

## **TRACK HEROES – HIGH SPEED MENTAL HEALTH**

Veterans & 1st Responders (V1Rs) served occupationally in high stress environments for extended periods of time. Existing in this environment can actively change the way they perceive the world around them which can persist even after they separate. V1Rs have a higher potential for anxiety issues, escalated mood, awareness, responsiveness, a primed fight or flight, enhanced sensory input, and enhanced visual recognition. Many self-medicate through substance abuse to block anger, anxiety, and fear associations. However, some have found significant, lasting relief through the rush and excitement of motorsports.

Track Heroes is a non-profit (501c3) that combines High Performance Driving and cutting edge neuroscience to improve the mental health of V1Rs without the use of drugs or medication. Through our research, we verified that High Performance Driving improves mental health, validated how and why it does so, then designed the Adaptive Control Program (ACP) to maximize those benefits while promoting camaraderie and long term mental health.

ACP relies heavily on neuroscience research of the Anterior Cingulate Cortex (ACC) and its role in how we as Veterans and 1<sup>st</sup> Responders view, process and react to any given situation. Are we calm and relaxed, or are we anxious and angry? Our program focuses on the ACC, engaging it with specific stimuli, in a specific sequence, to trigger specific neurological responses, providing our Heroes with quantifiable improvements to their mental health. By targeting the ACC, we provide “top-down” regulation of the systems it controls and influences, providing both immediate relief and a track for long term healing that doesn’t rely on medication.

### **What is the problem?**

When working properly, a stressful situation sends signals for the hormone, CRH, to be released in your brain, activating important bodily responses you may feel when stressed such as increased blood pressure, pulse, body temperature, increased respiration, and dilated pupils. CRH also causes another hormone, ACTH, to release which makes its way to the kidneys where Cortisol is released. Cortisol eventually makes its way back to the brain, removing the hormones (CRH/ACTH) from your system, bringing on the Rest and Recover phase.

Long term occupational stress caused many V1Rs to trigger this response frequently, making it far easier to trigger in the future. Over stimulation of this system causes the kidneys to become overwhelmed, creating a backlog of CRH and ACTH in the body and brain. As the cortisol response flatlines, or becomes unresponsive, increased levels of CRH/ACTH causes increased anxiety and disturbed sleep, triggering more responses, which increase hormonal levels, causing more triggers. This feedback loop of anxiety is the trauma mind ACP addresses.

### **Why the ACC?**

Before your brain reacted to a stressful situation by releasing CRH, it had to first determine if the situation was indeed stressful. This fortunetelling job is done by your ACC. It pulls from your total life experience, and attempts to predict the future, shaping your response. For example, walk a German Sheppard into a room of people, and each person will have a unique response, provided by their ACC, based on their previous life experiences. Some sad, some scared, some

happy, mixtures of some or all. How you have emotionally interpreted these experiences determines how *what you are about to sense* will be received by your brain.

By targeting the ACC, we aim to mitigate the stress response from triggering, providing drug free, “top-down” regulation of the system. Lower triggers, result in decreased and decreasing hormonal levels. As the kidneys catch up, cortisol response normalizes, restoring the system.

### How we fix it

To prevent the stress triggers, we must first get the trauma brain out of its neurological “rut” where it has learned its hair trigger responses. To do this, the ACP challenges the ACC with sequences of High Performance Driving drills and exercises, designed to force the ACC to accept that it does not currently possess the knowledge and skills necessary to accomplish the task.

This puts the brain in Learn/Explore mode while in an elevated state. The rest of the day, we flood the brain and these newly laid neural paths with immersive, challenging, and competitive events, in a team environment with fellow V1Rs. Our goal is to introduce positive neural plasticity at an elevated state (control), while also building identity, purpose, comradery, capability, and capacity. Many lifelong friendships have been forged on these days.

Once the Heroes complete the High Performance Driving portion, we introduce them to the science we described above. This briefing demystifies the issue for many V1Rs, explaining many of the challenges and stresses they face. We describe the “Racing Mind” we helped them achieve and provide them with specific exercises to help them re-achieve this state of mind in the future, when they go back home. These skills have proven useful in day to day life.

### Does it work?

Utilizing our Autonomic Functional Inventory (AFI) survey, we assess 15 areas on a 10 point sliding scale to determine the Hero’s stress level, over a certain period of time. Each Hero completes an AFI Pre/Post event, to evaluate ACP’s effectiveness. Additional surveys are conducted 1 month and 6 months post event to evaluate longer term effects. Results have been overwhelmingly positive! On average, Heroes have reported to experience:

- 40.6% more Relaxed
- 40.1% increased Calm
- 40.1% increased Focus
- 30.5% increased Safety
- 30% more Good Sleep
- 20.7% decreased Muscle Tension
- 20.3% increased Energy

### But We’re Not Done Yet!

Once Heroes complete the ACP, they are invited to join us at a variety of High Performance Driver Education events, where participants drive on real racetracks, with an in-car instructor, at race speeds! These events allow Heroes to continue to explore, build and refine their High Performance Driving, and Mental Health skills. A key component of Adaptive Control.

BUT WE WANT TO DO MORE! There have been recent studies proving our top-down regulation methodology is effective, but current treatment studies are medication and drug focused. Our program allows V1Rs to experience the benefits of this treatment, naturally, and without drugs. Additional research will allow us to expand the program to provide healing and drug free HIGH SPEED MENTAL HEALTH to all the Heroes in our community.