**S Table 1 (WAS6)**. <u>Reversed Model Fit Statistics</u>. "Wins" and "Losses" best-fit models generated using data corresponding one subject group was fit it to data corresponding to the other subject group to assess how similar the groups were in terms of network-wide effects. Model fit was assessed using the root mean square error of approximation (RMSEA), chi-square statistic, degrees of freedom (*dof*), Tucker-Lewis index (TLI), and Goodness-of-Fit index (GFI). Reasonable model fits were obtained, indicating that the overall networks *cannot* be differentiated across subjects for both "Wins" and "Losses".

|  | RMSEA | Chi-Square | *dof* | TLI | GFI |
|---|---|---|---|---|---|
| **Marijuana Users** | | | | | |
| "Wins" Controls Model | 0.083 | 805.311 | 63 | 0.856 | 0.937 |
| "Losses" Controls Model | 0.111 | 912.214 | 42 | 0.695 | 0.920 |
| **Healthy Controls** | | | | | |
| "Wins" Users Model | 0.071 | 596.317 | 62 | 0.876 | 0.952 |
| "Losses" Users Model | 0.089 | 515.824 | 36 | 0.790 | 0.954 |

**S Table 2 (WAS 7)**. <u>Hybrid Model Fit Statistics</u>. Paths included in the best-fit models for Users and Controls were merged to create hybrid models for "Wins" and "Losses". Model fits were computed for each subject group to allow quantitative comparison of groups *on the same model*, including the root mean square error of approximation (RMSEA), chi-square statistic, degrees of freedom (*dof*), Tucker-Lewis index (TLI), and Goodness-of-Fit index (GFI). The data from both subject groups were observed to fit the hybrid models well, again indicating the overall networks *cannot* be differentiated across subjects for this task.

| | RMSEA | Chi-Square | *dof* | TLI | GFI |
|---|---|---|---|---|---|
| **Marijuana Users** | | | | | |
| "Wins" Hybrid Model | 0.052 | 311.433 | 55 | 0.943 | 0.975 |
| "Losses" Hybrid Model | 0.056 | 196.926 | 31 | 0.921 | 0.981 |
| **Healthy Controls** | | | | | |
| "Wins" Hybrid Model | 0.047 | 262.29 | 55 | 0.946 | 0.979 |
| "Losses" Hybrid Model | 0.050 | 160.17 | 31 | 0.934 | 0.983 |

**S Table 3**. (was 8) <u>Comparison of Individual Paths Within Hybrid Models</u>. To examine group differences for individual paths, each path coefficient was constrained to be identical for the joint data, and the resulting model fit statistic was computed. Decreases in RMSEA from unconstrained to constrained paths indicated that a particular path was differed between subject groups. This step-wise process was repeated for all possible paths in the hybrid models, yielding the RMSEA values listed above. While no differences were observed across subject groups for "Wins" paths, 10 paths in the "Losses" hybrid model were determined to significantly differ between Users and Controls, shaded and marked by an asterisk (*).

| Hybrid "Wins" Paths | RMSEA | Hybrid "Losses" Paths | RMSEA |
|---|---|---|---|
| Unconstrained Paths | 0.035 | Unconstrained Paths | 0.037 |
| LCaud ⟶ RCaud | 0.035 | LClaust ⟶ LIns | 0.037 |
| lag-LCaud ⟶ lag-RCaud | 0.035 | lag-LClaust ⟶ lag-LIns | 0.038 |
| LCaud ⟶ LMFGv | 0.035 | lag-LClaust ⟶ LIns | 0.043 |
| lag-LCaud ⟶ lag-LMFGv | 0.035 | LClaust ⟶ RMFG | 0.037 |
| LCaud ⟶ LMFG | 0.035 | lag-LClaustr ⟶ lag-RMFG | 0.039 |
| lag-LCaud ⟶ lag-LMFG | 0.035 | lag-LClaust ⟶ RMFG | 0.037 |
| LCaud ⟶ LClaust | 0.035 | PCC ⟶ ACC | 0.036* |
| lag-LCaud ⟶ lag-LClaust | 0.035 | lag-PCC ⟶ lag-ACC | 0.037 |
| lag-LCaud ⟶ LClaust | 0.035 | lag-PCC ⟶ ACC | 0.037 |
| LClaust ⟶ RClaust | 0.035 | lag-ACC ⟶ PCC | 0.036* |
| lag-LClaust ⟶ lag-RClaust | 0.035 | RClaust ⟶ LClaust | 0.036* |
| LClaust ⟶ LMFGv | 0.035 | lag-RClaust ⟶ lag-LClaust | 0.037 |
| lag-LClaust ⟶ lag-LMFGv | 0.035 | lag-RClaust ⟶ LClaust | 0.038 |
| LMFG ⟶ LClaust | 0.035 | RClaust ⟶ RMFG | 0.037 |
| lag-LMFG ⟶ lag-LClaust | 0.035 | lag-RClaust ⟶ lag-RMFG | 0.038 |
| LMFG ⟶ LMFGv | 0.035 | lag-RClaust ⟶ RMFG | 0.048 |
| lag-LMFG ⟶ lag-LMFGv | 0.035 | RClaust ⟶ LIns | 0.037 |
| lag-LMFG ⟶ LMFGv | 0.035 | lag-RClaust ⟶ lag-LIns | 0.036* |
| RClaust ⟶ LCaud | 0.035 | LIns ⟶ PCC | 0.036* |
| lag-RClaust ⟶ lag-LCaud | 0.035 | lag-LIns ⟶ lag-PCC | 0.036* |
| RClaust ⟶ RCaud | 0.035 | lag-LIns ⟶ PCC | 0.039 |
| lag-RClaust ⟶ lag-RCaud | 0.035 | ACC ⟶ LClaust | 0.036* |
| RClaust ⟶ RMFG | 0.035 | lag-ACC ⟶ lag-LClaust | 0.036* |
| lag-RClaust ⟶ lag-RMFG | 0.035 | ACC ⟶ RClaust | 0.037 |
| lag-RClaust ⟶ RMFG | 0.035 | lag-ACC ⟶ lag-RClaust | 0.036* |
| RCaud ⟶ RMFG | 0.035 | lag-ACC ⟶ RClaust | 0.038 |
| lag-RCaud ⟶ lag-RMFG | 0.035 | RMFG ⟶ PCC | 0.036* |
| RCaud ⟶ LMFG | 0.035 | lag-RMFG ⟶ lag-PCC | 0.040 |
| lag-RCaud ⟶ lag-LMFG | 0.035 | | |