**Supplemental Material**

Table S1: Statistical significance tests for classification accuracy differences between 4-View DL ensemble model and different single sequence models. Holm–Bonferroni correction was applied to adjust the base significance level of α=0.05.

|  |  |  |
| --- | --- | --- |
|  | **P Value** | **95% CI** |
| **Supraspinatus** |  |  |
| Algorithm [‘Ax’] | 8.845e-07 | [0.050, 0.116] |
| Algorithm [‘Cor’] | 0.176 | [-0.009, 0.056] |
| Algorithm [‘CorPd’] | 5.757e-05 | [0.039, 0.115] |
| Algorithm [‘Sag’] | 0.055 | [-0.00046, 0.055] |
| Algorithm [‘SagT1’] | 3.538e-06 | [0.049, 0.121] |
|  |  |  |
| **Infraspinatus** |  |  |
| Algorithm [‘Ax’] | 9.06e-04 | [0.026, 0.102] |
| Algorithm [‘Cor’] | 0.525 | [-0.024, 0.051] |
| Algorithm [‘CorPd’] | 3.95e-04 | [0.034, 0.118] |
| Algorithm [‘Sag’] | 0.072 | [-0.003, 0.069] |
| Algorithm [‘SagT1’] | 0.002 | [0.023, 0.098] |
|  |  |  |
| **Subscapularis** |  |  |
| Algorithm [‘Ax’] | 0.610 | [-0.027, 0.051] |
| Algorithm [‘Cor’] | 5.355e-03 | [0.016, 0.093] |
| Algorithm [‘CorPd’] | 1.148e-09 | [0.103, 0.199] |
| Algorithm [‘Sag’] | 0.104 | [-0.005, 0.059] |
| Algorithm [‘SagT1’] | 4.374e-06 | [0.051, 0.127] |

Table S2: Statistical significance tests for difference of model overall classification accuracy between 3T and 1.5T.

|  |  |  |
| --- | --- | --- |
| **Tendon** | **P Value** | **95% CI** |
| Supraspinatus | 0.286 | [-0.033, 0.109] |
| Infraspinatus | 0.738 | [-0.067, 0.094] |
| Subscapularis | 0.734 | [-0.065, 0.092] |

Table S3: Tear Type and Overall Accuracy of Clinical Reader on 1.5T and 3T.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Tendon** | **Mag Field** | **Full-thickness** | | **Partial** | | **None** | | **Overall Accuracy** | |
| Supraspinatus | 3 | 0.88 | [0.80, 0.93] | 0.81 | [0.74, 0.86] | 0.65 | [0.55, 0.75] | 0.79 | [0.74, 0.83] |
| Supraspinatus | 1.5 | 0.87 | [0.76, 0.93] | 0.82 | [0.71, 0.89] | 0.65 | [0.51, 0.77] | 0.79 | [0.73, 0.84] |
| Infraspinatus | 3 | 0.9 | [0.80, 0.95] | 0.77 | [0.69, 0.83] | 0.61 | [0.52, 0.69] | 0.74 | [0.69, 0.78] |
| Infraspinatus | 1.5 | 0.86 | [0.72, 0.93] | 0.84 | [0.73, 0.90] | 0.55 | [0.43, 0.66] | 0.73 | [0.67, 0.79] |
| Subscapularis | 3 | 0.76 | [0.61, 0.86] | 0.77 | [0.70, 0.83] | 0.67 | [0.58, 0.75] | 0.73 | [0.68, 0.78] |
| Subscapularis | 1.5 | 0.74 | [0.55, 0.87] | 0.83 | [0.73, 0.89] | 0.59 | [0.48, 0.70] | 0.72 | [0.65, 0.78] |

Table S4: Negative Predictive Value (NPV) of the 4-view DL Ensemble Model for Rotator Cuff Tear Detection.

|  |  |  |
| --- | --- | --- |
| **Tendon** | **NPV** | **95% CI** |
| Supraspinatus | 0.77 | [0.69, 0.84] |
| Infraspinatus | 0.78 | [0.70, 0.84] |
| Subscapularis | 0.76 | [0.69, 0.81] |