Supplementary Material



Figure S1: Correlation matrix of the factors included in the machine learning analysis.

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| **Author (year)** | **ROI(s)** | **participants** | **Control group** | **Blinded** |
| Auer et al. (2015) | SMC | healthy (N=16) | no treatment (only pre and post); additional within-subject control (left versus right ROI) | no |
| Emmert et al. (2017) | auditory cortex | tinnitus (N=11) | no | n.a. |
| Hellrung et al. (2018) | amygdala | healthy (N=34) | no-feedback group | no |
| Hellrung et al. (in prep) | amygdala | healthy (N=16) |  no-feedback group | no |
| Hellrung et al. (in prep) | insula | healthy (N=11) |  no-feedback group | no |
| Keynan et al. (in prep) | amygdala | healthy (N=33) | no | n.a. |
| Kim et al. (2015) | ACC, mPFC, OFC, PCC, precuneus | tobacco use disorder (N=14) | no | n.a. |
| Kirschner et al. (2018) | VTA | healthy (N=27), cocaine use disorder (N=24) | no, but replication of previous study with inverted feedback control group | n.a. |
| Kirschner et al. (in prep) | VTA | schizophrenia (N=14) |  no, but replication of previous study with inverted feedback control group | n.a. |
| Kohl et al. (2019) | dlPFC | overweight (N=16) | Other brain region (visual cortex) | single-blinded |
| Kohl (pilot data) | dlPFC | overweight (N=9) | Pilot data (control group in main study) | no |
| Liew et al. (in prep) | left PMC, left SMA | healthy (N=10) |  no | n.a. |
| MacInnes et al. (2016) | VTA | healthy (N=19) | 3 control groups: false feedback, visual control, different brain region |  |
| Marins et al. (2015) | left PMC | healthy (N=14) | mental rehearsal  | no |
| Marxen et al. (2016) | amygdala | healthy (N=32) | none; within-subject control |  |
| McDonald et al. (2017) | default mode network | healthy (N=68), psychiatric disorders (N=72) |  no | n.a. |
| Megumi et al. (2015) | left lateral parietal, left M1 | healthy (N=12) | 2 control groups: sham feedback, mental rehearsal | single blinded |
| Nicholson et al. (2017) | amygdala | PTSD (N=14) | no | n.a. |
| Pamplona et al. (2020) | default mode network, sustained attention network | healthy (N=15) |  behavioral control | n.a. |
| Papoutsi et al. (2018) | SMA | Huntington's disease (N=10) | no | n.a. |
| Papoutsi et al. (2020) | SMA, left striatum | Huntington's disease (N=16) | sham feedback | single blinded |
| Scharnowski et al. (2015) | SMA, PHC | healthy (N=7) | no; within-subject control (differential feedback) | no |
| Scharnowski et al. (2012) | visual cortex | healthy (N=10) | other brain region | single blinded |
| Sorger et al. (2017) | individually different | healthy (N=10) | no; within-subject control (graded feedback, no-feedback condition) | no |
| Spetter et al. (2017) | dlPFC, vmPFC | obesity (N=8) | no | n.a. |
| Yao et al. (2016) | anterior insula | healthy (N=18) | other brain region | double blinded |
| Young et al. (2017) | amygdala | depression (N=18) | other brain region | double blinded |
| Zich et al. (2020) | amygdala, dlPFC | adolescents (N=27) | no | n.a. |

Table S1: Overview of the included studies, their respective control group(s), and the type of blinding which was performed.