PRISMA-DTA Checklist

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Molecular Testing in Oncocytic (Hürthle Cell) Bethesda III/IV Thyroid Nodules: A Systematic Review and Diagnostic Test Accuracy Meta-analysis. Checklist from McInnes MDF et al., JAMA 2018;319:388–396. Locations refer to manuscript sections; add page numbers after final formatting.

PRISMA-DTA Checklist

Section / topic	#	Checklist item	Reported in (section; page)
TITLE / ABSTRACT			
Title	1	Identify the report as a systematic review (+/− meta-analysis) of diagnostic test accuracy (DTA) studies.	Title: "A Systematic Review and Diagnostic Test Accuracy Meta-analysis" [p. 1]
Abstract	2	Abstract: See PRISMA-DTA for Abstracts.	Abstract; see Abstract checklist below [p. 1]
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	Introduction, paragraphs 1–4 (no pooled oncocytic-specific accuracy; only a BCR comparison by Vuong et al. [16]) [pp. 3–4]
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).	Introduction, paragraphs 1 and 3 (molecular testing to refine risk and avoid diagnostic surgery in Bethesda III/IV nodules [1–3]); Discussion, likelihood-ratio paragraph [pp. 3, 15]
Objectives	4	Provide an explicit statement of question(s) being addressed in terms of participants, index test(s), and target condition(s).	Introduction, last paragraph; Supplementary Protocol, Section 1 [p. 3]
METHODS			
Protocol and	5	Indicate if a review protocol exists, if and where it can be accessed (e.g.,	Methods, "Protocol and reporting", including the

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registration		Web address), and, if available, provide registration information including registration number.	summary of analytical decisions made after the preliminary analysis; Supplementary Protocol (version 1.0, provided in full). Not registered (PROSPERO or other). [p. 4]
Eligibility criteria	6	Specify study characteristics (participants, setting, index test(s), reference standard(s), target condition(s), and study design) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	Methods, “Eligibility criteria” and “Data sources and searches” (2010 onward, no language limits, conference abstracts handled); Supplementary Protocol, Sections 2–3 [p. 5]
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	Methods, “Data sources and searches” (PubMed/MEDLINE, Scopus, Web of Science Core Collection, Cochrane Library; 1 January 2010 to 8 October 2026); automated deduplication; full search strategies: Supplementary Table S2 [p. 4]
Search	8	Present full search strategies for all electronic databases and other sources searched, including any limits used, such that they could be repeated.	Full search strategies for all databases with dates and hits per database: Supplementary Table S2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility).	Methods, “Study selection”, including the verification of screening by a stratified random sample of 400 excluded records (Supplementary Tables S10a and S10b); Supplementary Protocol, Section 4 [pp. 5–6]
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any	Methods, “Data extraction”; Supplementary Protocol,

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		processes for obtaining and confirming data from investigators.	Section 5 [p. 6]
Definitions for data extraction	11	Provide definitions used in data extraction and classifications of target conditions, index tests, reference standards and other characteristics (e.g., study design, clinical setting).	Methods, “Definitions” (test positivity, malignancy, NIFTP, scenarios A/B, BCR, alteration classes) and “Handling of clinical heterogeneity” (oncocytic-predominant vs oncocytic-present vs histology-defined subgroups; Bethesda stratification); Supplementary Protocol, Sections 6–7 [pp. 6–7]
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.	Methods, “Risk of bias and applicability” (QUADAS-2 with tailored signaling questions); Supplementary Protocol, Section 8; assessments: Supplementary Table S6 [p. 7]
Diagnostic accuracy measures	13	State the principal diagnostic accuracy measure(s) reported (e.g., sensitivity, specificity) and state the unit of assessment (e.g., per-patient, per-lesion).	Methods, “Definitions” and “Statistical analysis” (sensitivity, specificity, PPV, NPV, LRs, DOR, BCR, malignancy rate by alteration class); unit of analysis: one dataset per centre and period [p. 8]
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; f) handling of different reference standards.	Methods, “Definitions” (a: malignancy and NIFTP; b: study-reported positivity, “any alteration” studies in sensitivity analysis; d: BCR denominator = tested nodules) and “Overlapping populations” [pp. 7–8]

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Meta-analysis	D2	Report the statistical methods used for meta-analyses, if performed.	Methods, “Statistical analysis” (bivariate binomial–normal GLMM; univariate GLMMs; exact CIs; Python code in Supplementary Data) [pp. 8–9]
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	Methods, “Statistical analysis” (sensitivity analyses, tipping-point analysis, Bethesda stratification; Deeks’ test; GRADE); prespecified analyses and deviations: Supplementary Protocol, Sections 9–10; results: Supplementary Table S7 [pp. 8–9]
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.	Results, “Study selection”, including the screening verification (0 of 300 title/abstract and 0 of 100 full-text sampled exclusions falsely excluded); Figure 1; Supplementary Table S8 (excluded reports); Supplementary Tables S10a and S10b [p. 9]
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; h) funding sources.	Results, “Study characteristics”; Table 1 (panel A: summary characteristics of the 75 included studies; panel B: datasets contributing 2×2 tables to the primary analyses); the complete study-level characteristics table (country, design, period, oncocytic definition, Bethesda category, test, tested and resected n, use in

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			this review) is Supplementary Table S1 [p. 9]
Risk of bias and applicability	19	Present evaluation of risk of bias and concerns regarding applicability for each study.	Results, "Risk of bias and applicability"; Supplementary Table S6; Supplementary Figures S1–S2 [p. 10]
Results of individual studies	20	For each analysis in each study (e.g., unique combination of index test, reference standard, and positivity threshold) report 2×2 data (TP, FP, FN, TN) with estimates of diagnostic accuracy and confidence intervals, ideally with a forest or receiver operator characteristic (ROC) plot.	Study-level 2×2 data, benign call rate data and alteration-class data: Supplementary Tables S3–S5; Figures 2, 3 and 4; Supplementary Figures S3–S4 (study estimates with Wilson 95% CIs)
Synthesis of results	21	Describe test accuracy, including variability; if meta-analysis was done, include results and confidence intervals.	Results, "Benign call rate", "Diagnostic accuracy" and "Malignancy by molecular alteration class"; Tables 2–3 (τ^2 reported) [pp. 10–12, 31–32]
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression; analysis of index test: failure rates, proportion of inconclusive results, adverse events).	Results, "Sensitivity analyses" (including the tipping-point analysis and Bethesda III/IV stratification) and "Small-study effects and certainty of evidence"; Table 4; Supplementary Tables S7, S11 (scenario B follow-up) and S13 (platform case mix); Supplementary Figure S5; invalid-result rates reported [pp. 12–13]
DISCUSSION			
Summary	24	Summarize the main findings including the strength of evidence.	Discussion, paragraph 1; Table 4 (GRADE) [pp. 14, 33]
Limitations	25	Discuss limitations from included studies (e.g., risk of bias and concerns regarding applicability) and from the	Discussion, limitations paragraph, including the quantified follow-up basis of

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		review process (e.g., incomplete retrieval of identified research).	scenario B (Supplementary Table S11) and the complementary false-negative estimate for model-assisted screening [p. 17]
Conclusions	26	Provide a general interpretation of the results in the context of other evidence. Discuss implications for future research and clinical practice (e.g., the intended use and clinical role of the index test).	Discussion, paragraphs 2–6 and implications paragraph; Conclusions [pp. 14–17]
OTHER			
Funding	27	For the systematic review, describe the sources of funding and other support and the role of the funders.	Funding statement (no external funding) [p. 19]

Items 15 and 22 of PRISMA 2009 were removed in PRISMA-DTA; items D1 and D2 are DTA-specific. Page numbers in square brackets refer to the submitted manuscript file (Manuscript_Diagnostics_v1.docx, 38 pages, including references and Tables 1–4); supplementary items are provided as separate supplementary files.

PRISMA-DTA for Abstracts Checklist

Section / topic	#	Checklist item	Reported (Yes/No)
TITLE AND PURPOSE			
Title	1	Identify the report as a systematic review (+/− meta-analysis) of diagnostic test accuracy (DTA) studies.	Yes
Objectives	2	Indicate the research question, including components such as participants, index test, and target conditions.	Yes (Objective)
METHODS			
Eligibility criteria	3	Include study characteristics used as criteria for eligibility.	Yes (Study selection)
Information sources	4	List the key databases searched and the search dates.	Yes (Data sources: four databases, January 2010 to

Section / topic	#	Checklist item	Reported (Yes/No)
			October 2026)
Risk of bias and applicability	5	Indicate the methods of assessing risk of bias and applicability.	Yes (QUADAS-2)
Synthesis of results	A1	Indicate the methods for the data synthesis.	Yes (bivariate and univariate binomial–normal models; scenarios A and B)
RESULTS			
Included studies	6	Indicate the number and type of included studies and the participants and relevant characteristics of the studies (including the reference standard).	Yes (75 studies; resected nodules with histology as reference standard)
Synthesis of results	7	Include the results for the analysis of diagnostic accuracy, preferably indicating the number of studies and participants. Describe test accuracy including variability; if meta-analysis was done, include summary results and confidence intervals.	Yes (pooled BCR, sensitivity, specificity with 95% CIs)
DISCUSSION			
Strengths and limitations	8	Provide a brief summary of the strengths and limitations of the evidence.	Yes (low to very low certainty)
Interpretation	9	Provide a general interpretation of the results and the important implications.	Yes (Conclusions)
OTHER			
Funding	10	Indicate the primary source of funding for the review.	No (stated in Funding section)
Registration	11	Provide the registration number and the registry name.	No (non-registration stated in Methods)