**Table S1.** *Age and Direct Effects for subjects with ADHD*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Age effects | Wald statistic | p-value | | Direct effects | BIC-value |
|  |  |  | |  |  |
| MRTexpGO | 110.8 | 6.4e-26 | | No direct effects | 2467 |
| MRTunexpGO | 64.3 | 1.1e-15 | | Only age effects | 2413 |
| ICVexpGO | 20.5 | 6.0e-6 | | RTbenefit <-> MRTunexpGO | 2361 |
| PcorrExpGO | 54.5 | 1.6e-13 | | MRTexpGO <-> MRTunexpGO | 2229 |
| **PcorrUnexpGO** | **2.4** | **0.12\*** | | ICVexpGO <-> MRTunexpGO | 2178 |
| PcorrExpNOGO | 8.0 | 0.0046 | | RegB\_5ct <-> RegB\_15ct | **2159\*\*** |
| PcorrUnexpNOGO | 4.9 | 0.027 | | ICV\_0ct <-> RegB\_5ct | 2169 |
| **RTbenefit** | **1.5** | **0.22\*** | |  |  |
| **RegB\_5ct** | **4.7** | **0.031\*** | |  |  |
| **RegB\_15ct** | **2.2** | **0.14\*** | |  |  |
| MRT\_0ct | 54.2 | 1.8e-13 | |  |  |
| **ICV\_0ct** | **5.0** | **0.026\*** | |  |  |
|  |  | |  |  |  |
|  |  | |  |  |  |

MRTexpGO, mean reaction time expected go-trials; MRTunexpGO, mean reaction time unexpected go-trials; ICVexpGO,

Intraindividual coefficient of variation; PcorrExpGO, percentage correct expected go-trials; PcorrUnexpGO, percentage correct

unexpected go-trials; PcorrExpNOGO, percentage correct expected nogo-trials; PcorrUnexpNOGO, percentage correct unexpected nogo-trials; RTbenefit, reaction time benefit; RegB\_5ct, regression coefficient 0 versus 5 cents condition; RegB\_15ct, regression coefficient 0 versus 15 cents condition; MRT\_0ct, mean reaction time in the 0 cents condition; ICV\_0ct, intraindividual coefficient of variation in the 0 cents condition; BIC, Bayesian inference criterion.

**Note.** This table shows all direct effects that were added to the model for the ADHD group. First, age effects were added if they affected the parameter values of the predictors according to the Wald statistic. Second, bivariate interactions were added recursively, starting with the bivariate interaction with the largest residual variance. This process was repeated until the BIC-value no longer decreased by adding another interaction.

\* Non-significant age effects not included in the model

\*\* Lowest BIC value when recursively adding direct effects

**Table S2.** *Age and Direct Effects for controls*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Age effects | Wald stat. | p-value | | Direct effects | | BIC-value | | | |
|  |  |  | |  | |  | | | |
| MRTexpGO | 229.6 | 7.3e-52 | | No direct effects | | 2831 | | | |
| MRTunexpGO | 174.4 | 8.3e-40 | | Only age effects | | 2668 | | | |
| ICVexpGO | 85.0 | 3.0e-20 | | RTbenefit <-> MRTunexpGO | | 2614 | | | |
| PcorrExpGO | 89.2 | 3.6e-21 | | MRTexpGO <-> MRTunexpGO | | 2475 | | | |
| PcorrUnexpGO | 53.1 | 3.1e-13 | | PcorrExpNOGO <-> PcorrUnexpNOGO | | 2429 | | | |
| PcorrExpNOGO | 103.2 | 3.0e-24 | | RTbenefit <-> ICVexpGO | | 2398 | | | |
| PcorrUnexpNOGO | 65.5 | 5.8e-16 | | RegB\_5ct <-> RegB\_15ct | | 2388 | | | |
| RTbenefit | 18.4 | 1.8e-5 | | **ICV\_0ct <-> RegB\_15ct** | | **2350\*\*** | | | |
| **RegB\_5ct** | **3.3** | **0.068\*** | | PcorrExpGO <-> PcorrUnexpGO | | 2359 | | | |
| **RegB\_15ct** | **0.4** | **0.52\*** | |  | | |  | |
| MRT\_0ct | 85.9 | 1.9e-20 | |  | | |  | |
| **ICV\_0ct** | **2.7** | **0.098\*** | |  | | |  | |
|  |  |  |  | |  | | |
|  |  |  |  | |  | | |

MRTexpGO, mean reaction time expected go-trials; MRTunexpGO, mean reaction time unexpected go-trials; ICVexpGO, Intraindividual coefficient of variation; PcorrExpGO, percentage correct expected go-trials; PcorrUnexpGO, percentage correct unexpected go-trials; PcorrExpNOGO, percentage correct expected nogo-trials; PcorrUnexpNOGO, percentage correct unexpected nogo-trials; RTbenefit, reaction time benefit; RegB\_5ct, regression coefficient 0 versus 5 cents condition; RegB\_15ct, regression coefficient 0 versus 15 cents condition; MRT\_0ct, mean reaction time in the 0 cents condition; ICV\_0ct, intraindividual coefficient of variation in the 0 cents condition; BIC, Bayesian inference criterion.

**Note.** This table shows all direct effects that were added to the model for the control group. First, age effects were added if they affected the parameter values of the predictors according to the Wald statistic. Second, bivariate interactions were added recursively starting with the bivariate interaction with the largest residual variance. This process was repeated until the BIC-value no longer decreased by adding another interaction.

\* Non-significant age effects not included in the model

\*\* Lowest BIC value when recursively adding direct effects

**Figure S1.** *Task design*

**Note.** The two tasks included in the neuropsychological assessment of cognitive control, timing and reward sensitivity. The time course of a single trial is indicated by the blue band. Different trial types are displayed as partly overlapping squares. The red circles indicate which buttons subjects were instructed to use. A red cross indicates that a subject should withhold a button press on that particular trial type.