|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Variables** | **Logistic Regression Rank**  | **Coefficient** | **Random Forest Rank** | **Frequency** | **Gradient Boosting Machines Rank** | **Frequency** | **Neural Networks Rank** | **Weight** |
| Age\* | 4 | 0.857 | 1 | 13408872 | 1 | 78358 | 5 | 72.4 |
| BMI | 48 | 0.001 | 9 | 155959 | 13 | 1513 | 43 | 3.8 |
| Systolic blood pressure\* | 29 | 0.092 | 13 | 84902 | 9 | 2593 | 29 | 16.3 |
| Total cholesterol\* | 31 | 0.077 | 10 | 146018 | 7 | 3035 | 25 | 19.8 |
| HDL cholesterol\* | 22 | -0.163 | 5 | 583924 | 5 | 6970 | 28 | 17.6 |
| LDL cholesterol | 44 | 0.011 | 17 | 14263 | 21 | 590 | 46 | 1.9 |
| Triglycerides | 42 | 0.029 | 7 | 224574 | 6 | 3886 | 34 | 8.7 |
| CRP | 43 | 0.017 | 32 | 841 | 26 | 413 | 40 | 4.5 |
| Serum fibrinogen | 45 | 0.010 | 37 | 278 | 31 | 182 | 35 | 7.9 |
| gamma GT | 39 | 0.040 | 18 | 6936 | 17 | 936 | 33 | 8.8 |
| Serum creatinine | 36 | 0.042 | 11 | 124101 | 14 | 1345 | 41 | 4.4 |
| HbA1c | 32 | 0.074 | 6 | 298334 | 8 | 2871 | 44 | 3.6 |
| FEV1 | 47 | -0.007 | 26 | 1831 | 35 | 133 | 47 | 0.5 |
| AST/ALT ratio | 46 | 0.010 | 20 | 5862 | 29 | 267 | 48 | 0.0 |
| Female\* | 12 | -0.515 | 2 | 1932619 | 2 | 10861 | 19 | 33.2 |
| Smoking\* | 13 | 0.503 | 4 | 1256277 | 4 | 8262 | 18 | 33.2 |
| Family history of CHD < 60 years | 17 | 0.332 | 30 | 915 | 19 | 633 | 23 | 23.5 |
| Ethnicitya: South Asian | 3 | 0.978 | 3 | 1623115 | 3 | 9699 | 7 | 64.0 |
| Ethnicitya: Black/Afro-Caribbean | 1 | -1.285 | 22 | 3688 | 15 | 1127 | 2 | 97.3 |
| Ethnicitya: Chinese/East Asian | 8 | -0.702 | 47 | 0 | 34 | 161 | 4 | 77.7 |
| Ethnicitya: Other/Mixed | 2 | -1.008 | 40 | 134 | 30 | 258 | 9 | 50.3 |
| Ethnicitya: Unknown | 5 | -0.795 | 48 | 0 | 33 | 166 | 10 | 50.0 |
| SESb: 2nd Townsend quintile | 6 | 0.751 | 8 | 178340 | 10 | 2311 | 14 | 46.0 |
| SESb: 3rd Townsend quintile | 7 | 0.708 | 15 | 35130 | 11 | 1791 | 11 | 49.6 |
| SESb: 4th Townsend quintile | 9 | 0.667 | 16 | 14652 | 18 | 836 | 12 | 48.0 |
| SESb: 5th Townsend quintile (most deprived) | 10 | 0.574 | 34 | 557 | 23 | 453 | 16 | 40.1 |
| SESb: Unknown | 11 | 0.516 | 29 | 1262 | 32 | 174 | 17 | 38.7 |
| Hypertension | 35 | 0.056 | 33 | 736 | 38 | 96 | 20 | 31.2 |
| Diabetes | 40 | 0.039 | 14 | 71285 | 22 | 454 | 31 | 12.3 |
| Blood pressure treatment\* | 28 | 0.092 | 35 | 327 | 40 | 59 | 21 | 30.9 |
| Rheumatoid arthritis | 16 | 0.353 | 42 | 71 | 39 | 96 | 24 | 22.4 |
| Chronic kidney disease | 15 | 0.473 | 45 | 0 | 36 | 118 | 13 | 47.4 |
| Atrial fibrillation | 14 | 0.482 | 23 | 3098 | 25 | 413 | 22 | 25.8 |
| COPD | 18 | 0.300 | 28 | 1370 | 27 | 336 | 1 | 100.0 |
| Severe mental illness | 23 | 0.154 | 46 | 0 | 44 | 37 | 6 | 69.0 |
| Anti-psychotic drug prescribed | 24 | 0.149 | 36 | 289 | 24 | 451 | 32 | 11.2 |
| Oral corticosteroid prescribed | 19 | 0.281 | 21 | 5111 | 20 | 617 | 3 | 78.1 |
| Immunosuppressant prescribed | 27 | 0.093 | 24 | 3050 | 45 | 33 | 8 | 59.2 |
| BMI missing | 25 | -0.131 | 27 | 1629 | 28 | 292 | 15 | 44.4 |
| LDL cholesterol missing | 37 | 0.040 | 39 | 219 | 43 | 37 | 39 | 5.5 |
| Triglycerides missing | 41 | -0.030 | 43 | 40 | 48 | 0 | 45 | 3.6 |
| CRP missing | 34 | -0.058 | 38 | 271 | 41 | 49 | 36 | 7.8 |
| Serum fibrinogen missing | 26 | -0.107 | 41 | 127 | 47 | 10 | 42 | 4.3 |
| gamma GT missing | 33 | -0.064 | 19 | 6217 | 42 | 41 | 38 | 5.6 |
| Serum creatinine missing | 38 | -0.040 | 31 | 877 | 37 | 117 | 37 | 7.3 |
| HbA1c missing | 20 | -0.275 | 12 | 97732 | 12 | 1623 | 27 | 18.0 |
| FEV1 missing | 30 | -0.088 | 44 | 24 | 46 | 22 | 26 | 18.4 |
| AST/ALT ratio missing | 21 | -0.187 | 25 | 1885 | 16 | 967 | 30 | 15.1 |

\*core risk factor for ACC/AHA 10-year CVD risk equations

a reference category is White Caucasian

b reference category is 1st Townsend quintile (most affluent)