

# EDGE OF CHAOS

## MINDFUL ATHLETE TRAINING



SEPTEMBER 2021

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## THE ASCENT

### THE MAT TEAM

Welcome to ***Edge of Chaos***, Mindful Athlete Training's inaugural Newsletter! The *Edge of Chaos* is the transitional zone of bounded instability that engenders a constant dynamic interplay between order and disorder (Complexity Labs, 2016). Physicists have shown that adaptation to the *Edge of Chaos* occurs in almost all systems with feedback. The work that we've done at Mindful Athlete Training with athletes over the last decade couldn't be more relevant and important than it is now in 2021. With pressure always mounting and competition improving each year, we believe our empirically supported and integrated programs can be the difference maker for today's athlete. While this has not been something widely considered before, the time for proactive mental strength training is now. With that being said, we are excited to show you an insider view into the continuing work we do through this newsletter!

## THE CHAOS CORNER

### BY CHRISTIAN FRANCO

You're pitching a no-hitter through the 8<sup>th</sup> inning. BOOM the skies open up and it begins to rain. Now drenched, you attempt to reset but give up a hit, and then another. You're sprinting down the soccer field on a breakaway; the goal is right there. BOOM the crowd becomes deafening, you lose focus, and you miss an easy shot. You drop back in the



pocket thinking you have plenty of time from your offensive line protection. You spot an open receiver then BOOM the pocket collapses and you're sacked. You're on your way to work, an easy 20-minute drive. You never get stuck in traffic, so why bother checking any traffic reports. You get on the highway and BOOM there's been an accident and you're stuck in traffic worrying you're going to be late. Everything is going the way we imagined and BOOM, out of nowhere, something comes along and disrupts it. We are tossed and turned upside down with feelings of distress and anxiety accompanied by countless negative thoughts and frustration. What is this game changing variable that can disrupt so much in our lives? Chaos.

Mindful Athlete Training defines chaos as the ever-changing variables that place internal and external demand on your task, disrupting all mental scripts. By internal demands, we mean the chaos affecting ourselves inwardly, like our mentality, our attitudes, and our physiology. By external demands, we mean the chaos affecting ourselves outwardly: our environment, other people, the weather, etc. The combination of internal and external demands creates a disruption of our mental scripts. For the pitcher losing a no-hitter in the 8<sup>th</sup>, he is now feeling the effects of the sudden change in weather (external), and frustration rises (internal), leading to another hit being given up. For the soccer player, the crowd becomes deafening (external) causing her to lose focus (internal) and miss the goal. For the quarterback, the pocket collapses (external), panic sets in (internal), and he is sacked. For the driver on her way to work, the traffic (external) causes frustration and worry (internal) due to the disruption of her mental script. Chaos is everywhere and can be experienced in not just athletic situations, but everyday situations as well.



Chaos Theory

Stress and chaos are natural and unavoidable; the aforementioned unpredictable weather and completely random traffic accidents being examples. However, Mindful Athlete Training believes stress and chaos are elements to embrace rather than escape from. We utilize biofeedback in our Lab to look at the effects of stress on the heart, brain, muscles, and nervous system both individually and together. Our data-driven approach of training with chaos improves mental fitness, leading to a more resilient performer. This is important not only in the athletic field, but in all areas of life. We want to optimize performance while also handling stressors effectively; not trying to find ways to minimize stress, but rather the impact it has on availability and performance. Traditional training apps and programs like the Calm app do a good job of helping people recover.

However, chaos is not something to be avoided through meditation and other forms of escape. While there is value in a peaceful environment, rarely does performance mirror these moments of tranquility. The effects we measure in the Lab demonstrate that working with chaos has much greater benefit in moments of performance and lends a higher likelihood of seeking out challenges. By embracing chaos, we recognize we are not the norm, however finding the 1% difference requires tackling chaos head-on.

With training, athletes can become more adaptable to future disruptions of their mental scripts and discover ways to cope with and manage the chaos. The more they are able to embrace chaos and prepare for it, the more it can be seen as a challenge and opportunity rather than something to fear. Embrace the chaos!

## TRADITIONAL THERAPY-STILL IN THE STONE AGE?

BY JIM WING



A person feels depressed and decides to see a therapist. Before seeking a therapist, it is common for the person to question whether simply meeting weekly with a stranger will even be effective. Will this work? How will talking help? Am I ever going to get better? This can lead to apprehension of the therapeutic experience or seeking support. To that end, therapy has changed only slightly since Sigmund Freud worked with his first patients in 1886...by talking to them. There are many approaches to therapy; a few being cognitive

behavioral therapy, person centered therapy, psychodynamic therapy, humanistic therapy, and existential therapy. Even today it is sufficient to say they all have one thing in common: the therapist and client engage in a conventional weekly conversation just as Sigmund Freud did with his patients 135 years ago.

Therapy is indeed effective at alleviating client symptomatology. In fact, there is a plethora of research that supports the effectiveness of therapy regardless of the approach being used, with about equal outcomes across modalities. If you or someone you know needs mental health support, we highly recommend seeking

out a licensed professional. Here we are addressing the evolution and innovation of the traditional therapy experience. Is simple talk therapy the best approach? Not much has changed in the technical delivery of therapy to people in at least the last 100 years, despite significant theoretical and technical evolution of the field. For example, recently advancing brain imaging technologies such as electroencephalogram (EEG) and magnetic resonance imaging (MRI) have given scientists the ability to observe human neural activity in real time; an interesting additional source of data that could be coupled with talk therapy. Such is the subject of the subfields of neuropsychology and cognitive psychology, which study the intersections of human behavior and brain functioning.

As Mindful Athlete Training is a sport performance technology company, consider the intersection of traditional and sport psychology, specifically the overlaps. For example, just as someone may seek therapeutic services to cope with failing an important exam, so too may an athlete seek support after losing the state championship. Just how a typical person may struggle with delivering an important presentation at work, it is common to face performance anxiety amongst athletes. With these and more similarities in mind, most traditional and sports psychology clients are treated in a similar way; again, with traditional interventions. After more than 100 years, it is about time these important difficulties are treated in a different way.

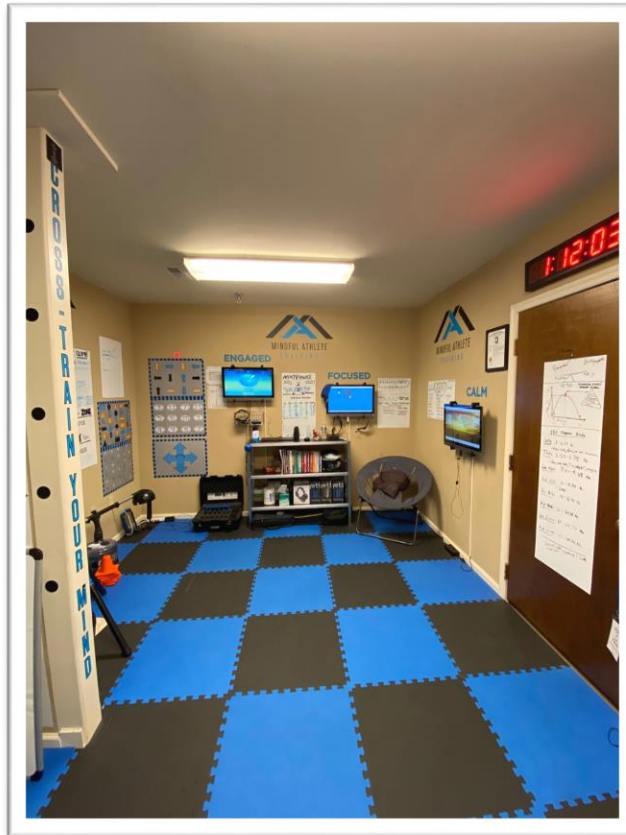
The fusion of traditional mental skills training and talk therapy with modern heart, brain, and neurocognitive functioning biosensor technology may answer some of the questions clients may have. For instance, traditional CBT coupled with Calm training via heart rate variability monitoring has been shown to greatly reduce anxiety in both the clinical and athletic populations. Many of the same techniques we use with our high-performance population are equally effective and relevant with a traditional population. In fact, we say that while Mindful Athlete Training works primarily with athletes, anyone can be an “athlete” because life is the greatest performance. In working with these life performers, the combination of talk and technology is providing an exciting new realm of possibilities and successes. As Tom Freston, the founder of MTV said, “Innovation is taking two things that exist and putting them together in a new way.” This is precisely what we are doing at Mindful Athlete Training.

## THE LAB: OUR PERFORMANCE ARENA

**By Jordana Ambros**

Picture a gym. Inside there may be free weights and machines, motivational quotes on the walls, and personal trainers roaming the floor. Now picture

someone training their brain. This is likely more difficult, and you may even picture someone sitting at home doing a sudoku puzzle or crossword. The reason this concept is hard to envision is because up until recently, there has not been a space dedicated to training mental fitness. That is, until now. Mindful Athlete Training can be thought of as a mental gym; the space in which we enhance our athletes' mental strength. The Lab is our performance arena, where we train the brain like any other core muscle. The Lab is designed to develop your frontal lobe along with key neurological components to enhance mental fitness so you can manage mental fatigue. In addition, we empower your raw talents to gain the ability to thrive in chaos. People often run from chaos because it is stressful and uncomfortable, but at Mindful Athlete Training we embrace the chaos; we run into the storm instead of away from it. We intentionally train our athletes in chaos so they can gain the mental strength needed to handle stressors both seen and unforeseen and continue to perform at a high level. Training begins with the data driven biosensor technology in our Lab. This technology allows our coaches to measure an athlete's heart, brain, muscles, nervous system, and how they integrate across the domains of Calm, Focused, and Engaged.



Calm is our foundation. Research shows that when an athlete's body's autonomic systems are compromised the ability to maximize attentional control is negatively impacted. The technology we use when measuring Calm is heart rate variability. Heart rate variability, or HRV, measures the beat to beat intervals between heart beats. The more fluid and regular these intervals, the more the heart, mind, and emotions are all in sync, which is measured by amount of "coherence." This coherence also parallels a synchronization of the sympathetic and parasympathetic nervous systems. The goal for our athletes is to achieve high coherence, meaning physical and mental synchronicity. This synchronicity is indicative of a more relaxed mindset and a proper physical platform for performance. By physically showing what a calm versus anxious state looks like, we teach and implement coping strategies to remain calm in the

face of stressors. By helping our athletes develop these calm tendencies, they are better able to manage stress while performing, taking their game to the next level.

Next, the equipment we use to measure an athlete's level of focus is electroencephalograph. Electroencephalograph, or EEG, measures brain wave frequencies and levels of focus. Research has shown certain brain waves to be correlated with better focus and performance. We identify a key brainwave frequency which is specifically associated with an ability to shift from a narrow to broad focus. Narrow focus means being able to fixate on a smaller plane (passing a baton during a relay race), while broad focus is seeing a larger vision field (QB surveying all targets when first option is unavailable). The ability to move fluidly between the two is crucial in ever-evolving competitions. We condition the brain to get into this zone faster and stay there longer. This conditioning principle strengthens the attentional regulation of an athlete when they perform.

To continue, we utilize neuromuscular timing to measure an athlete's level of engagement. Neuromuscular timing is a way to look at reaction time and neuroplasticity. Based on the ability to perfectly match a pendulum's repetitive beat through various bodily motions, incorporating hands and feet, we are able to see the ability to remain engaged in a simple task over time. We can increase the difficulty in various ways to strengthen mental endurance, by utilizing our cognitive treadmill (repetitive task, varying speeds, definable challenge levels). As the endurance and engagement builds, we are strengthening neuroplasticity, or the brain's ability to adapt and process information more quickly. The ability to remain engaged over the course of a quarter, full game, and full season is crucial to reaching peak performance, and this is achieved by increasing neuroplasticity.

Using these empirically supported technologies, we are able to effectively train the heart, brain, muscles, and nervous system for integration towards a greater whole. Look forward to next month's topic: The first thing all MAT athletes do in the LAB, their **bioQ assessment**.



# THE IMPORTANCE OF MENTAL STRENGTH TRAINING FOR TODAY'S ATHLETES

By Priscilla Wiggins

With the 2020 Olympic Games in the rear-view mirror, spectators around the globe have had a front-row seat to the pressures that elite athletes face on a daily basis. Athlete mental health is an incredibly unique component of sport performance, and we are excited about conversations that have opened up because of athletes like Simone Biles, Naomi Osaka, Michael Phelps, and more.



For most who participate in high-level competitive sports, the most widely held narrative is to push through obstacles and difficulty in order to succeed. While pushing through challenges and difficult moments can separate the average from the exceptional, we are now seeing an important shift in how to train athletes for holistic success at the highest levels. There are endless distractions, stressors, pressures, and challenges that athletes face every day, and we believe training in such a way to reduce effort needed to cope with these stressors can provide the solution to the problem of mental fatigue.

Over the years we have asked our Mindful Athletes how important the mental side of their sport is, and most agree that it's arguably more important than physical training in many ways. Yet, if you ask them how they are intentionally training their mind, they don't know what to say. The problem is many do not know how. Similar to how many athletes would be able to program and perform a physical workout in a gym, we have built a model and language that cross trains the mind, strengthens the 'core muscles' of the brain, and embraces chaos to adapt to any scenario they may encounter in competition.

When working with athletes across various sports, ages, levels, and abilities, we aim to be keenly aware of the mental, physical, and emotional backgrounds that are brought into training sessions. As we gain baseline measures (bioQ) of their raw talents and areas for improvement, we challenge our athletes to embrace

the chaos they experience, with key components being proper support and recovery. Once we have a baseline of their abilities, MAT coaches work with the athlete to develop a mutual understanding of their goals, strengths, and areas for growth within mental strength training. Our efforts center around fostering a growth mindset and diminishing the effects of mental fatigue. Just like a personal trainer in a traditional gym, MAT coaches prepare a weekly training program, focusing on mental strength, flexibility, endurance, and recovery that will help the athlete reach their goals. These areas are designed to help athletes stay Calm, Focused, and Engaged when it matters most, and this is accomplished through our holistic model of performance training.

## NON-TRADITIONAL TRAINING FOR NON-TRADITIONAL ATHLETES

**By Taylor Golkin**

*Athlete:*

**Merriam-Webster Dictionary:** a person that is skilled and trained in exercise, sports, or games requiring physical strength, agility, or stamina.

**Wikipedia:** a superior athlete is one who has above average physical skills (strength, agility, & endurance) and is thus more suited for physical competitions.

**Google:** a person who is proficient in sports and other forms of physical exercise

*Similar: sportswoman, sportsman, sportsperson, runner, player, competitor, contender.*

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Given these broad definitions, who is an "athlete?"





At Mindful Athlete Training, our objective is to provide training for rising and elite athletes, though as mentioned we believe life is the greatest performance across all settings, creating a potential athlete in all of us. Specific to these “non-trationals,” consider a typical firefighter. They must be physically fit, make snap decisions, and handle stress and chaos exceptionally well. All of these are prerequisites in high level traditional sports as well. An elite-level gamer must have near-perfect reaction times, endurance over long matches, and the ability to manage frustration. These attributes are typically identified in more traditional sports. At Mindful Athlete Training, we are excited to tap into both the traditional and non-traditional high performers. Our specific integration of biofeedback technology allows us to heighten their performance in all stressful situations, be it in the virtual world, the crime scene, or even perhaps the battlefield.

With the understanding that being a high level “performer” should no longer be reserved to only traditional athletes, we believe our philosophy can shift the narrative of the high performer so all can see themselves as such. Training the brain should not be limited to just football, baseball, or soccer players. In the growing world of non-traditional personal performance, the possibilities are endless. Be on the lookout in this section for more information and stories of how we work with those in high-performance settings looking to find their own 1% difference.

### **MAT’s Elements:**

**Strength-** *The ability to withstand pressure.*

In high-stakes situations and matches, it’s your ability to consistently remain calm and focused.

**Flexibility-** *The readiness to adapt with CHAOS.*

How well can you adapt to chaotic situations? MAT will purposefully create chaos in order to help athletes shift attention and focus when needed.

**Endurance-** *The power to experience the process.*

By frequently training for extended periods of time, MAT can give athletes the power to experience the process instead of only focusing on the outcome. Be MORE in the moment, intentionally.

**Recovery-** *The action of returning to balance.*

Given the often-grueling nature of long competitions, paralleled with brutal work-weeks, and coupled with dramatic literal and moral victories and agonizing defeats, recovery is crucial. Proper recovery goes beyond just talking, stretching, and drinking water, however. MAT uses biofeedback technology to support positive self-talk, muscle relaxation, mental imagery, and other techniques to

ensure athletes have a healthy recovery routine. We can then regularly implement this routine to keep athletes fresh and ready to compete on and off the field.

## THE DESCENT

### THE MAT TEAM

Thank you for reading **Edge of Chaos** our inaugural issue! Next month we will continue talking about the chaos we all face, the evolving world of sports psychology, our unique mental metric assessment, highlight one of our traditional athletes, and continue delving deeper into the world of the non-traditional athletes. Stay tuned for more exciting content and remember to embrace your chaos!

