

**Supplementary Material S15.**

Average prediction performance results of TSCytoPred with other comparison methods based on the 5-fold cross validation using COVID-19 patients with two time points.

Testing scenario	w/o infer	w/ infer (TSCytoPred)	w/ infer (NN)	w/ infer (Linear)	w/ infer (ElasticNet)	w/ infer (Lasso)	w/ infer (Ridge)	w/ infer (CNN-LSTM)
Timepoint-level	$0.565 \pm 0.028$	$0.602 \pm 0.042$	$0.570 \pm 0.051$	$0.596 \pm 0.053$	$0.540 \pm 0.037$	$0.547 \pm 0.041$	$0.562 \pm 0.072$	$0.573 \pm 0.061$
Patient-worst-level	$0.568 \pm 0.034$	$0.592 \pm 0.115$	$0.565 \pm 0.121$	$0.508 \pm 0.101$	$0.526 \pm 0.164$	$0.550 \pm 0.126$	$0.528 \pm 0.108$	$0.527 \pm 0.190$