**Supplementary file 4**

**Supplementary Table S4: Represents the pipeline used for the group-level (2nd level) analyses of DCMs in SPM12 (v7487)**

|  |  |  |
| --- | --- | --- |
| Process | Function | Settings/options |
| Specify PEB | SPM GUI ('Dynamic Causal Modelling') | The GCM containing 88 subject-specific DCMs were entered. A 88x4 design matrix was entered with the following columns\*: (1) Commonalities (all 1s), (2) Dummy coded age group (mean-centered), (3) Precision score (mean-centered), (4) Interactions between age-group and performance (product of the two; mean centered). We set Fields = {'A'} to model extrinsic connections. We used the 'default' settings for the remaining settings.  |
| Model comparisons: Search nested PEB models (greedy search scheme). | spm\_dcm\_peb\_bmc | Default options used |
| Review results | spm\_dcm\_peb\_review |  |
| Threshold results | spm\_dcm\_peb\_review | > 95% posterior probability using the 'Free Energy' option |
|  \* the PEB analysis was run three times, with the design-matrix re-ordered so that the main regressor of interest was listed just after the commonalities (column 2) as per [https://en.wikibooks.org/wiki/SPM/Parametric\_Empirical\_Bayes\_(PEB)#Search\_over\_nested\_PEB\_models](https://en.wikibooks.org/wiki/SPM/Parametric_Empirical_Bayes_%28PEB%29#Search_over_nested_PEB_models)  |