

# *Evaluation of a radiological severity score to predict treatment outcome in adults with pulmonary tuberculosis.*

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**Objective:** To refine and evaluate a recently published radiological disease severity score for the prediction of month 2 and end of treatment outcomes in pulmonary tuberculosis (TB). Radiological extent of disease has been linked to early and late outcomes of antituberculosis treatment, but no validated tools are available to quantify this parameter.

**Design:** We enrolled 449 adult, human immunodeficiency virus negative participants with smear- or culture proven TB from three TB biomarker studies in Cape Town, South Africa. Full-size posteroanterior baseline chest X-rays (CXRs) were evaluated by two clinicians after standardising the published scoring method and the predictive ability assessed for month 2 and final treatment outcomes.

**Results:** Baseline CXR scores were significantly different in the favourable and unfavourable outcome groups; however, the predictive ability for outcomes at all time points was poor (ROC area under curve 0.68). Inter-reader reliability was high ( $r = 0.86$ ,  $P = 0.001$ ), but agreement in cavity identification was modest.

**Conclusion:** Standardised application of a CXR score derived from the presence of cavities and overall extent of parenchymal disease in active TB showed good inter- and intrareader reliability. Scores differed significantly in treatment outcome groups but did not allow accurate outcome prediction.