

# Protocol - TBS P300 normal volunteers

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## Abstract

Protocol for TBS and sham stimulation, over the dorsolateral prefrontal cortex.

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## Protocol

### P300 recording - pre-TBS (first recording)

#### Step 1.

P300 recording - pre-TBS

Auditory P300 recording using an 8 channel Keypoint.net v.2.03.

Active electrodes were placed in Cz, Pz, P3 and P4 of the 10/20 international system, with anterior reference.

A time constant of 1 second; high-frequency filter of 50 Hz; time base of 1000 ms; automatic overload rejection mode on. Auditory oddball paradigm: 80% frequent stimuli presentation, 1000 Hz and 50 ms of duration; random 20% target stimulus, 2000 Hz and 100 ms of duration. Minimal intensity of 65 dB HL. At least 400 stimuli (minimum of 100 targets).

Peaks: The largest negative peak, occurring between 160-260 ms = N200. The P300 was defined as the largest positive peak arising after the N1, P2 and N2 components, increasing in amplitude at the posterior areas and occurring between 220-600 ms = P300. Amplitude = maximum negativity and positivity components of the N2-P3 complex

### TBS stimulation

#### Step 2.

TBS stimulation

Perform either iTBS, cTBS or sham stimulation accordingly to hemisphere lateralization and group characteristics.

-Using a 70 mm figure-8 coil with a MagVenture MagPro® G3 X100 5.0.1, determine the active motor

threshold - minimal stimulation intensity over the motor cortex necessary to muscle contraction, on more than five out of ten trials. while maintaining a voluntary mild contraction.

-Active stimulation - performed over the right or left DLPFC, 5 cm rostral to the region from which the most prominent motor response of the contralateral used muscle. TBS protocol consisted of bursts of 3 pulses delivered at 50 Hz every 200 ms (i.e. at 5Hz), at an intensity set to 80% AMT. cTBS protocol the bursts were delivered without interruption, up to a total of 600 pulses. iTBS also comprised 600 pulses, but the bursts were delivered at 5 Hz during 2 s (groups of 10 bursts), repeated every 10 seconds.

- Sham stimulation used the same coil, tilted away from the scalp (at 90 degrees), but maintaining contact and sound (intensity reduced to 50% AMT).

### P300 recording - post-TBS (second recording)

#### **Step 3.**

P300 recording - post-TBS

Auditory P300 recording using an 8 channel Keypoint.net v.2.03.

Active electrodes were placed in Cz, Pz, P3 and P4 of the 10/20 international system, with anterior reference.

A time constant of 1 second; high-frequency filter of 50 Hz; time base of 1000 ms; automatic overload rejection mode on. Auditory oddball paradigm: 80% frequent stimuli presentation, 1000 Hz and 50 ms of duration; random 20% target stimulus, 2000 Hz and 100 ms of duration. Minimal intensity of 65 dB HL. At least 400 stimuli (minimum of 100 targets).

Peaks: The largest negative peak, occurring between 160-260 ms = N200. The P300 was defined as the largest positive peak arising after the N1, P2 and N2 components, increasing in amplitude at the posterior areas and occurring between 220-600 ms = P300. Amplitude = maximum negativity and positivity components of the N2-P3 complex