

Table S1 The classification results at different age groups (NC vs. LSIL+)

Model	AUC	Accuracy	Sensitivity	Specificity	PPV	NPV
Clinical only	0.692 (0.668–0.715)	0.681 (0.657–0.705)	0.644 (0.607–0.680)	0.713 (0.681–0.744)	0.657 (0.620–0.693)	0.710 (0.668–0.732)
Age <50	0.685 (0.658–0.711)	0.674 (0.646–0.700)	0.623 (0.582–0.662)	0.719 (0.683–0.754)	0.668 (0.626–0.708)	0.678 (0.641–0.713)
Age ≥50	0.728 (0.673–0.779)	0.714 (0.658–0.765)	0.750 (0.661–0.826)	0.690 (0.615–0.757)	0.617 (0.531–0.698)	0.805 (0.733–0.866)
CNN only	0.945 (0.933–0.956)	0.882 (0.865–0.898)	0.901 (0.876–0.922)	0.867 (0.841–0.890)	0.853 (0.825–0.878)	0.910 (0.888–0.930)
Age <50	0.942 (0.928–0.955)	0.877 (0.858–0.895)	0.907 (0.880–0.930)	0.851 (0.821–0.878)	0.847 (0.816–0.874)	0.910 (0.884–0.931)
Age ≥50	0.955 (0.924–0.976)	0.903 (0.863–0.935)	0.871 (0.796–0.926)	0.925 (0.876–0.960)	0.886 (0.813–0.938)	0.915 (0.863–0.952)
CNN + clinical	0.953 (0.941–0.963)	0.886 (0.869–0.901)	0.932 (0.911–0.950)	0.846 (0.819–0.870)	0.838 (0.810–0.863)	0.936 (0.916–0.953)
Age <50	0.951 (0.937–0.962)	0.882 (0.862–0.899)	0.938 (0.915–0.956)	0.831 (0.799–0.859)	0.833 (0.803–0.862)	0.936 (0.913–0.955)
Age ≥50	0.962 (0.932–0.981)	0.903 (0.863–0.935)	0.905 (0.837–0.952)	0.902 (0.848–0.942)	0.861 (0.786–0.917)	0.935 (0.886–0.967)

Data were presented with 95% CIs. NC, normal cervix; LSIL, low-grade squamous intraepithelial lesions; AUC, receiver operating characteristic curve; PPV, positive predictive value; NPV, negative predictive value; CNN, convolutional neural network; CI, confidence interval.

Table S2 The classification results at different age groups (HSIL- vs. HSIL+)

Model	AUC	Accuracy	Sensitivity	Specificity	PPV	NPV
Clinical only	0.700 (0.676–0.723)	0.675 (0.650–0.698)	0.724 (0.679–0.766)	0.655 (0.626–0.684)	0.451 (0.414–0.490)	0.858 (0.833–0.881)
Age <50	0.691 (0.664–0.717)	0.671 (0.644–0.697)	0.705 (0.653–0.753)	0.658 (0.625–0.689)	0.443 (0.401–0.486)	0.852 (0.823–0.878)
Age ≥50	0.735 (0.680–0.785)	0.690 (0.632–0.742)	0.800 (0.699–0.879)	0.644 (0.574–0.709)	0.482 (0.397–0.568)	0.886 (0.824–0.932)
CNN only	0.887 (0.870–0.903)	0.797 (0.776–0.818)	0.802 (0.761–0.839)	0.796 (0.770–0.819)	0.606 (0.564–0.647)	0.911 (0.891–0.928)
Age <50	0.878 (0.859–0.896)	0.783 (0.759–0.806)	0.814 (0.769–0.854)	0.771 (0.742–0.798)	0.579 (0.533–0.623)	0.915 (0.892–0.934)
Age ≥50	0.928 (0.892–0.955)	0.859 (0.813–0.897)	0.753 (0.647–0.840)	0.902 (0.853–0.939)	0.762 (0.657–0.848)	0.898 (0.848–0.936)
CNN + clinical	0.900 (0.884–0.915)	0.807 (0.786–0.826)	0.823 (0.783–0.858)	0.800 (0.775–0.823)	0.618 (0.576–0.658)	0.920 (0.901–0.937)
Age <50	0.892 (0.873–0.909)	0.791 (0.767–0.814)	0.826 (0.781–0.865)	0.778 (0.749–0.805)	0.589 (0.544–0.634)	0.920 (0.899–0.939)
Age ≥50	0.937 (0.903–0.962)	0.872 (0.828–0.909)	0.812 (0.712–0.888)	0.898 (0.848–0.935)	0.767 (0.666–0.849)	0.920 (0.873–0.954)

Data were presented with 95% CIs. HSIL, high-grade squamous intraepithelial lesions; AUC, receiver operating characteristic curve; PPV, positive predictive value; NPV, negative predictive value; CNN, convolutional neural network; CI, confidence interval.