What is EYE-SYNC®?

EYE-SYNC is SyncThink’s groundbreaking, proprietary eye tracking technology, that uses patented algorithms and analytics to objectively measure, in real time, dynamic visual orientation.

By using EYE-SYNC smooth pursuit, saccade, and VOR assessments, clinicians can identify the source of poor orientation and correspond this to other assessments, as well as subjective complaints.

EYE-SYNC is the first reliable, objective tool to perform these assessments, providing key insights into whether dynamic visual orientation is optimized or impaired.

How does EYE-SYNC® work?

For us to pay active attention to the world around us, the brain must constantly predict incoming information. The 0.25 second delay between receiving information and acting requires us to predict and synchronize our behavior in order to interact in real-time. Synchronization is critical to stay safe and perform a task optimally.

For example, with EYE-SYNC® Smooth Pursuit, an individual watches a target move in a circular motion. The test is not trying to stress or confuse the user; rather, it aims to create the most predictable environment possible. The test then measures the user’s eye motion and characterizes how well it synchronizes with the moving target across two synchronization metrics: radial (or spatial) variability and tangential (or timing) variability.

With EYE-SYNC® Saccade, the test measures how precise an individual is able to replicate the landing of the eye from one target to another.

With EYE-SYNC® VOR and VORx, the tests measure how precise an individual is able to maintain fixed gaze on a still target while the body is in motion.

Technology Highlights
- FDA approved for use of eye tracking for visual impairments
- Cloud-connected and HIPAA compliant
- Wireless, Bluetooth-enabled virtual reality goggle platform
- Quick, objective assessment – less than 60 seconds for results
- Clear communication tool
- Proven technology – developed over 15 years of clinical research, 13 patents issued, over 30 research articles published

Benefits
- Supports clinical decision making through interpretation of objective data
- Real-time data and analytics on performance over time
- Immune to learning bias
- Can be used at the point of care, in the serial monitoring of recovery, or to improve dynamic visual orientation performance
Screening for Visual Impairment with **EYE-SYNC**

A healthy individual is able to visually track a dot going in a circle. When impaired, ocular-motor synchronization is often abnormal. EYE-SYNC assesses this impairment and provides clear, objective results. The main score used in EYE-SYNC is the variance in eye-target position, where a lower score means better synchronization.

**Normal**

- Eye tracing a dot moving in a circle
- Eye positions symmetric around target.
- Score = 0.5

**Abnormal**

- Poor eye-tracking
- Large forward eye movements
- Score = 2.9

EYE-SYNC helps track both typical and slow recoveries, and provides key insights into the effectiveness of targeted treatment. This allows clinicians to effectively manage and plan the return to activity progression.

**Slow Recovery**

- Baseline
- Day One
- One Week
- Two Weeks
- Three Weeks

**Fast Recovery**

- Baseline
- Day One
- Day Two

We are proud to partner with leading sports leagues, athletic programs, and healthcare organizations across the country, including:

Stanford Medicine  
NCoE  
Texas  
Sunnybrook  
Children's National  
MGH  

“This technology continues to impact how I evaluate and manage both the athlete and service member. Results of eye tracking have helped facilitate the most appropriate avenue for directing rehab after an athlete has sustained a concussion. When testing is normal, I feel more confident in gearing rehab toward other contributing systems like impairments coming from the vestibular system or the neck.”

– Lenore Herget, DPT, M.Ed., SCS, CSCS  
Board Certified Clinical Specialist in Sports Physical Therapy, Certified Strength and Conditioning Specialist  
Massachusetts General Hospital Sports Physical Therapy

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