**Supplemental Table 1 |** Mklaren model hyperparameters for optimisation

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| **Hyperparameters** | **Values Used**  **(All randomly assigned prior to 5-fold cross-validation)** | **Range of Top Model Values**  **(From using all RBF kernels)** |
| Sigma  (for clinical RBF kernel) | 0.3 - 1 | 0.5 - 1 |
| Sigma  (for IDP RBF kernel) | 1 - 10 | 5 - 10 |
| Sigma  (for MRI RBF kernel) | 2600 - 3000 | 2650 - 2800 |
| Lambda (for L2 regularization) | 0.1 - 0.9 | 0.1 - 0.75 |
| Delta (number of look-ahead steps for each kernel approximation) | 1 - 10 | 1 - 9 |
| Rank (maximum sum of selected pivot columns to create the combined feature matrix) | 40 - 55 | 41 - 54 |

Abbreviations: RBF = radial basis function, IDP = image-derived phenotypes.