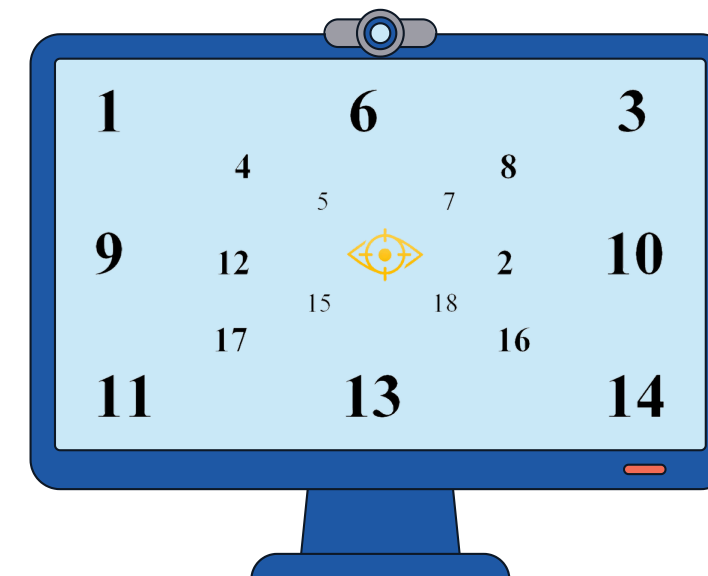
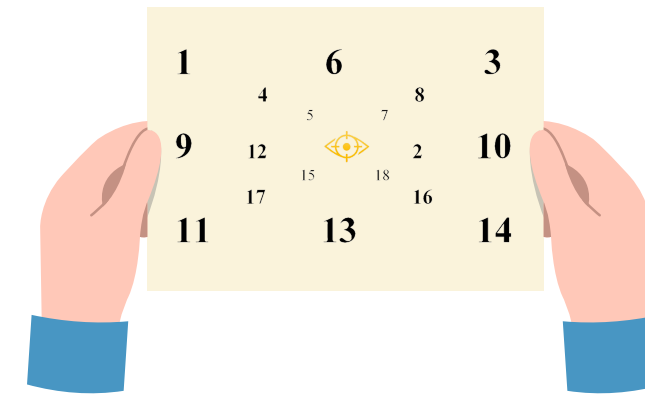
## Central-Peripheral Integration

### LEVEL 1

Start with the SVI PA Chart.

At a distance of about 16 inches in front of the page stare directly at the SVI Target. It's important you look only at the logo and resist the urge to look at the numbers in the periphery.

Without moving your head or eyes, look at the SVI LOGO while finding the numbers in order (1-18) using your side vision.



# Exercise 3

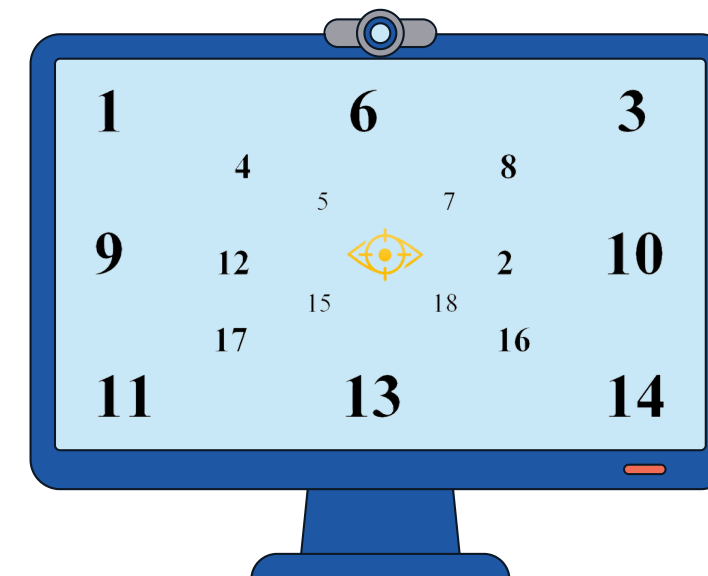
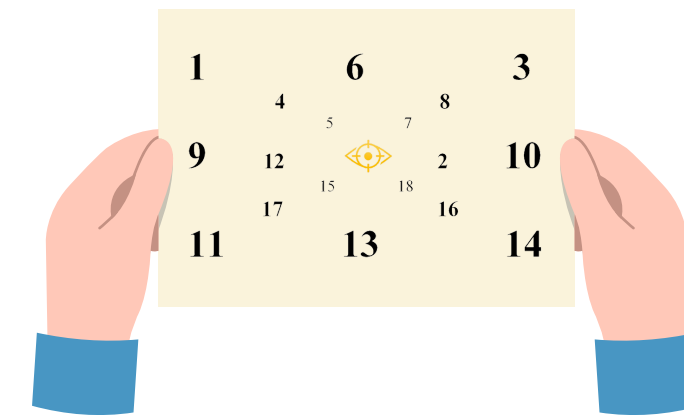
## Central-Peripheral Integration

LEVEL 1 continued...

Do only one session/day.

You have completed this level after 3 sessions. I don't want you to memorize it!

Proceed to LEVEL 2 after 3 sessions.



# Exercise 3

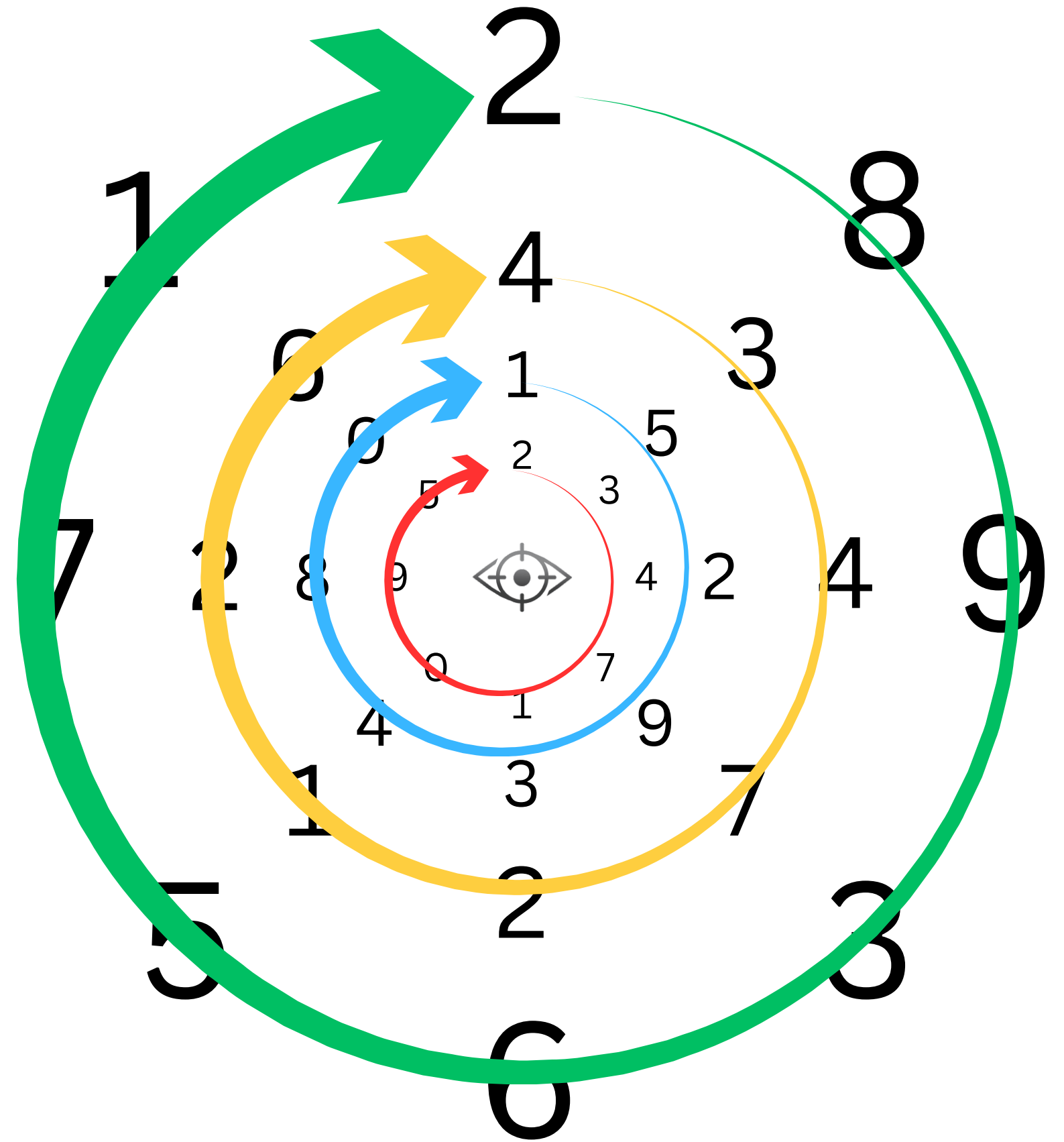
## Central-Peripheral Integration

### LEVEL 2

Print the other Peripheral Awareness charts.

While looking at the SVI logo in the middle, without moving your head or eyes away from the logo, get all the numbers in the inner circle in focus at the same time. They will all pop. Do any of numbers/letters disappear? Keep that level of periphery open and identify the numbers/letters within the most inner circle, using only your periphery. Never look away from the center logo.

Move outward to the next circle. Keep moving outward, identifying the numbers/letters using only your periphery, until the chart is complete.



# Exercise 3 Central-Peripheral Integration

LEVEL 2 continued...

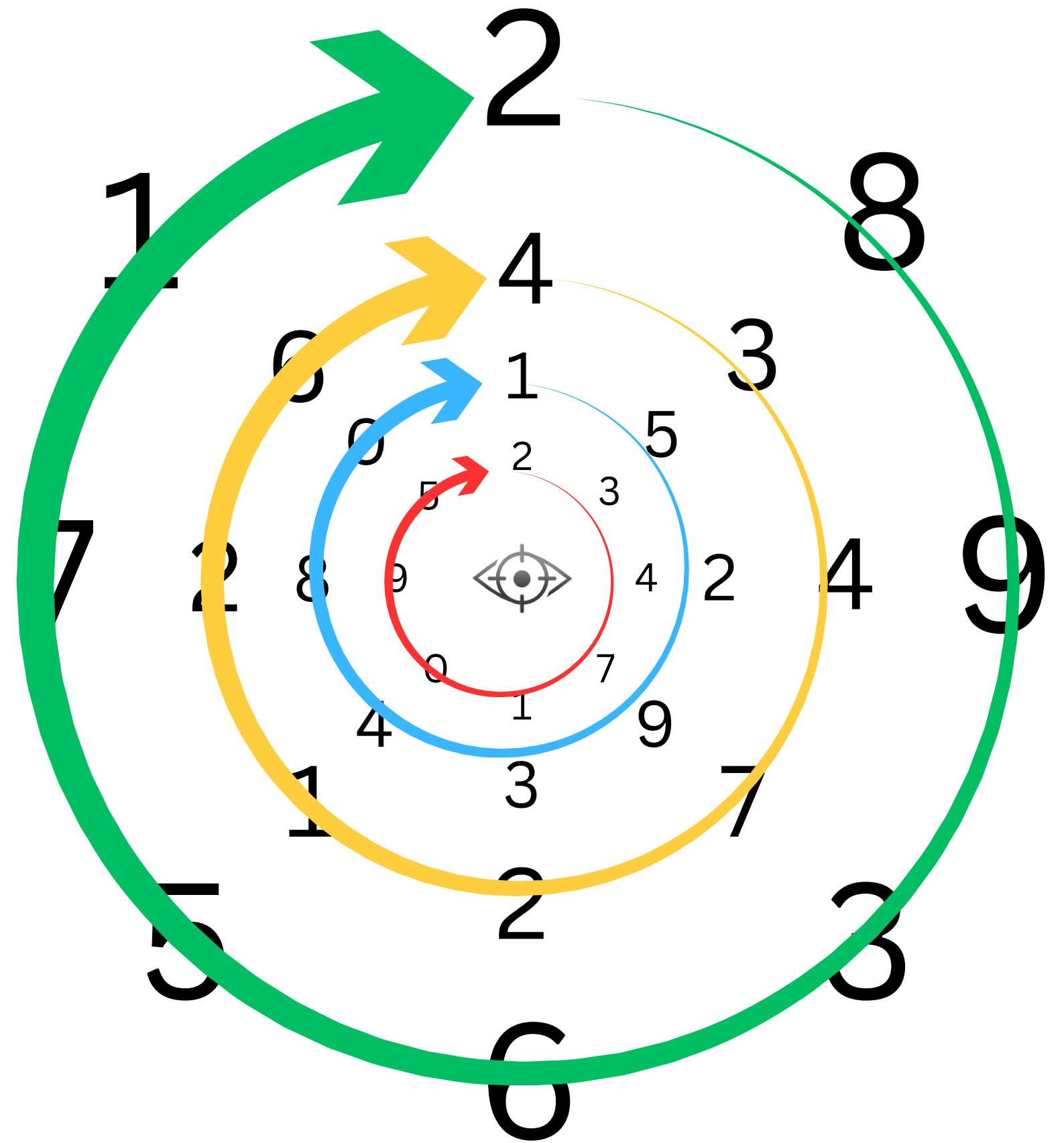
Complete 3 sessions of each of the following charts.

Letters

Numbers

Letters & Numbers

Once they are all completed 3x, proceed to LEVEL 3.



# Exercise 3

## Central-Peripheral Integration

### LEVEL 3

Complete 3 Sessions of all the charts (SVI Logo, Letters, Numbers, and Letters & Numbers) **while engaging your core.** You may stand on one leg at a time, ride a stationary bike, stand on a Bosu ball, plank, etc.

If you complete LEVELS 1-3 before the end of the 8-12 week period, feel free to repeat LEVEL 3 just once a week.





## **EXERCISE 4**

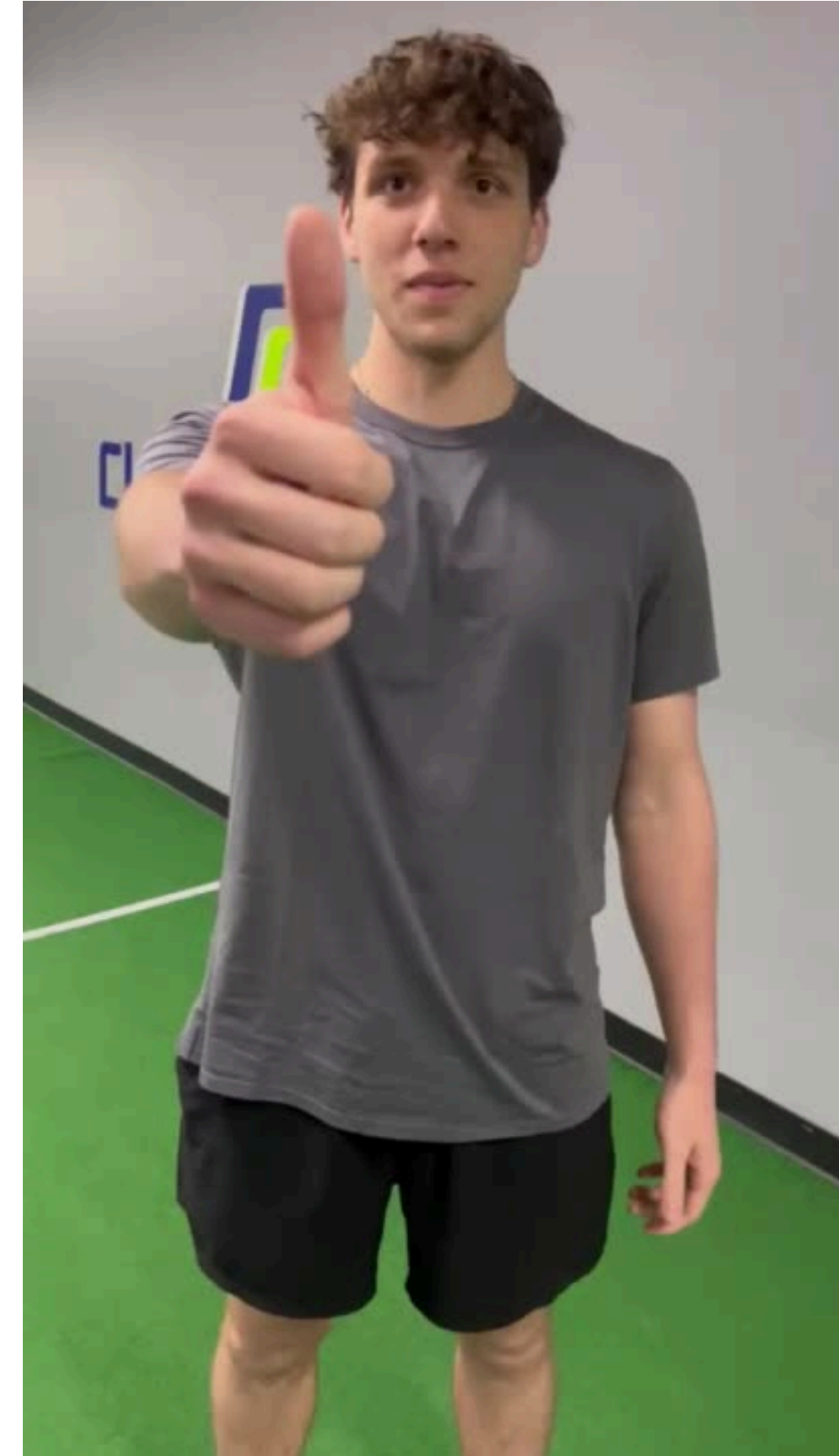
# **VESTIBULAR OCULAR REFLEX**

# Exercise 4

## Vestibular-Ocular Reflex

You will need:

- Nothing!
- Use your glasses or contacts if you wear them

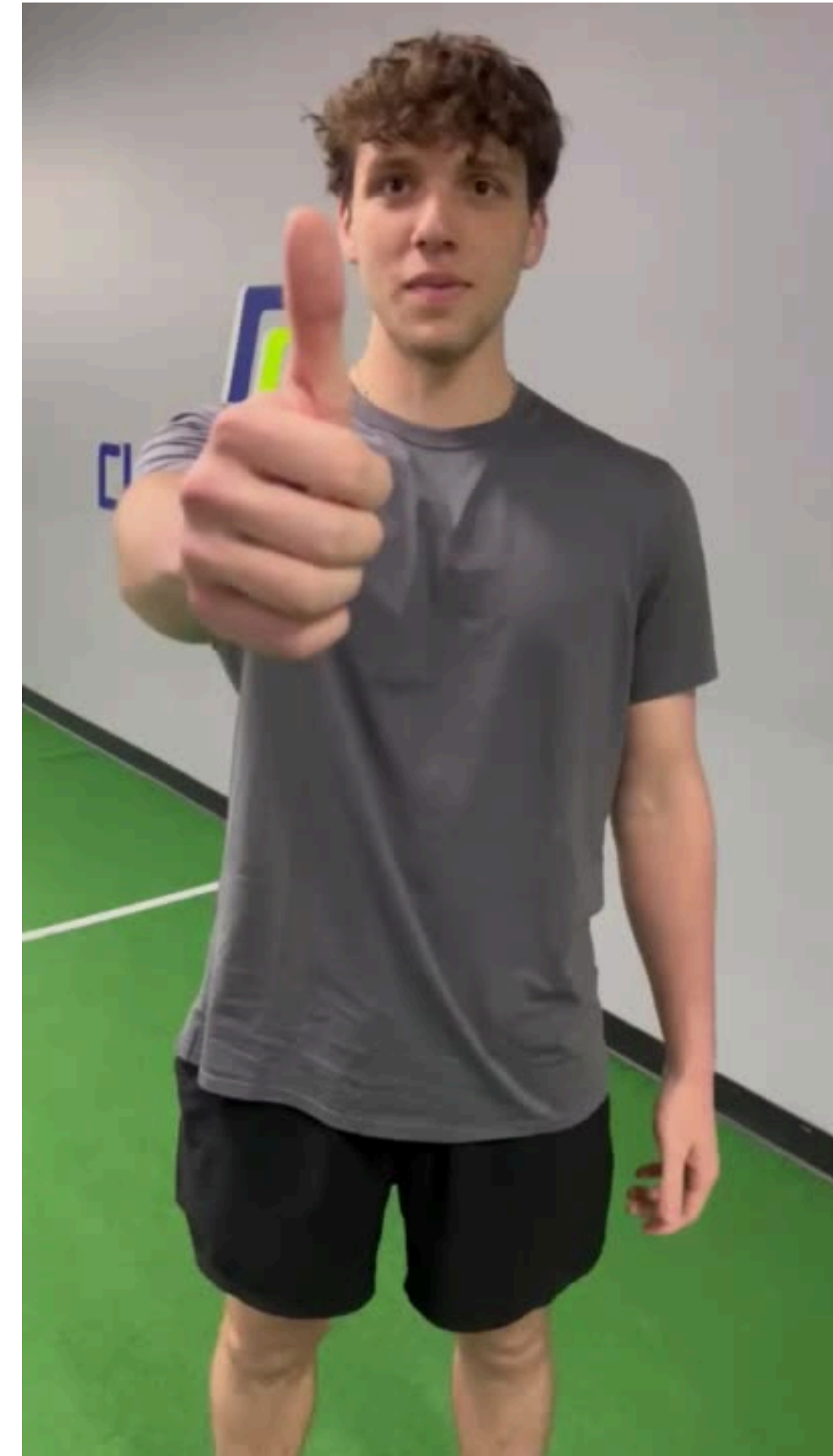


# Exercise 4

## Vestibular-Ocular Reflex

### LEVEL 1

- Simply look at a fixed object in the distance (such as a **doorknob**) or hold your **thumb** out in front of you. Fixate on the target.
- Start **nodding your head “no,”** never looking away from the target, keeping it single and clear. Start with small, slow  $10^\circ$  nods and slowly increase the range and speed of head rotation. Aim for turning your head wider and faster over time. Do **20 cycles** (one cycle being one full nod left and right).
- When you feel this level is mastered, proceed to LEVEL 2.

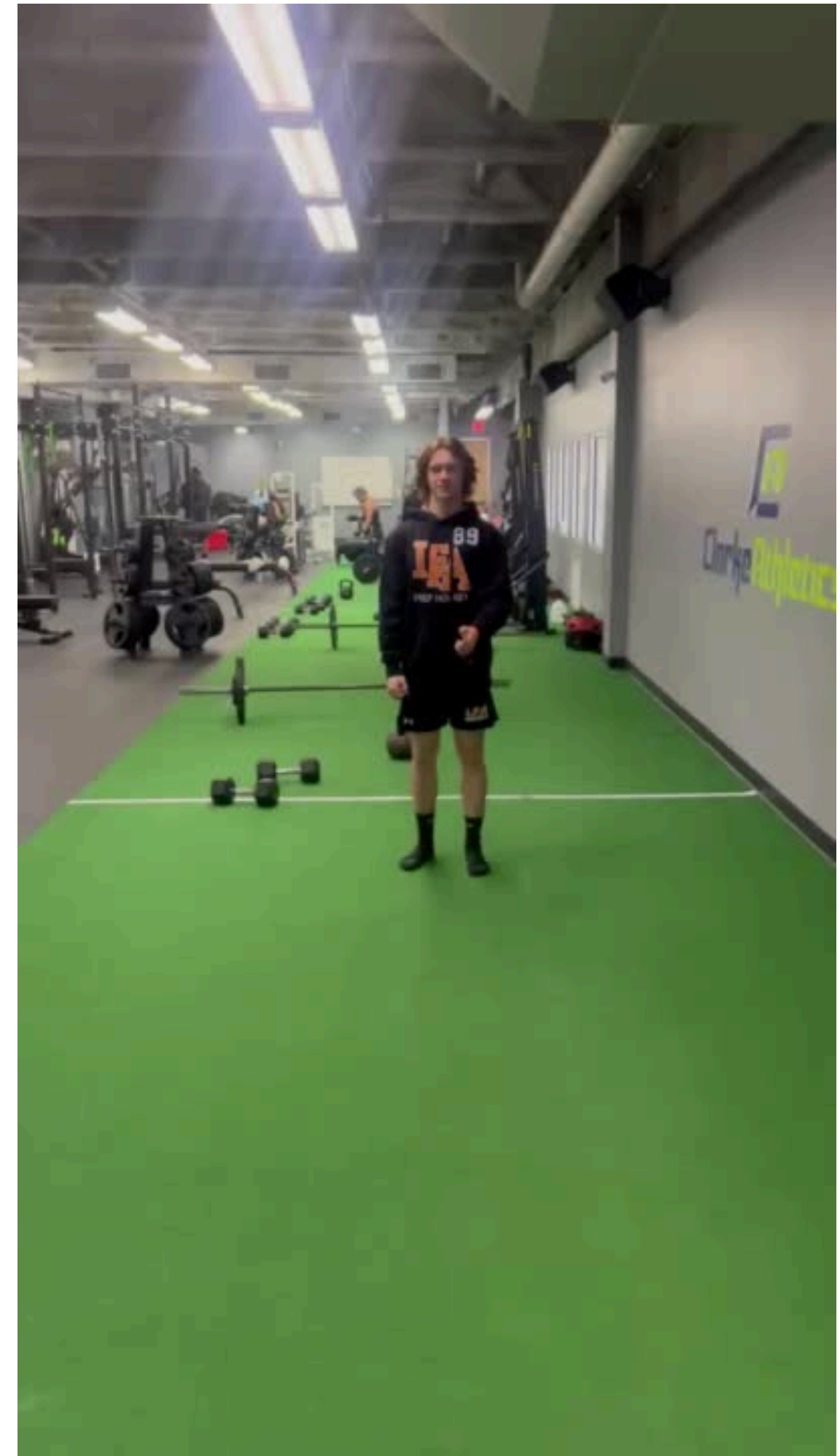


# Exercise 4

## Vestibular-Ocular Reflex

### LEVEL 2

- Do the same thing you did in LEVEL 1
  - ADD WALKING
  - Find a space where you can walk without running into anything or tripping over anything.
  - Do 20 successful nods "no" left and right.
- When you feel this level is mastered, proceed to LEVEL 3.



# Exercise 4

## Vestibular-Ocular Reflex

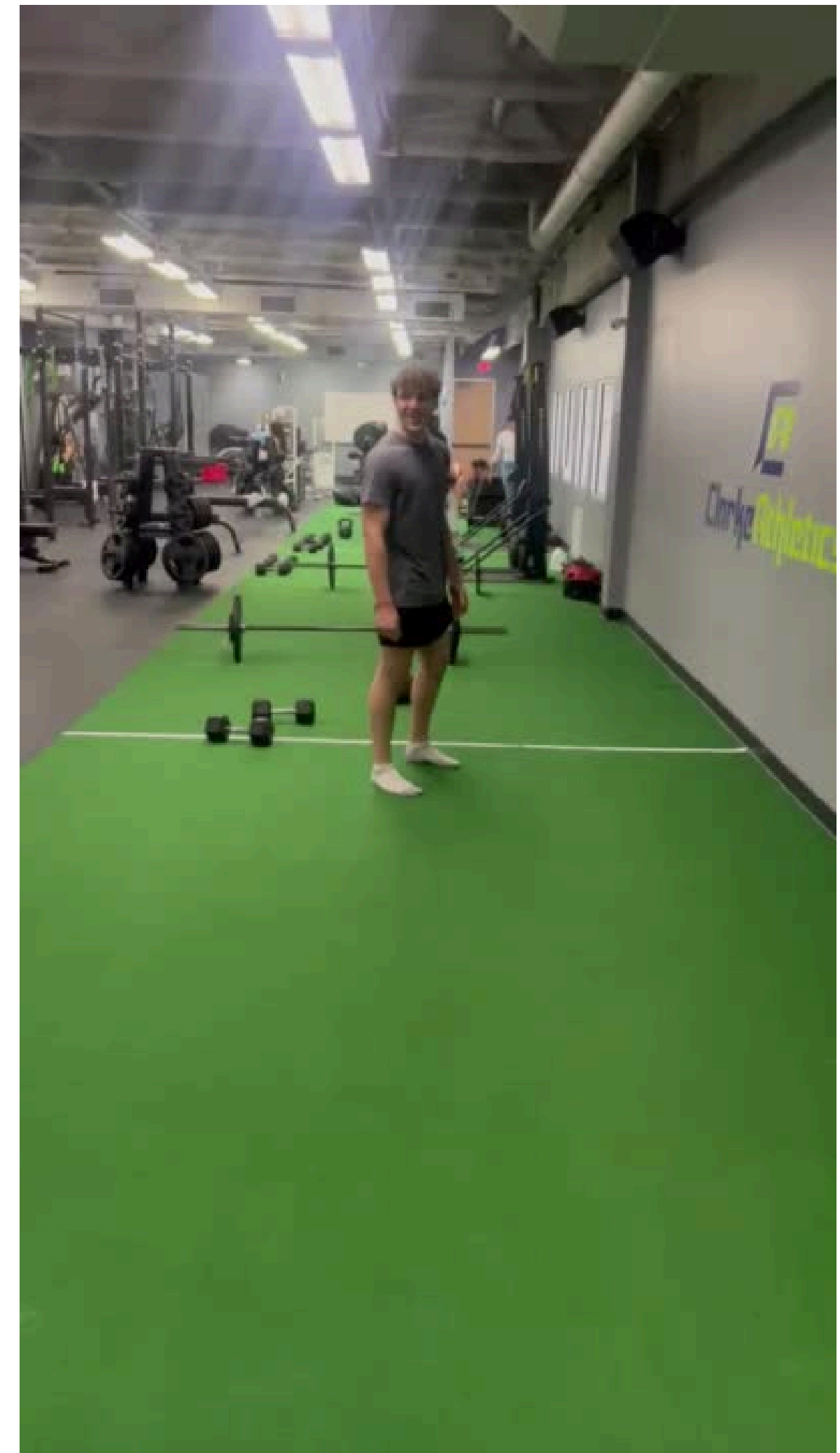
### LEVEL 3

- Lay on your back on the ground where you have plenty of room to make a snow angel.
- Find a target to look at directly above you, such as something on a ceiling fan, a smoke alarm, a light bulb (that is turned off), etc.
- **Do snow angels.** Pay attention to your awareness of where your hands, arms, legs, and feet are in space. Once you feel your coordination is perfect, **add nodding "no" left and right while maintaining your fixation on your target above you.** Do **25** snow angels while nodding "no" and maintaining fixation.



## Exercise 4 Vestibular Ocular Reflex

Once you have mastered all 3 levels, do one of the Vestibular Ocular Reflex exercises once a week.





Keep Track  
of your Progress  
in the table  
provided in the  
PDF

V3 ATHLETE THER

NAME: *Lauren*  
AGE: *38*  
SPORT(S): *tennis*  
POSITION(S):  
GOALS: *improve control and footwork*

UNDERSTANDING  
DOWNLOADED  
AM: ☒ N  
PECT: ☒ N  
OMMIT: ☒ N  
OR BACH: ☒ N

STATS THAT MATTER TO ME

WEEK ↓	DAY →	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1																																
2																																
3																																
4																																
5																																

LEVEL ENDED AT THIS WEEK

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 5 CONV 30 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 6 CONV 20 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 7 CONV 31 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 7 CONV 31 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 8 CONV 31 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 8 CONV 31 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 8 CONV 32 VOR 1 2 3

ACC 1 2 3 4 5 6 7 8 9 10 + PA 1 2 3  
B DIV 9 CONV 32 VOR 1 2 3

ACC = ACCOMMODATION  
B = BINOCULAR  
PA = PERIPHERAL AWARENESS  
VOR = VESTIBULAR OCULAR REFLEX

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**Thanks For Participating**

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