|  |  |  |  |
| --- | --- | --- | --- |
|  | Specificity(95% CI) | Sensitivity(95% CI) | Accuracy(95% CI) |
| Unassisted general radiologist 1  | **0.857****(0.654, 0.950)** | 0.869(0.788, 0.922) | 0.867(0.794, 0.916) |
| Assisted general radiologist 1  | 0.810(0.600, 0.923) | **0.919****(0.849, 0.958)** | **0.900****(0.833, 0.942)** |
| Unassisted general radiologist 2  | 0.952(0.773, 0.992) | 0.939(0.874, 0.972) | 0.942(0.884, 0.971) |
| Assisted general radiologist 2  | 0.952(0.773, 0.992) | 0.939(0.874, 0.972) | 0.942(0.884, 0.971) |
| Unassisted general radiologist 3  | **0.952****(0.773, 0.992)** | 0.798(0.708, 0.865) | 0.825(0.747, 0.883) |
| Assisted general radiologist 3  | 0.905(0.711, 0.973) | **0.949****(0.887, 0.978)** | **0.942****(0.884, 0.971)** |
| Unassisted general radiologist 4  | 0.810(0.600, 0.923) | **0.949****(0.887, 0.978)** | 0.925(0.864, 0.960) |
| Assisted general radiologist 4  | **0.857****(0.654, 0.950)** | 0.939(0.874, 0.972) | 0.925(0.864, 0.960) |
| Unassisted general radiologist 5  | **0.952****(0.773, 0.992)** | 0.859(0.777, 0.914) | **0.875****(0.804, 0.923)** |
| Assisted general radiologist 5  | 0.905(0.711, 0.973) | 0.859(0.777, 0.914) | 0.867(0.794, 0.916) |
| Unassisted general radiologist 6  | 0.524(0.324, 0.717) | **0.980****(0.929, 0.994)** | 0.900(0.833, 0.942) |
| Assisted general radiologist 6  | **0.667****(0.454, 0.828)** | 0.949(0.887, 0.978) | 0.900(0.833, 0.942) |
| Unassisted general radiologist 7  | 0.857(0.654, 0.950) | **0.939****(0.874, 0.972)** | 0.925(0.864, 0.960) |
| Assisted general radiologist 7  | **0.952****(0.773, 0.992)** | 0.929(0.861, 0.965) | **0.933****(0.874, 0.966)** |
| Unassisted orthopedic surgeon 1 | 0.810(0.600, 0.923) | 0.828(0.742, 0.890)  | 0.825(0.747, 0.883) |
| Assisted orthopedic surgeon 1 | **0.857****(0.654, 0.950)**  | 0.828(0.742, 0.890)  | **0.833****(0.757, 0.889)**  |
| Unassisted orthopedic surgeon 2 | 0.714(0.500, 0.862) | 0.899(0.824, 0.944)  | 0.867(0.794, 0.916) |
| Assisted orthopedic surgeon 2 | **0.762****(0.549, 0.894)** | **0.929****(0.861, 0.965)** | **0.900****(0.833, 0.942)** |

**S2a Table. Comparison of Individual Unassisted and Assisted Clinical Experts in Abnormality Detection on the Validation Set.**

Radiologists 1-4 completed unassisted first and radiologists 5-7 completed assisted first. Orthopedic surgeons 1 and 2 both completed unassisted first. We used 95% Wilson score confidence intervals to estimate the variability in specificity, sensitivity, and accuracy. Bold text indicates better performance.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Specificity(95% CI) | Sensitivity(95% CI) | Accuracy(95% CI) |
| Unassisted general radiologist 1  | 0.903(0.805, 0.955) | 0.862(0.751, 0.928) | 0.883(0.814, 0.929) |
| Assisted general radiologist 1  | **0.984****(0.914, 0.997)** | **0.914****(0.814, 0.963)** | **0.950****(0.895, 0.977)** |
| Unassisted general radiologist 2  | 0.984(0.914, 0.997) | 0.879(0.771, 0.940) | 0.933(0.874, 0.966) |
| Assisted general radiologist 2  | **1.000****(0.942, 1.000)** | **0.914****(0.814, 0.963)** | **0.958****(0.906, 0.982)** |
| Unassisted general radiologist 3  | 0.887(0.785, 0.944) | **0.931****(0.836, 0.973)** | **0.908****(0.843, 0.948)** |
| Assisted general radiologist 3  | **0.935****(0.846, 0.975)** | 0.862(0.751, 0.928) | 0.900(0.833, 0.942) |
| Unassisted general radiologist 4  | 0.935(0.846, 0.975) | 0.914(0.814, 0.963) | 0.925(0.864, 0.960) |
| Assisted general radiologist 4  | **1.000****(0.942, 1.000)** | **0.931****(0.836, 0.973)** | **0.967****(0.917, 0.987)** |
| Unassisted general radiologist 5  | 0.919(0.825, 0.965) | 0.862(0.751, 0.928) | 0.892(0.823, 0.936) |
| Assisted general radiologist 5  | **0.968****(0.890, 0.991)** | **0.897****(0.792, 0.952)** | **0.933****(0.874, 0.966)** |
| Unassisted general radiologist 6  | 0.919(0.825, 0.965) | **0.948****(0.859, 0.982)** | **0.933****(0.874, 0.966)** |
| Assisted general radiologist 6  | **0.968****(0.890, 0.991)** | 0.862(0.751, 0.928) | 0.917(0.853, 0.954) |
| Unassisted general radiologist 7  | 0.984(0.914, 0.997) | **0.948****(0.859, 0.982)** | **0.967****(0.917, 0.987)** |
| Assisted general radiologist 7  | 0.984(0.914, 0.997) | 0.931(0.836, 0.973) | 0.958(0.906, 0.982) |
| Unassisted orthopedic surgeon 1 | 0.823(0.710, 0.898) | 0.948(0.859, 0.982) | 0.883(0.814, 0.929) |
| Assisted orthopedic surgeon 1 | **0.887****(0.785, 0.944)** | **0.966****(0.883, 0.990)** | **0.925****(0.864, 0.960)** |
| Unassisted orthopedic surgeon 2 | 0.903(0.805, 0.955) | **0.931****(0.836, 0.973)** | 0.917(0.853, 0.954) |
| Assisted orthopedic surgeon 2 | **0.968****(0.890, 0.991)** | 0.914(0.814, 0.963) | **0.942****(0.884, 0.971)** |

**S2b Table. Comparison of Individual Unassisted and Assisted Clinical Experts in ACL Tear Detection on the Validation Set.**

Radiologists 1-4 completed unassisted first and radiologists 5-7 completed assisted first. Orthopedic surgeons 1 and 2 both completed unassisted first. We used 95% Wilson score confidence intervals to estimate the variability in specificity, sensitivity, and accuracy. Bold text indicates better performance.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Specificity(95% CI) | Sensitivity(95% CI) | Accuracy(95% CI) |
| Unassisted general radiologist 1  | 0.793(0.672, 0.877) | 0.677(0.554, 0.780) | 0.733(0.648, 0.804) |
| Assisted general radiologist 1  | **0.828****(0.711, 0.904)** | **0.774****(0.656, 0.860)** | **0.800****(0.720, 0.862)** |
| Unassisted general radiologist 2  | **0.897****(0.792, 0.952)** | 0.806(0.691, 0.886) | 0.850(0.775, 0.903) |
| Assisted general radiologist 2  | 0.828(0.711, 0.904) | **0.871****(0.766, 0.933)** | 0.850(0.775, 0.903) |
| Unassisted general radiologist 3  | **0.897****(0.792, 0.952)** | 0.758(0.638, 0.848) | 0.825(0.747, 0.883) |
| Assisted general radiologist 3  | 0.879(0.771, 0.940) | **0.855****(0.747, 0.922)** | **0.867****(0.794, 0.916)** |
| Unassisted general radiologist 4  | **0.966****(0.883, 0.990)** | 0.710(0.587, 0.808) | 0.833(0.757, 0.889) |
| Assisted general radiologist 4  | 0.948(0.859, 0.982) | **0.871****(0.766, 0.933)** | **0.908****(0.843, 0.948)** |
| Unassisted general radiologist 5  | 0.862(0.751, 0.928) | 0.694(0.570, 0.794) | 0.775(0.692, 0.841) |
| Assisted general radiologist 5  | **0.914****(0.814, 0.963)** | **0.770****(0.651, 0.858)** | **0.833****(0.757, 0.889)** |
| Unassisted general radiologist 6  | **0.931****(0.836, 0.973)** | **0.839****(0.728, 0.910)** | **0.883****(0.814, 0.929)** |
| Assisted general radiologist 6  | 0.879(0.771, 0.940) | 0.758(0.638, 0.848) | 0.817(0.738, 0.876) |
| Unassisted general radiologist 7  | **0.897****(0.792, 0.952)** | **0.823****(0.710, 0.898)** | **0.858****(0.785, 0.910)** |
| Assisted general radiologist 7  | 0.882(0.847, 0.910) | 0.820(0.781, 0.853) | 0.849(0.823, 0.871) |
| Unassisted orthopedic surgeon 1 | 0.603(0.475, 0.719) | 0.790(0.674, 0.873) | 0.700(0.613, 0.775) |
| Assisted orthopedic surgeon 1 | **0.621****(0.492, 0.734)** | **0.823****(0.710, 0.898)** | **0.725****(0.639, 0.797)** |
| Unassisted orthopedic surgeon 2 | 0.862(0.751, 0.928) | 0.887(0.785, 0.944) | 0.875(0.804, 0.923) |
| Assisted orthopedic surgeon 2 | 0.862(0.751, 0.928) | 0.887(0.785, 0.944) | 0.875(0.804, 0.923) |

**S2c Table. Comparison of Individual Unassisted and Assisted Clinical Experts in Meniscal Tear Detection on the Validation Set.**

Radiologists 1-4 completed unassisted first and radiologists 5-7 completed assisted first. Orthopedic surgeons 1 and 2 both completed unassisted first. We used 95% Wilson score confidence intervals to estimate the variability in specificity, sensitivity, and accuracy. Bold text indicates better performance.