**Appendix 5**. Area under the receiver operating characteristic (AUROC) statistics with 95% confidence intervals for HOOS JR and KOOS JR for each algorithm and model

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PROM | Algorithm | Model | AUROC | 95% CI upper | 95% CI lower |
| HOOS JR | Dummy | Before decision | 0.50 | 0.46 | 0.54 |
| HOOS JR | Logistic LASSO | Before decision | 0.67 | 0.62 | 0.71 |
| HOOS JR | Support vector machine | Before decision | 0.64 | 0.59 | 0.69 |
| HOOS JR | Random forest | Before decision | 0.68 | 0.64 | 0.72 |
| HOOS JR | Dummy | Before surgery | 0.50 | 0.46 | 0.54 |
| HOOS JR | Logistic LASSO | Before surgery | 0.78 | 0.74 | 0.81 |
| HOOS JR | Support vector machine | Before surgery | 0.75 | 0.71 | 0.79 |
| HOOS JR | Random forest | Before surgery | 0.76 | 0.71 | 0.79 |
| HOOS JR | Dummy | Before discharge | 0.50 | 0.46 | 0.54 |
| HOOS JR | Logistic LASSO | Before discharge | 0.77 | 0.74 | 0.81 |
| HOOS JR | Support vector machine | Before discharge | 0.75 | 0.71 | 0.79 |
| HOOS JR | Random forest | Before discharge | 0.76 | 0.71 | 0.80 |
| HOOS JR | Dummy | After discharge | 0.50 | 0.46 | 0.54 |
| HOOS JR | Logistic LASSO | After discharge | 0.77 | 0.73 | 0.81 |
| HOOS JR | Support vector machine | After discharge | 0.76 | 0.72 | 0.80 |
| HOOS JR | Random forest | After discharge | 0.76 | 0.71 | 0.79 |
| HOOS JR | Dummy | Abbreviated 1 | 0.50 | 0.46 | 0.54 |
| HOOS JR | Logistic LASSO | Abbreviated 1 | 0.68 | 0.63 | 0.72 |
| HOOS JR | Support vector machine | Abbreviated 1 | 0.68 | 0.63 | 0.72 |
| HOOS JR | Random forest | Abbreviated 1 | 0.66 | 0.61 | 0.70 |
| HOOS JR | Dummy | Abbreviated 2 | 0.50 | 0.46 | 0.54 |
| HOOS JR | Logistic LASSO | Abbreviated 2 | 0.72 | 0.68 | 0.76 |
| HOOS JR | Support vector machine | Abbreviated 2 | 0.72 | 0.68 | 0.76 |
| HOOS JR | Random forest | Abbreviated 2 | 0.72 | 0.67 | 0.75 |
| KOOS JR | Dummy | Before decision | 0.52 | 0.49 | 0.55 |
| KOOS JR | Logistic LASSO | Before decision | 0.61 | 0.57 | 0.65 |
| KOOS JR | Support vector machine | Before decision | 0.60 | 0.57 | 0.64 |
| KOOS JR | Random forest | Before decision | 0.61 | 0.57 | 0.65 |
| KOOS JR | Dummy | Before surgery | 0.52 | 0.49 | 0.55 |
| KOOS JR | Logistic LASSO | Before surgery | 0.75 | 0.72 | 0.78 |
| KOOS JR | Support vector machine | Before surgery | 0.73 | 0.70 | 0.77 |
| KOOS JR | Random forest | Before surgery | 0.75 | 0.71 | 0.78 |
| KOOS JR | Dummy | Before discharge | 0.52 | 0.49 | 0.55 |
| KOOS JR | Logistic LASSO | Before discharge | 0.75 | 0.72 | 0.78 |
| KOOS JR | Support vector machine | Before discharge | 0.72 | 0.69 | 0.76 |
| KOOS JR | Random forest | Before discharge | 0.75 | 0.71 | 0.78 |
| KOOS JR | Dummy | After discharge | 0.52 | 0.49 | 0.55 |
| KOOS JR | Logistic LASSO | After discharge | 0.75 | 0.71 | 0.78 |
| KOOS JR | Support vector machine | After discharge | 0.73 | 0.69 | 0.76 |
| KOOS JR | Random forest | After discharge | 0.75 | 0.71 | 0.78 |
| KOOS JR | Dummy | Abbreviated 1 | 0.52 | 0.49 | 0.55 |
| KOOS JR | Logistic LASSO | Abbreviated 1 | 0.69 | 0.65 | 0.72 |
| KOOS JR | Support vector machine | Abbreviated 1 | 0.69 | 0.65 | 0.72 |
| KOOS JR | Random forest | Abbreviated 1 | 0.68 | 0.64 | 0.72 |
| KOOS JR | Dummy | Abbreviated 2 | 0.52 | 0.49 | 0.55 |
| KOOS JR | Logistic LASSO | Abbreviated 2 | 0.71 | 0.68 | 0.75 |
| KOOS JR | Support vector machine | Abbreviated 2 | 0.71 | 0.67 | 0.74 |
| KOOS JR | Random forest | Abbreviated 2 | 0.70 | 0.67 | 0.74 |

HOOS JR = Hip Disability and Osteoarthritis Outcome Score for joint replacement; KOOS JR = Knee Disability and Osteoarthritis Outcome Score for joint replacement; LASSO = least absolute shrinkage and selection operator.