**Supplementary Material (S4)**

***Table S4:*** *Evaluating performance for default vs altered model parameter settings (ED vs Non-ED)*

|  |  |  |  |
| --- | --- | --- | --- |
| maxdepth | learnrate | penalty.par.val | Accuracy |
| 2 | 0 | lambda.min | 0.812 (0.0501) |
| 2 | 0 | lambda.1se | 0.811 (0.0608) |
| 2 | 0.01 | lambda.min | 0.817 (0.0444) |
| 2 | 0.01 | lambda.1se | 0.805 (0.0554) |
| 2 | 0.1 | lambda.min | 0.816 (0.0505) |
| 2 | 0.1 | lambda.1se | 0.807 (0.0481) |
| 3 | 0 | lambda.min | 0.816 (0.0482) |
| 3 | 0 | lambda.1se | 0.811 (0.0622) |
| 3 | 0.01 | lambda.min | 0.818 (0.0391) |
| 3 | 0.01 | lambda.1se | 0.816 (0.0499) |
| 3 | 0.1 | lambda.min | 0.813 (0.0389) |
| 3 | 0.1 | lambda.1se | 0.809 (0.0552) |
| **4** | **0** | **lambda.min** | **0.826 (0.0419)** |
| 4 | 0 | lambda.1se | 0.811 (0.0532) |
| 4 | 0.01 | lambda.min | 0.818 (0.0444) |
| 4 | 0.01 | lambda.1se | 0.814 (0.0503) |
| 4 | 0.1 | lambda.min | 0.822 (0.0535) |
| 4 | 0.1 | lambda.1se | 0.812 (0.0577) |

*Notes.*

**Max depth** = the maximum number of variables that can be included in a prediction rule. By default, this is set to 3, but we test with maximum depths of 2, 3, and 4 here (conceptually similar to 2-, 3-, and 4-way interactions). Setting higher max depth can improve accuracy of results, but threatens model overfitting that may not generalise from training to test sets of data.

**Learn rate** = the extent to which a given run of the model (out of 500 total) is influenced by results of prior runs of the model. By default, a small non-zero value is used (0.01). We also test a value of 0 (no information from prior runs influencing current model) and 0.10 (a larger amount of information from prior runs included than in the default setting. Higher values tend to yield more simplistic models that may undermine accuracy.

**Penalty.par.val** = the lambda value used to counterbalance model accuracy against model complexity (to safeguard against overfitting). Lambda.min prioritises model selection based on having the lowest cross-validation prediction error, whereas lambda.1se prioritises the least complex model from those available. Lambda.min is more likely to produce an overfitting model, whereas lambda.1se is more likely to produce a simpler yet less accurate model. The default is lambda.1se.

**Accuracy** = the proportion of cases correctly classified by the model, with higher values indicating better model performance. This is our criterion for evaluating which set of parameters yields the best model.

The model highlighted in yellow represents the model reported in the manuscript. The model highlighted with bold typeface (with max depth of 4, learn rate of 0, and lambda min as the penalty parameter value approach) has optimal accuracy and kappa. We can see that the default model has very similar accuracy to the model found to be optimal (difference of 1% in accuracy).