COGNITION

BY ORGANO™

CTS 90™

powered by neurotracker

USER GUIDE

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Welcome to COGNITION

Your Cognitive Ignition™ Training Begins Here

We are thrilled to have you join our global community of COGNITION CTS90 users who are using the system for a vast range of human performance and wellness benefits. This guide will provide you with everything you need to get started, from activating your account to becoming a CTS90 pro!

In addition to this manual, several other support and educational materials are available to you as you get started: :

I Science and Benefits Video Series
II Product Based Tutorials
III CTS90 System Blogs

I SYSTEM REQUIREMENTS

To run the CTS90 training program, your computer
should have the following minimum specifications:

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CPU	Intel Core i5 (3GHz)
RAM	8GB
OS	Windows 8.1 or 10 MacOS 10.13 High Sierra or higher

II ACCESSING YOUR ACCOUNT

To log-in to your CTS90 account, you will need to download the program by going to:
https://neurotracker.net/download-installer/
Once the software is downloaded, simply type in your username and password on the login page.
If you are brand new to CTS90, you can watch tutorial videos on CTS90 training before starting your first session.

III VIEWING DISTANCE AND CONSIDERATIONS FOR SETUP

CTS90 provides benefits by testing your peripheral vision with target tracking across a wide field of view. As an approximate guide, the distance between your eyes and your display should be around the same as the size of the display. For example, with a 17 inch laptop your eyes should be around 17-inches away from the screen. With your Cognition glasses, you can also judge this by being close enough so the display takes up about 50% of the height of the lenses. Screens 15 inches or larger are recommended for CTS90, however if your display is smaller than this, you may need to follow the displays' recommended minimum reading distance as a guide to optimize your viewing experience.

As the CTS90 task trains attention and cognitive systems, it is important the training environment is free of distractions, where able. Typically users will complete training sessions with controlled lighting and very little background noise. It is encouraged you complete training during a time when you can direct all of your attention and focus to the training task. What's great is each CTS90 session only takes 6 minutes to complete!
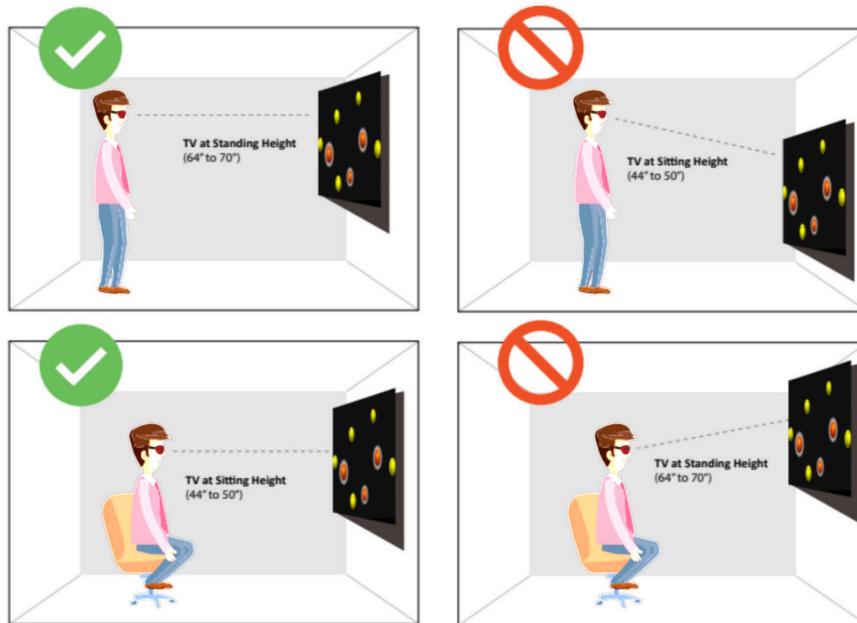
If your screen is a TV please use the following guide to ensure the distance from the TV is appropriate: 65 inch screen, 5ft 8 inches back,
60 inch, 5ft 3 inches back
55 inch, 4ft 10 inches back
50 inches 4ft 5 inches back

IV TRAINING IN 3D

One of the key components making CTS90 such an effective training tool is the 3D training environment. 3-D training is important because our brain uses 3-D vision to understand the world around us every day. As a part of your CTS90 training program, you will be equipped with a pair of Cognition 3-D glasses with red and blue lenses. These glasses have been specifically optimized for the software, and as such, you want to ensure they are the only 3-D glasses being used for training.

If you have an Active 3D display, you can also use it to train on CTS90 in 3D.

Unless otherwise advised by your administrator, all CTS90 sessions should be completed in 3-D to promote the greatest training benefit.

V YOUR FIRST SESSION

Follow these instructions for your first session on the CTS90:

Unless otherwise instructed, CTS90 training should be completed in a seated position.

To help you spread your attention effectively, loosely keep your gaze around the bright circle in the middle of the screen. This helps you use your brain, rather than your eyes, to track all of the targets at the same time. You will see 8 yellow balls - two, three, or four of them will be highlighted with white circles – these are your targets, remember them!

The balls will move for 4-8 seconds and then stop. Select the number of balls that were your targets by clicking them with the left mouse button, via touchscreen, or by typing the number associated with them on the keyboard (in any order.

CTS90 will then show you the correct answers. This is one 'trial.' If you selected the targets correctly, the next trial will be faster. If not, it will be slower. Each trial starts right after the last one, so always be ready! You don't need to remember any numbers from the previous trial, they change each time you are asked to select your targets. After performing 20 trials, your first CTS90 session will be complete.

If you need to pause a session, you can press the spacebar after, or prior to each trial.

You can exit a session by clicking the 'X' on the top right or by pressing ESC (no results will be saved if this is done before the 20 trials are complete.

VI MANAGING ANSWERS

CTS90 accepts your answers automatically a few seconds after your targets have been selected either by mouse or keyboard. If you want immediate feedback just press the enter key after selection, or use the right-click on your mouse. If you selected a target unintentionally, you can click or type its number again to deselect it. Occasionally, one of your targets may be hidden by another ball. If this is the case, wait a moment for the auto-rotate to reveal it.

The green dots on the bottom of the screen show how many trials you have left in your active session. A solid circle is shown whenever you get all targets correct, and an empty circle is shown if you miss any targets. At the end of each trial, you can also see your next speed on the top left. This is calculated from results in your previous trials. To test your boundaries, CTS90 will sometimes increase the speed by a lot when it is testing your limits of tracking – so always be ready for action!

i. Main Dashboard

Program Progress Bar (Top Left):
The progress bar shows you where you are in your training program, as well as what's to come.

What's Next Section (Top Right):
Shows you what your next training session will be and a button to get started.

Progression Graph (Center):
The progression graph shows your CTS90 performance over time, along with training statistics.
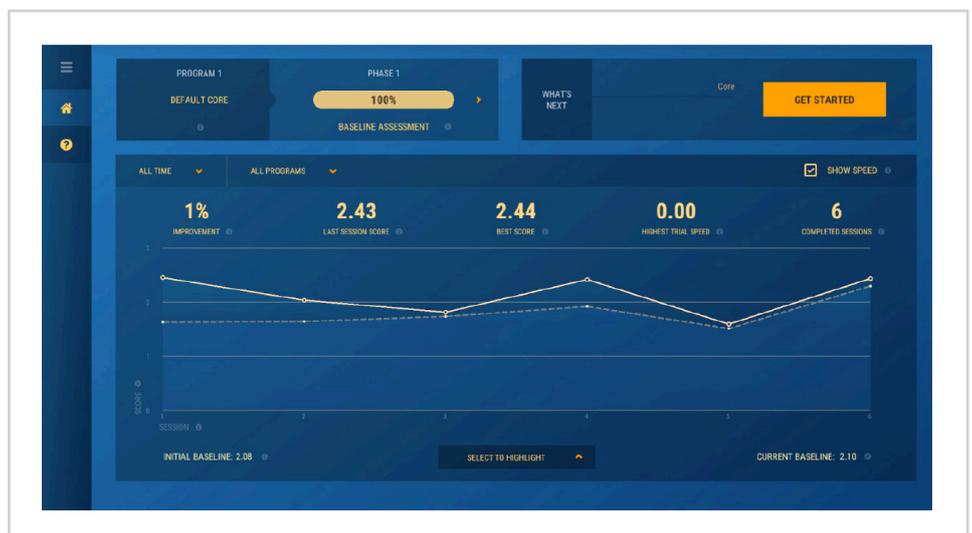
ii. What Does My Score Mean?

Following completion of a session, you will be presented with a speed. This represents the upper limits of the speed at which you can successfully track all targets about 50% of the time. It is a combined measure of your attention, working memory, information processing speed, and executive functions - all of which are needed for success in school, work, athletics and elite performance.

It is expected your speed will fluctuate depending on a number of factors including sleep, stress, motivation, fatigue, physical activity and so on. Do not be discouraged if you have sessions which are below your normal scores. What's more important is you are improving with time. Like lifting weights in the gym, an increase in your CTS90 ability is a direct translation to strengthening and improving your "mental muscles". There is minimal strategy or practice effects to CTS90, and as such, your improvements with training are not due to anything but improvements in brain function.

VI DUAL TASK TRAINING

Following completion of the Assessment and Consolidation phases of CTS90 training (phases 1-3, your program will include an option to add dual-task training. During the early phases of training, it is important to dedicate all of your attention and focus to the task so the brain can consolidate learning and maximize training benefits. Once you have shown steady improvement, dual-task skills can be added to expand your mental capacity to distribute attention effectively across different tasks.

For someone who works in a very busy work environment, this could include performing CTS90 with noise and distractions in the background. For an athlete, this might include dribbling a basketball or passing a soccer ball. For students, this could include the addition of mental math exercises. The CTS90 training programs have dedicated phases to dual-task training and they all begin with standing. This is because the order of dual-task skills needs to follow a progression of simple to increasingly complex over time. Otherwise, the training benefits are not as strong.

Once you begin the dual-task phases of training, there will always be an option to complete the training in a seated position. This is important for users who do not have access to a screen or setup to allow for dual-task training at the right viewing requirements. If you are unable to complete dual-task training, don't worry! CTS90 in a seated position will still provide you with continued benefits across your training program. If you do have access to a setup which allows for dual-task training (i.e. some users project training onto their TV screens using HDMI cords or use WiFi or Bluetooth to stream to a Smart TV screen), it is important to follow the recommended guidelines for viewing distance highlighted above.

*More information is included on dual-task training in **section 4. Your Training Program***

When you identify your goals of training during the sign-up process, a training program will be automatically applied to your account. This training program has been designed to progress at a pace appropriate for your skill level, with multiple phases and "checkpoints" throughout. The number of targets you track in each session will adapt according to your skill level to optimize your training program. This may include either 2, 3 or 4 targets.

THERE ARE FOUR MAIN PHASES OF TRAINING INCLUDED IN YOUR PROGRAM AND A DESCRIPTION FOR EACH IS INCLUDED BELOW:

ASSESSMENT (INITIAL, ELEVATED, ONGOING):
The assessment score represents the average speed threshold score from three Core CTS90 sessions. They represent your cognitive capacity at the time of the assessment. As there are many factors which can influence CTS90 scores (i.e. sleep, motivation, mood, stress, all assessments are calculated based on the average of three sessions rather than a single session. These assessments are completed using Core because it is the standard CTS90 session where all of the research is based. Your initial Baseline Assessment will be the first assessment completed at the beginning of your training program. As you progress through the phases of training, you can compare your assessment scores to see how much you've improved. If possible (and tolerated), consider completing your assessment phases in one sitting, where you complete the three CTS90 sessions back-to-back.

CONSOLIDATION:
Consolidation training refers to the period of time in which the most rapid learning effects occur. The length of time will vary depending on your purpose of training. During this phase of training, your brain is building a foundation and consolidating the task to allow for more challenging and complex training sessions in the future. All training sessions during the Consolidation phase are completed in a seated position only.

DUAL-TASK (STANDING, BALANCE, STRENGTH, SPORT-SPECIFIC):
* Please be advised not all forms of dual-task training are included in every program

I. **STANDING:** o add standing to your dual-task training, simply follow the recommendations for viewing distance noted above. Although standing may seem like a simple task, it is important to complete the recommended number of sessions before moving on to other dual-task skills. Standing still requires attention and research has shown training benefits are reduced if standing is introduced too early, or skipped through the program.

II. **BALANCE:** It is recommended you add balance dual-tasks representative of your levels of mobility and skill. Always ensure there are stable supports nearby for safety in case you lose your balance. The goal of balance training while performing CTS90 is to successfully maintain your balance for the duration of each trial. Examples include: standing with feet heel-toe, single leg stance, using balance discs etc.
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III. **STRENGTH**: It is recommended you begin by adding body-weight resistance skills during the strength dual-task exercises. Consider alternating left and right limbs throughout the twenty trials. Most users complete 1-2 repetitions per trial, but it is dependent on your preference and tolerance. Examples include: body weight lunges, calf raises, squats, bicep curls etc.

IV. **SPORT-SPECIFIC**: There is plenty of room to be creative with the addition of sport-specific dual-tasks to your training program. Ideally you want to incorporate skills which allow you to maintain your visual focus on the CTS90 screen. The tasks you choose to add should be reflective of the skills you are actively training in your sport. Examples include: footwork drills, dribbling and passing balls, stick handling, agility exercises etc.

V. **MAINTENANCE**: These phases are introduced following consolidation and dual-task training. Maintenance phases are intended to keep cognitive skills heightened and sharp and while the degree of change may be less noticeable, the training will still continue to provide learning and performance benefits!

PART 5 | CTS90 KNOW-HOW & BENEFITS OF TRAINING

I COMPONENTS OF THE TRAINING SYSTEM
An important aspect of seeing results is understanding the why behind the components of the training task. While the CTS90 task can initially come across as simplistic, there are key aspects of training allowing it to be incredibly effective for enhancing performance across many domains.

3-D Training Environment
As covered in Getting Started, training in 3-D provides a significant advantage because our brain operates in a 3-D world. The closer the training system can be to real-world brain processing, the stronger the learning effects and benefits will be.

Multiple-Object Tracking
By following multiple targets at one time, your brain is working hard to prioritize and maintain focus on the relevant items (targets), while filtering out the distractors. This type of processing has direct relevance to how your brain pays attention in real-world scenarios, where you are being presented with multiple streams of information at once.

Wide Field of View
By using the center dot as your "visual anchor", you are allowing your peripheral vision systems to become engaged. Peripheral vision is incredibly important for how our brain understands the environment, and it is what allows you to see key pieces of information around you without having to turn your head or move your eyes. By eliciting peripheral vision systems across the wide cave, it allows the brain to become more efficient in processing visual information.

Adaptive Training

Just like using the right amount of weight in the gym is important for building strength, training with the appropriate CTS90 "load" is important in order to see the strongest learning effects. When the CTS90 speed adjusts after each trial based on successes and failures, it is working to find the optimal speed at which your brain can engage in training. If it is too easy, you won't learn, and if it is too challenging, you will become overloaded. Every CTS90 session will always be individualized to your level of training to ensure the greatest benefit.

II BENEFITS OF TRAINING

Consistent training with CTS90 has been shown to help support improvement in the following areas:

- Attention and focus
- Ability to "multi-task"
- Working memory
- Decision making and reasoning
- Visual information processing
- Peripheral vision

- Situational awareness
- Cognitive stamina
- Response inhibition
- Fluid intelligence
- Cognitive flexibility, or "thinking outside the box"

Any Questions?

Feel free to contact us at

support@organoglobal.com

and one of our representatives
will be happy to assist you.

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