

METRICS Tool v1.0

Please fill out all conditions first for relevant sections and then all active items to calculate METRICS score.

Please note that default option is "No".

? Stands for explanation of items and conditions.

C Stands for conditional items or sections.

Items/Conditions	Definitions	Weights	Options
Study Design			
Item#1	? Adherence to radiomics and/or machine learning-specific checklists or guidelines	0.0368	☒ Yes ☐ No
Item#2	? Eligibility criteria that describe a representative study population	0.0735	☒ Yes ☐ No
Item#3	? High-quality reference standard with a clear definition	0.0919	☒ Yes ☐ No
Imaging Data			
Item#4	? Multi-center	0.0438	☐ Yes ☒ No
Item#5	? Clinical translatability of the imaging data source for radiomics analysis	0.0292	☒ Yes ☐ No
Item#6	? Imaging protocol with acquisition parameters	0.0438	☒ Yes ☐ No
Item#7	? The interval between imaging used and reference standard	0.0292	☒ Yes ☐ No
Segmentation C			
Condition#1	? Does the study include segmentation?		☒ Yes ☐ No
Condition#2	? Does the study include fully automated segmentation?		☐ Yes ☒ No
Item#8	? Transparent description of segmentation methodology	0.0337	☒ Yes ☐ No
Item#9	? Formal evaluation of fully automated segmentation C	0.0225	Yes No
Item#10	? Test set segmentation masks produced by a single reader or automated tool	0.0112	☒ Yes ☐ No
Image Processing and Feature Extraction			
Condition#3	? Does the study include hand-crafted feature extraction?		☐ Yes ☒ No
Item#11	? Appropriate use of image preprocessing techniques with transparent description	0.0622	☐ Yes ☒ No
Item#12	? Use of standardized feature extraction software C	0.0311	Yes No
Item#13	? Transparent reporting of feature extraction parameters, otherwise providing a default configuration statement	0.0415	☒ Yes ☐ No
Feature Processing			
Condition#4	? Does the study include tabular data?		☒ Yes ☐ No
Condition#5	? Does the study include end-to-end deep learning?		☐ Yes ☒ No
Item#14	? Removal of non-robust features C	0.0200	☒ Yes ☐ No
Item#15	? Removal of redundant features C	0.0200	☒ Yes ☐ No
Item#16	? Appropriateness of dimensionality compared to data size C	0.0300	☒ Yes ☐ No
Item#17	? Robustness assessment of end-to-end deep learning pipelines C	0.0200	Yes No
Preparation for Modeling			
Item#18	? Proper data partitioning process	0.0599	☒ Yes ☐ No
Item#19	? Handling of confounding factors	0.0300	☒ Yes ☐ No
Metrics and Comparison			
Item#20	? Use of appropriate performance evaluation metrics for task	0.0352	☒ Yes ☐ No
Item#21	? Consideration of uncertainty	0.0234	☒ Yes ☐ No
Item#22	? Calibration assessment	0.0176	☐ Yes ☒ No
Item#23	? Use of uni-parametric imaging or proof of its inferiority	0.0117	☒ Yes ☐ No

?

Item#24

Comparison with a non-radiomic approach or proof of added clinical value

0.0293

☒ Yes

☐ No

?

Item#25

Comparison with simple or classical statistical models

0.0176

☒ Yes

☐ No

Testing

?

Item#26

Internal testing

0.0375

☒ Yes

☐ No

?

Item#27

External testing

0.0749

☐ Yes

☒ No

Open Science

?

Item#28

Data availability

0.0075

☐ Yes

☒ No

?

Item#29

Code availability

0.0075

☐ Yes

☒ No

?

Item#30

Model availability

0.0075

☐ Yes

☒ No

?

Total METRICS score:

76.1%

?

Quality category:

Good

?

Publication ID:

If you publish any work which uses this tool, please cite the following publication:

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