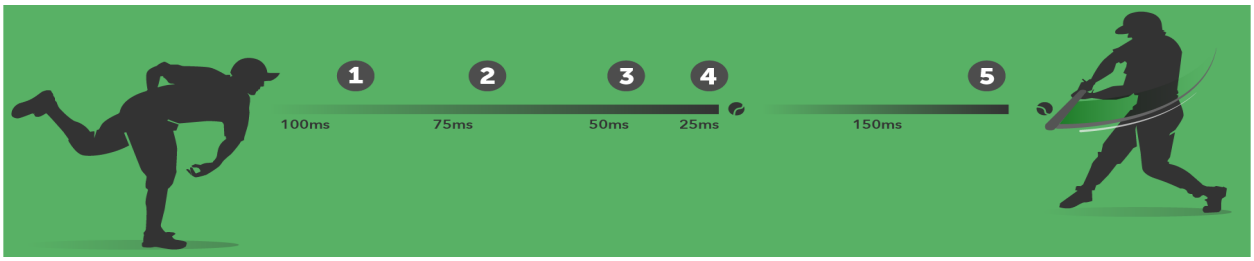
Why Athletes Train With BrainHQ

Cognitive Conditioning Players and coaches are coming to appreciate that cognitive conditioning is as important as physical conditioning. After all, it's the brain that controls the movement of the body and the split-second decisions made on the field.

Speed and Accuracy Brain speed and accuracy play a central role in sports. When a player reacts to any action on the field, the player must go through several split-second steps engaging both the mind and the body. We break that response into five steps, we call "using your RADAR" — **R**ecognize something happened, **A**ttend to what happened, **D**ecide what to do, **A**ccept that decision with a message from the brain to the body, and **R**eact physically.

> "As a result of using BrainHQ exercises, I can see more, see things more accurately, and make better decisions… faster."
>
> **— Tom Brady**

As one example, let's look at hitting a baseball. It takes only about four-tenths of a second from the release of a pitch until it crosses the plate. This is a great example of why split-second improvements in brain speed matter.



In 4/10ths of a second, the batter must (1) Recognize the pitch is released (100 milliseconds or "ms"), (2) Attend to spin, speed, arc, and location of the ball (75ms), (3) Decide to swing (50 ms), (4) Accept message from brain to body to swing (25 ms), React by executing the swing (150 ms)

Whether it's throwing a block in football, a quick dart down the court in basketball, a slap shot in hockey, a lob in tennis, a pass in soccer, or hundreds of other moves in any sport, a split-second movement can change everything. Even when seemingly instinctual, those movements are decision-based.

True Agility Efficient decision-based movement is "True Agility." There's a gap between when a player receives sensory information and acts on it. That reaction time has both a physical and a mental component. Most training focuses on improving physical movement, and fails to train the cognitive component. We'll rank players as "faster" and "better" if they can out-run others by just a couple of tenths of a second (200 milliseconds), but we do little to measure or improve brain speed by similar amounts. True Agility is about training an athlete to minimize the gap delay in reaction time.

BrainHQ Core Training for Sports BrainHQ offers dozens of computerized exercises and regimens that target just about every major system of the brain.

Training for sports starts with five exercises that target the speed and accuracy of the visual processing system. This is core training. Dozens of other exercises target other cognitive skills that can contribute to peak performance on and off the field.

BrainHQ exercises quickly and continuously personalize to each user (using smart algorithms to adjust stimuli based upon all your prior performance data). The exercises get harder when you are having a good day, and ease-off when you are having a bad day, to keep pushing you through your current threshold to new levels of your "personal best."

Cognitive Abilities A wide range of cognitive abilities play a critical role across virtually all sports and positions, including:

Processing Speed	**Multiple Object Tracking**	**Memory**
Reaction Time	**Useful Field of View**	**Decision-making**
Visual Search	**Peripheral Vision**	**Balance**
Visual Acuity	**Attention**	**Mobility**

Performance at each such cognitive task can be changed, with the right kind of training. That training is BrainHQ

Why BrainHQ What makes BrainHQ unique is the science. BrainHQ is built on the foundation of the science of brain plasticity – the brain's ability to change chemically, structurally, and functionally in response to sensory and other inputs.

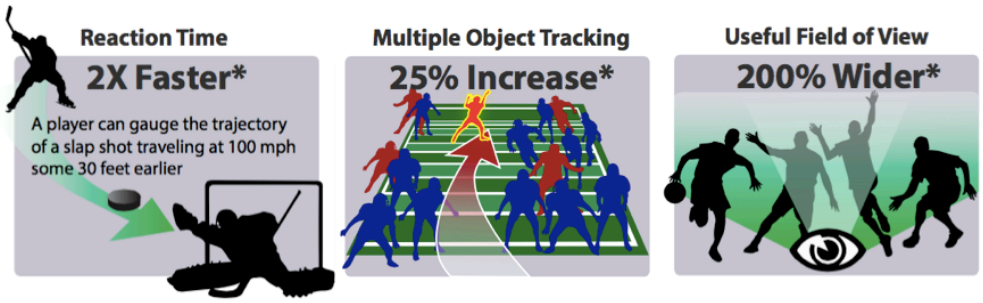
BrainHQ was designed by the world's leading experts in brain plasticity to make the brain perform better. Hundreds of university-based scientists joined together to design, test, refine, and validate the exercises and assessments in BrainHQ.

A recent independent expert review of brain training apps found most had no studies showing they worked, and that only BrainHQ had multiple high quality studies.

In fact, there are now more than 140 peer-reviewed science and medical journal articles about the wide range of benefits of BrainHQ exercises and assessments across varied populations. Those benefits include gains in standard measures of cognition (e.g., speed, attention, memory, decision-making) and generalization to real world activities (e.g., balance, gait, driving, everyday tasks).

Continuous Measurement To improve performance, start by measuring it. BrainHQ takes a baseline on each exercise the first time you use it, and continuously (and voluminously) records your performance and progress over time.

Fits Your Life BrainHQ is built to fit into your life. An average exercise block can be done whenever you have a couple minutes. While recommended usage is 20-30 minutes a day at least 3 days a week, many studies show significant gains in just 10 hours of training. Sleep helps consolidate gains, so what is hard today may seem easier tomorrow. BrainHQ lives in the cloud, so you can train from most devices (smartphones, tablets, computers).



*Average study results on standard measures, illustrated as applied to sports. Individual results will vary.