

# Diagnostic capability of questionnaires and clinical examinations to assess sleep-disordered breathing in children: A systematic review and meta-analysis\*

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## METHODS

**Eligibility Criteria.** Population: individuals from 0 to 18 years of age. Intervention: studies whose primary objective was to evaluate the diagnostic capability of clinical evaluation and/or questionnaires to diagnose pediatric SDB. Comparison: Full overnight PSG (gold standard) as a reference test.

**Search.** Databases: MEDLINE, PubMed, EMBASE, The Cochrane Library, LILACS, and Google Scholar. References cited in the selected articles. End search date: August 19, 2013.

**Study Selection.** Phase 1: two reviewers independently reviewed the titles and abstracts of all citations. Phase 2: the same selection criteria were applied to the full articles. Any disagreement in study selection process was resolved again by discussion and mutual agreement between the authors.

**Data Collection Process and Data Items.** One author collected the required information from the selected articles. A second author crosschecked all the retrieved information. Any disagreement in data collection process was resolved again by discussion and mutual agreement between the authors.

**Risk of Bias in Individual Studies.** The methodology of selected studies was evaluated using the 14- item Quality Assessment Tool for Diagnostic Accuracy Studies (QUADAS)<sup>1</sup>.

**Summary Measures.** Sensitivity and specificity of the diagnostic tests were the main outcome evaluated.

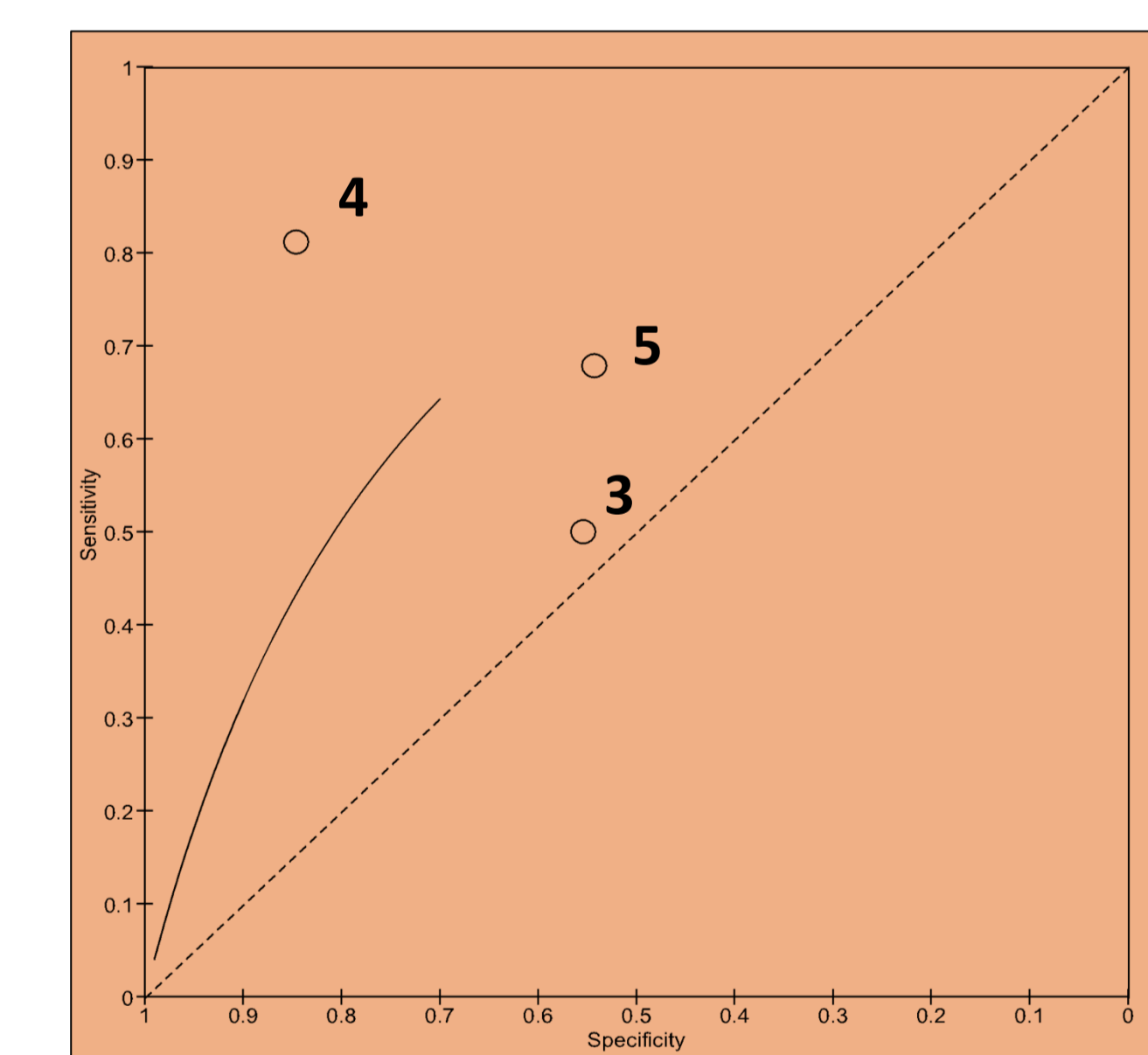
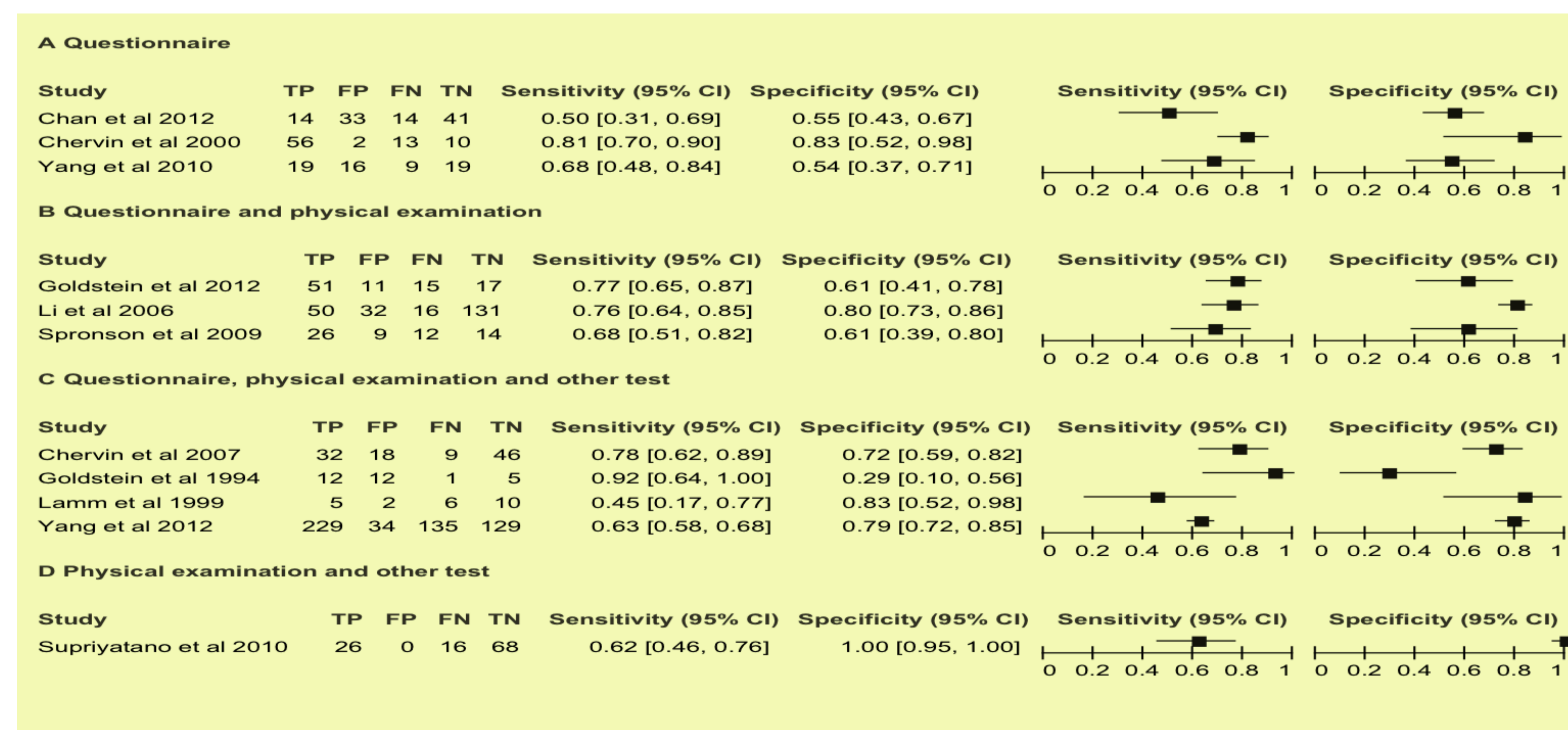
**Synthesis of Results.** Review Manager 5.2<sup>2</sup> was used to construct ROC graphs and Forest plots as part of the meta-analysis.

**Risk of Bias Across Studies.** To decrease the heterogeneity, the studies were separated in 4 groups to provide the meta-analysis according with the index test.

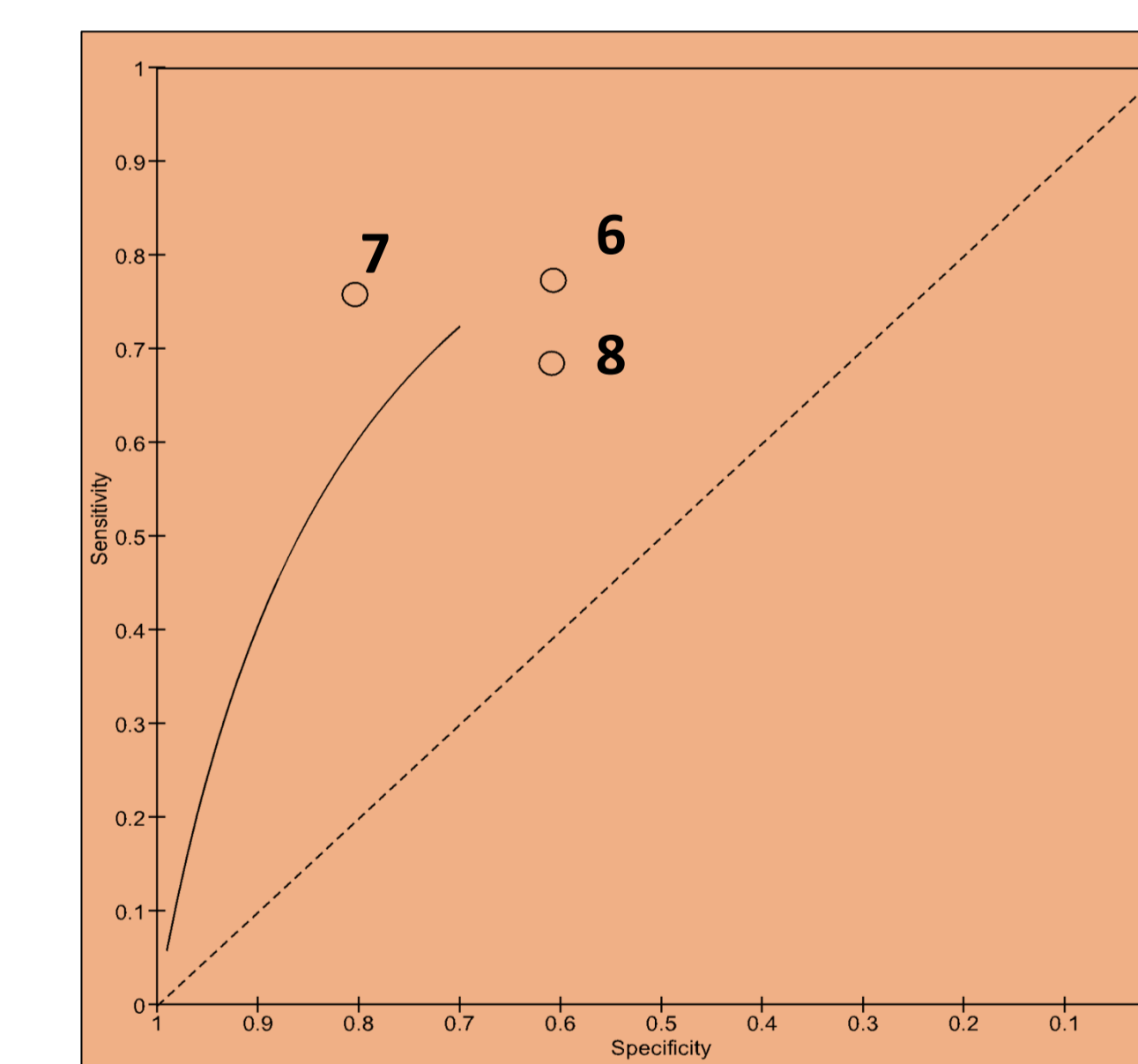
**Additional Analyses.** Additional analysis was done using PPV, NPV, LR+, LR-, diagnostic OR, and *Youden's* Index.

## RESULTS

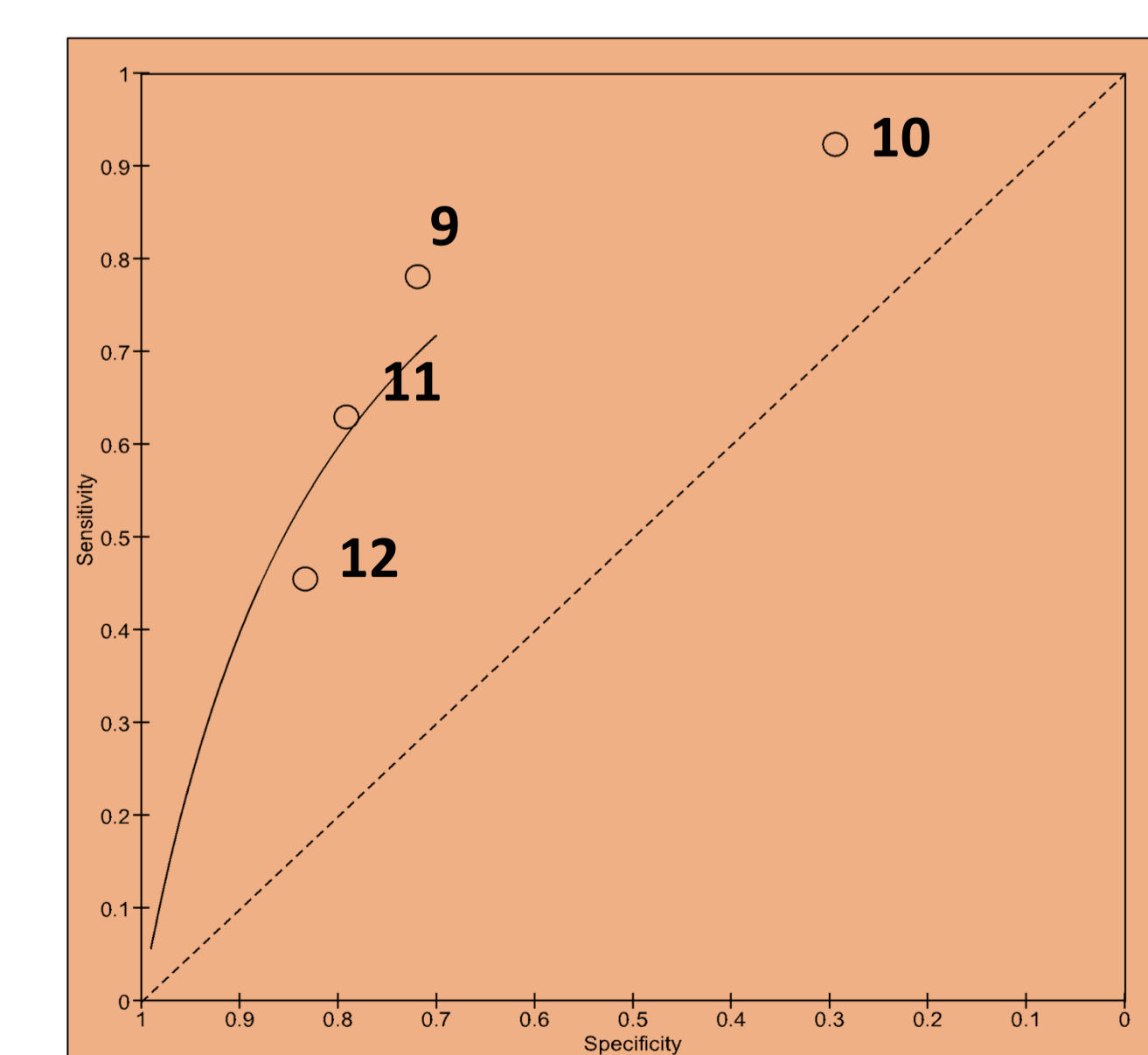
From 1,127 different citations, 35 were retrieved for more detailed full-text evaluation. At the end 11 articles had data enough to meta-analysis. **Only one test (PSQ<sup>4</sup>) had diagnostic accuracy good enough to be used as a screening method for pediatric SDB.**



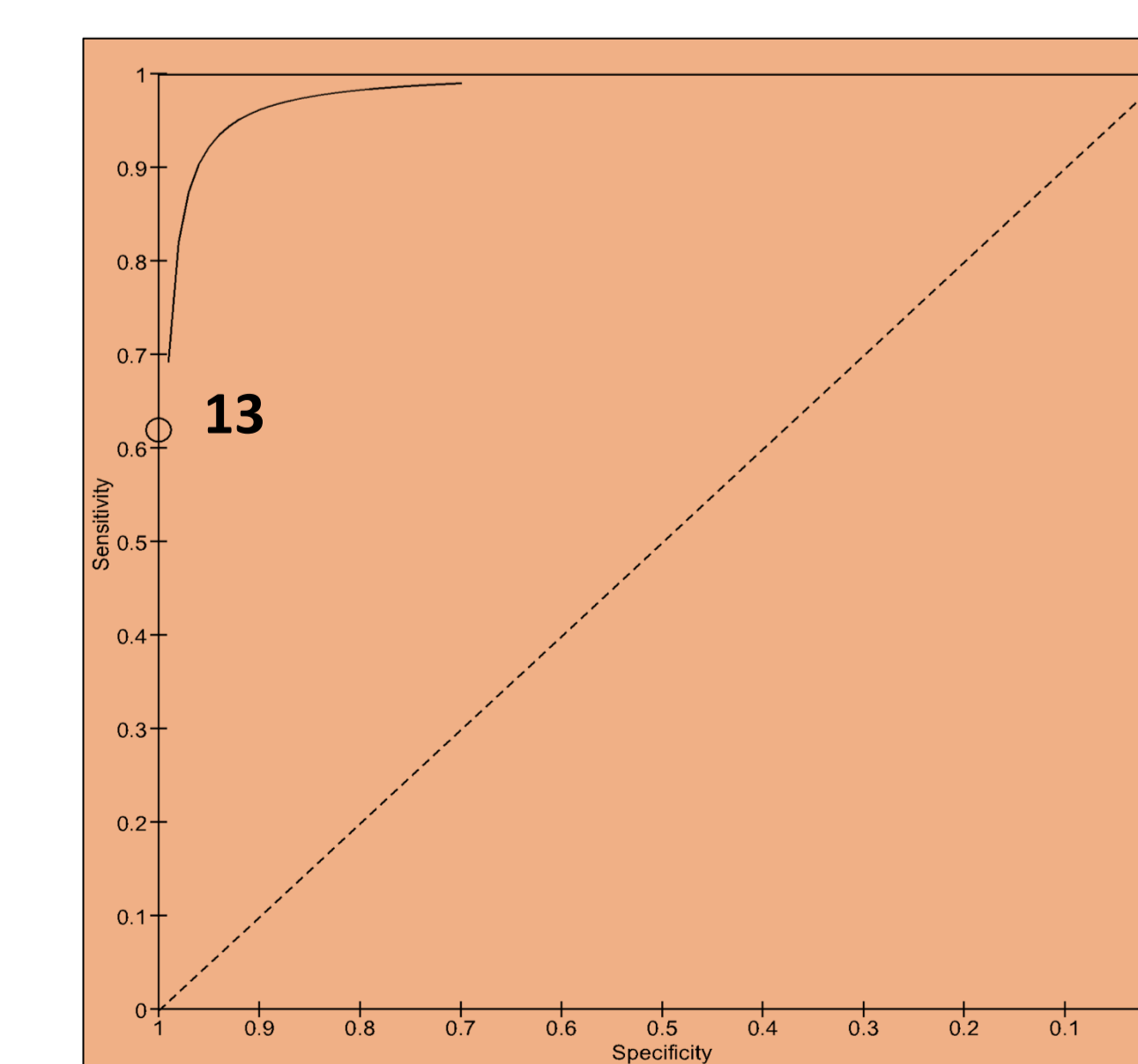
A - Questionnaire



B - Questionnaire and physical examination



C - Questionnaire, physical examination and/or other test



D - Physical examination and other test

## CONCLUSION

The PSQ<sup>4</sup> had the best diagnostic accuracy of the evaluated tests. As it does not attain diagnostic values high enough to replace the current gold standard (PSG), it should only be used as a screening tool to identify pediatric SDB.

**Background.** The gold standard for the diagnosis of pediatric Sleep Disorder Breathing (SDB) is a full polysomnography (PSG). Access to full PSG is not easy, therefore the diagnostic value of alternative pediatric SDB diagnostic methods (clinical history and/or physical examination) was evaluated.

**Practical Implications.** Involvement of dentists in pediatric SDB screening and referring process can contribute significantly to the children's health. The identified questionnaire (PSQ) could be considered an acceptable screening test before referring to the pediatric sleep medicine specialist.

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