NeurotrackerX Cognitive Enhancement study

No registrations found.

Ethical review	Not applicable
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON21107

Source
NTR

Brief title
TBA

Health condition

NA

Sponsors and support

Primary sponsor: This research has been made possible by the Dutch Ministry of Defense
Source(s) of monetary or material Support: Ministry of Defense and Netherlands Aerospace Centre

Intervention

Outcome measures

Primary outcome

Time to complete a flight simulation game/session and the number of hoops flown through while being distracted both auditory and visually

Secondary outcome

Cognitive attention, working memory, and visual information processing speed

Study description

Background summary

Performance optimization can be brought about by improving/training the handling of stressful situations. Training can focus on improving performance on the (perceptual-cognitive) tasks themselves, or on skills that allow people to better deal with the associated stressors. An additional possibility concerns the strengthening of mental skills as a result of the improvement of internal or external information processing processes, also known as cognitive enhancement. Cognitive enhancement has received increasing attention in recent years through multiple systematic reviews (including Kelly et al., 2019 and Blacker et al., 2019) These showed that especially task-specific training leads to consistent, positive results, in particular on attention, working memory and spatial cognition. Blacker et al. (2019) conclude that working memory training has a clear effect on near-transfer tasks, and should also be used for that purpose. Future studies should however look at how and to what extent the improvement resulting from working memory training on near transfer tasks translates into practical, 'real-world' applications and outcomes. A specific training form that could be suitable for this is the Neurotracker training program (NTX). NTX claims that by means of an adaptive 3D multi-object tracking task, both the capacity and the processing speed of the working memory are trained. The program was originally developed in Canada (University of Montreal) as a perceptual-cognitive skills training program with the aim of promoting the performance of athletes. The underlying idea is that tracking multiple objects triggers multifocal attention mechanisms, anticipation, and adequate decision making. By means of the training, other mental/cognitive skills such as attention, processing visual information and working memory are stimulated (Parsons et al., 2016). In this study we aim to investigate, by means of a scientifically designed experiment (RCT), whether we can repeat the results described above in gamers, and find out if a transfer to real life specific performance takes place.

Study objective

The NTX intervention training leads to significant increase in both near and far transfer outcomes, in comparison with the effects of a training of an active control group.

Study design

Baseline measurement (T0), training of 4 weeks, post-measurement (T1)

Intervention

The perceptual-cognitive NTX intervention has been developed in Canada, and consists of a digital, 3D multiple object tracking task, aimed to enhance both the capacity and the

processing speed of the working memory. A basic training program consist of 30 trials of 5 minutes each. Within those trials, participants have to track and follow multiple objects during 8 seconds.

Contacts

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Eligibility criteria

Inclusion criteria

Substantial gaming experience

Exclusion criteria

Familiarity with the training intervention

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Single blinded (masking used)

Control:	Active

Recruitment

NL

Recruitment status:	Pending
Start date (anticipated):	01-10-2021
Enrollment:	40
Type:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Plan description
To be discussed with funding authority

Ethics review

Not applicable

Application type:	Not applicable

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL9708
Other	Ministry of Defense : NTP L1917

Study results

Summary results
There is an intention to publish the results of the RCT. Once the study has been published, the reference to the publication(s) will be added here.