

RQS	Item	Components and their score
1	Image protocol quality	Well documented protocol (+1) AND/OR publicly available protocol (+1)
2	Multiple segmentation	Testing feature robustness to segmentation variability: e.g. different physicians/algorithms/software (+1)
3	Phantom study	Testing feature robustness to scanner variability: e.g. different vendors/scanners (+1) 0
4	Multiple time points	Testing feature robustness to temporal variability: e.g. organ movement/expansion/shrinkage (+1)
5	Feature reduction	Either feature reduction OR adjustment for multiple testing is implemented (+ 3); otherwise (-3)
6	Multivariable analysis	Non-radiomic feature are included in/considered for model building (+1)
7	Biological correlates	Detecting and discussing correlation of biology and radiomic features
8	Cut-off analysis	Determining risk groups by either median, pre-defined cut-off or continuous risk variable (+1)
9	Discrimination statistics	Discrimination statistic and its statistical significance are reported (+ 1); a resampling technique is also applied (+1)
10	Calibration statistics	Calibration statistic and its statistical significance are reported (+ 1); a resampling technique is also applied (+1)
11	Prospective design	Prospective validation of a radiomics signature in an appropriate trial (+7)
12	Validation	Validation is missing (-5) OR internal validation (+2) OR external validation on single dataset from one institute (+3) OR external validation on two datasets from two distinct institutes (+4) OR validation of a previously published signature (+4) validation is based on three or more datasets from distinct institutes (+5)
13	Comparison to “gold standard”	Evaluating model’s agreement with/superiority to the current “gold standard” (+2)
14	Potential clinical application	Discussing model applicability in a clinical setting (+2).
15	Cost-effectiveness analysis	Performing a cost-effectiveness of the clinical application (+1)
16	Open science and data	Open source scans (+1) AND/OR open source segmentations (+1) AND/OR open source code (+1) AND/OR open source representative features and segmentations (+1)