Synopsis of NeuroTracker Fatigue Influence and Resistance Studies

Data from two linked studies show that fatigue affects perceptual cognitive performance, and that elite rugby players who train with NeuroTracker maintain awareness when fatigued better than untrained teammates—conducted by Sylvain Barthès (pending publication)

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Fatigue Influence on Perceptual-Cognitive Function
Stade Toulousain is a leading rugby team in Europe and has been using NeuroTracker for performance training, profiling and sports science studies for two years. The influence of fatigue is known to negatively affect performance, particularly for decision-making ability and for causing avoidable mistakes during the later stages of competition. Previous NeuroTracker testing with Stade Toulousain players showed that when exercise-induced fatigue increases, perceptual-cognitive function typically decreases.

In a recent initial study into fatigue effects, Stade Toulousain measured general fatigue as related to overall training loads. NeuroTracker tests were undertaken following first normal training, and then after a heavy work-out. NeuroTracker scores dropped by 17% following the heavy training session. Stade Toulousain are now investigating using this form of monitoring to determine the optimal time to reduce workload prior to competition.

Perceptual-Cognitive Resistance to Fatigue
In the follow-up study, Stade Toulousain established NeuroTracker baselines for two groups of players who i) trained extensively with NeuroTracker, and ii) did not train. Baselines were established with players recovered and at rest.

They then engaged the players in high intensity exercise to take them to 80% of their maximum heart rate and conducted NeuroTracker tests.

The results showed significant drops in perceptual-cognitive function for the untrained group, while the trained group experienced minimal effect.

Those trained with NeuroTracker showed initial higher levels of perceptual-cognitive ability than the untrained group; additionally, their perceptual-cognitive deficit following high-intensity exercise was significantly smaller than that of the untrained group – who experienced a steep decline in NeuroTracker scores.

Neurophysical Stamina Training Potential
The study opens up the possibility that NeuroTracker training could offer an effective method for minimizing the negative effects on mental performance caused specifically by fatigue.