

N	Question	Study quality feature
1.	<b><u>Was the research question in this paper clearly stated?</u></b> -Biomarker description -Study objectives -Pre-specified hypotheses	Hypothesis/Objective (0,1,2,3)
2.	<b><u>Was the study design clearly specified and defined?</u></b> -Characteristics of the study participants -Inclusion and exclusion criteria	Study population selection (0,1,2)
3.	<b><u>Was the study population representative of the target/reference population under investigation?</u></b> -Sampling frame (study population source) -Participation rate (i.e. eligible persons at least 50%)? -Sample size justification/ power description	Study population representativeness (0,1,2,3)
4.	<b><u>Was the study population clearly described?</u></b> -Study population characteristics (demographic, clinical and social) -Exposures and potential confounders -Were missing values and strategies to deal with missing data reported	Study population characteristics (0,1,2,3)
5.	<b><u>Were statistical analyses adequately described?</u></b> -Statistical test for correlation reported (Spearman/Pearson) -Univariable or multivariable linear regression -Key potential confounding variables measured and adjusted statistically in reported analyses -Significance level tested and reported	Statistical analysis (0,1,2,3)
6.	<b><u>Are the results interpreted in the context of the pre-specified hypotheses?</u></b> -Interpretation of the results considering results from similar studies -Biological context	Data interpretation (0,1,2)
7.	<b><u>Was the biological material and assay methods clearly described?</u></b> - Assay methods (preservation and storage, detailed protocol, including specific reagents or kits used) -Quality control procedures	Specimen characteristics and assay methods (0,1,2,3,4)

	-Reproducibility assessments -Quantitation methods and scoring and reporting protocols	
8.	<b><u>Were the laboratory measurements of the biomarkers clearly reported?</u></b> -Laboratory/place of measurement -Blinded analysis	<b>Laboratory measurement (0,1,2)</b>
9.	<b><u>Were biomarkers adequately handled in statistical analysis and in data presentation?</u></b> --Biomarker variable distribution -Outlier detection and handling -Possible errors resulting from measurement inaccuracies discussed	<b>Biomarker data modeling (0,1,2,3)</b>

**Every positive evaluation grade 1 point**

**Quality Rating: strong (18-25 points), moderate (9-17 Points), or Poor ( $\leq 8$  Points)**