

Supplementary Table 1. Preferred Reporting Items for Systematic Reviews and Meta-analyses Checklist (Adapted From McInnes et al¹⁸)

Section/topic	No.	PRISMA-DTA checklist item	Reported on page No.
TITLE/ABSTRACT			
Title	1	Identify the report as a systematic review (+/- meta-analysis) of DTA studies.	1
Abstract	2	Abstract: see PRISMA-DTA for abstracts.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3
Clinical role of index test	D1	State the scientific and clinical background, including the intended use and clinical role of the index test, and if applicable, the rationale for minimally acceptable test accuracy (or minimum difference in accuracy for comparative design).	3
Objectives	4	Provide an explicit statement of question(s) being addressed in terms of participants, index test(s), and target condition(s).	4
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (eg, web address), and, if available, provide registration information including registration number.	4
Eligibility criteria	6	Specify study characteristics (participants, setting, index test(s), reference standard(s), target condition(s), and study design) and report characteristics (eg, years considered, language, and publication status) used as criteria for eligibility, giving rationale.	5
Information sources	7	Describe all information sources (eg, databases with dates of coverage and contact with study authors to identify additional studies) in the search and date last searched.	5
Search	8	Present full search strategies for all electronic databases and other sources searched, including any limits used, such that they could be repeated.	5
Study selection	9	State the process for selecting studies (ie, screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	5
Data collection process	10	Describe method of data extraction from reports (eg, piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5
Definitions for data extraction	11	Provide definitions used in data extraction and classifications of target condition(s), index test(s), reference standard(s), and other characteristics (eg, study design and clinical setting).	5
Risk of bias and applicability	12	Describe methods used for assessing risk of bias in individual studies and concerns regarding the applicability to the review question.	5, 6
Diagnostic accuracy measures	13	State the principal diagnostic accuracy measure(s) reported (eg, sensitivity and specificity) and state the unit of assessment (eg, per-patient and per-lesion).	5, 6
Synthesis of results	14	Describe methods of handling data, combining results of studies and describing variability between studies. This could include, but is not limited to: (a) handling of multiple definitions of target condition, (b) handling of multiple thresholds of test positivity, (c) handling multiple index test readers, (d) handling of indeterminate test results, (e) grouping and comparing tests, and (f) handling of different reference standards.	5, 6
Meta-analysis	D2	Report the statistical methods used for meta-analyses, if performed.	5, 6
Additional analyses	16	Describe methods of additional analyses (eg, sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	4
RESULTS			
Study selection	17	Provide numbers of studies screened, assessed for eligibility, included in the review (and included in meta-analysis, if applicable) with reasons for exclusions at each stage, ideally with a flow diagram.	6
Study characteristics	18	For each included study provide citations and present key characteristics including: (a) participant characteristics (presentation, prior testing), (b) clinical setting, (c) study design, (d) target condition definition, (e) index test, (f) reference standard, (g) sample size, and (h) funding sources.	6, Table 1
Risk of bias and applicability	19	Present evaluation of risk of bias and concerns regarding applicability for each study.	7-9
Results of individual studies	20	For each analysis in each study (eg, unique combination of index test, reference standard, and positivity threshold) report 2×2 data (TP, FP, FN, and TN) with estimates of diagnostic accuracy and confidence intervals, ideally with a forest or receiver ROC plot.	7-9, Table 2

Supplementary Table 1. Continued

Section/topic	No.	PRISMA-DTA Checklist Item	Reported on page No.
Synthesis of results	21	Describe test accuracy, including variability; if meta-analysis was done, include results and confidence intervals.	7-9, Table 2
Additional analysis	23	Give results of additional analyses, if done (eg, sensitivity or subgroup analyses, meta-regression; analysis of index test: failure rates, proportion of inconclusive results, adverse events).	None
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence.	10-14
Limitations	25	Discuss limitations from included studies (eg, risk of bias and concerns regarding applicability) and from the review process (eg, incomplete retrieval of identified research).	10-14
Conclusions	26	Provide a general interpretation of the results in the context of other evidence. Discuss implications for future research and clinical practice (eg, the intended use and clinical role of the index test).	10-14
FUNDING			
Funding	27	For the systematic review, describe the sources of funding and other support and the role of the funders.	14

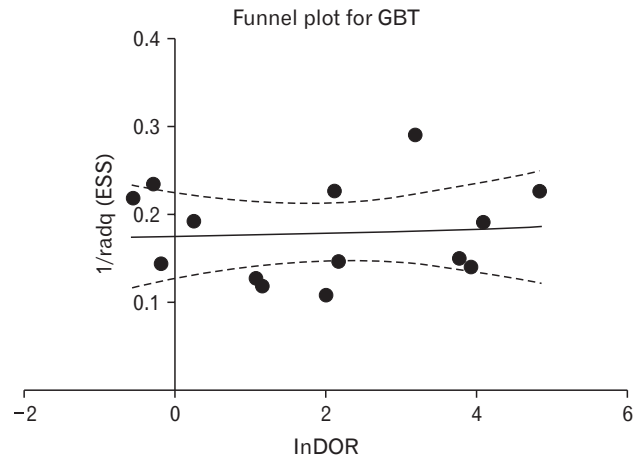
For more information, visit: www.prisma-statement.org.

DTA, diagnostic test accuracy; PRISMA-DTA, Preferred Reporting Items for Systematic Reviews and Meta-analyses for diagnostic test accuracy; TP, true positive; FP, false positive; FN, false negative; TN, true negative; ROC, receiver operator characteristic.

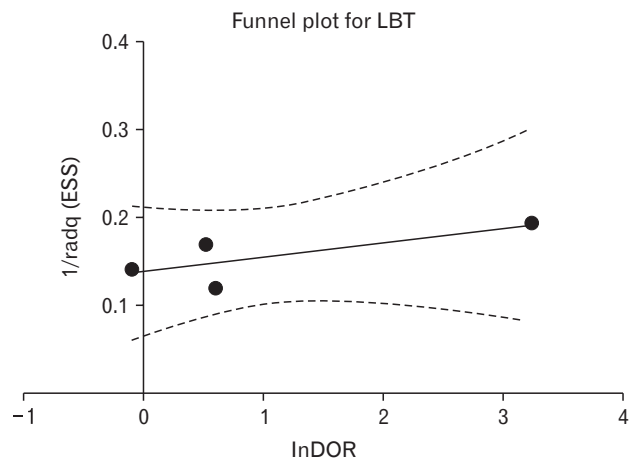
Supplementary Table 2. Evaluation of Quality of Studies According to the Quality Assessment of Diagnostic Accuracy Studies Version 2 Score

	Risk bias				Applicability concern		
	Patients selection	Index test	Reference standard	Flow timing	Patients selection	Index test	Reference standard
Berthold 2009	●	●	●	●	●	●	●
Corazza 1990	●	●	●	●	●	●	●
Donald 1992	●	●	●	●	●	●	●
Erdogan 2015	●	●	●	●	●	●	●
Ghoshal 2006	●	●	●	●	●	●	●
Ghoshal 2014	●	●	●	●	●	●	●
Kaye 1995	●	●	●	●	●	●	●
Kerlin 1988	●	●	●	●	●	●	●
King 1986	●	●	●	●	●	●	●
MacMahon 1996	●	●	●	●	●	●	●
Pignata 1990	●	●	●	●	●	●	●
Rao	●	●	●	●	●	●	●
Stotzer 2000	●	●	●	●	●	●	●
Sundin 2018	●	●	●	●	●	●	●

Red = high risk; yellow = intermediate /unclear risk; green = low risk.



Supplementary Figure 1. Deeks' funnel plot for glucose breath test (GBT). ESS, effective sample size; lnDOR, logarithm of diagnostic Odds ratio.



Supplementary Figure 2. Deeks' funnel plot for lactulose breath test (LBT). ESS, effective sample size; $\ln\text{DOR}$, logarithm of diagnostic Odd ratio.