

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Rowe et al. 2024	+	+	+	+	+		+	+	+	-	+
Lynch et al. 2019	+	+		+	+		+	+	+	-	+
Vlahandonis et al. 2014	+	+	+	+	+	+	+	+	+	-	+
Vlahandonis et al. 2013	+	+	+	+	+	+	+	+	+	-	+
Niemenen et al. 2002	+	+	+	+	+	+	+	+	+	-	+

Questions:

Q1: Were the two groups similar and recruited from the same population?

Q2: Were the exposures measured similarly to assign people to both exposed and unexposed groups?

Q3: Was the exposure measured in a valid and reliable way?

Q4: Were confounding factors identified?

Q5: Were strategies to deal with confounding factors stated?

Q6: Were the groups/participants free of the outcome at the start of the study (or at the moment of exposure)?

Q7: Were the outcomes measured in a valid and reliable way?

Q8: Was the follow up time reported and sufficient to be long enough for outcomes to occur?

Q9: Was follow up complete, and if not, were the reasons to loss to follow up described and explored?

Q10: Were strategies to address incomplete follow up utilized?

Q11: Was appropriate statistical analysis used?

+	Yes
-	No
	Unclear

Figure S1 Quality assessment tool for cohort studies.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
Dien et al. 2022								
Tsampalieros et al. 2019								
Massicotte et al. 2014								
Kheirandish et al. 2014								

Questions:

Q1: Were the criteria for inclusion in the sample clearly defined?

Q2: Were the study subjects and the setting described in detail?

Q3: Was the exposure measured in a valid and reliable way?

Q4: Were objective, standard criteria used for measurement of the condition?

Q5: Were confounding factors identified?

Q6: Were strategies to deal with confounding factors stated?

Q7: Were the outcomes measured in a valid and reliable way?

Q8: Was appropriate statistical analysis used?

Yes
 No
 Unclear

Figure S2 Quality assessment tool for cross-sectional studies.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Dalesio et al. 2020									
Kohler et al. 2009									

Questions:

Q1: Is it clear in the study what is the 'cause' and what is the 'effect' (i.e. there is no confusion about which variable comes first)?

Q2: Were the participants included in any comparisons similar?

Q3: Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?

Q4: Was there a control group?

Q5: Were there multiple measurements of the outcome both pre and post the intervention/exposure?

Q6: Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?

Q7: Were the outcomes of participants included in any comparisons measured in the same way?

Q8: Were outcomes measured in a reliable way?

Q9: Was appropriate statistical analysis used?

Yes
 No
 Unclear

Figure S3 Quality assessment tool for quasi-experimental studies.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Isabella et al. 2025													
Susan et al. 2023													
Baker et al. 2023													
Dos et al. 2021													
Au et al. 2021													
Naara et al. 2020													
Blake et al. 2019													
Diercks et al. 2019													
Liu et al. 2018													
Gudnadottir et al. 2018													
Friedman et al. 2012													
Kheirandish et al. 2008													
Khalil et al. 2008													
Chang et al. 2005													
Goldstein et al. 2004													
Brouillette et al. 2001													
Helfaer et al. 1996													

Questions:

Q1: Was true randomization used for assignment of participants to treatment groups

Q2: Was allocation to treatment groups concealed?

Q3: Were treatment groups similar at the baseline?

Q4: Were participants blind to treatment assignment?

Q5: Were those delivering treatment blind to treatment assignment?

Q6: Were outcomes assessors blind to treatment assignment?

Q7: Were treatment groups treated identically other than the intervention of interest?

Q8: Was follow up complete and if not, were differences between groups in terms of their follow up adequately described and analyzed?

Q9: Were participants analyzed in the groups to which they were randomized?

Q10: Were outcomes measured in the same way for treatment groups?

Q11: Were outcomes measured in a reliable way

Q12: Was appropriate statistical analysis used?

Q13: Was the trial design appropriate, and any deviations from the standard RCT design (individual randomization, parallel groups) accounted for in the conduct and analysis of the trial?

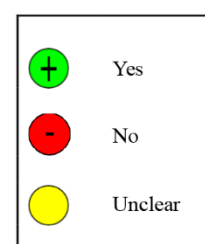


Figure S4 Quality assessment tool for randomized controlled trials.

Table S1 The search strategy

Database	Search strategy
Scopus (1,327)	((TITLE-ABS-KEY ("child") OR TITLE-ABS-KEY ("children") OR TITLE-ABS-KEY ("pediatrics")) AND ((TITLE-ABS-KEY ("patient participation") OR TITLE-ABS-KEY ("patient involvement") OR TITLE-ABS-KEY ("participation") OR TITLE-ABS-KEY ("engagement") OR TITLE-ABS-KEY ("involvement") OR TITLE-ABS-KEY ("patient engagement") OR TITLE-ABS-KEY ("eligibility") OR TITLE-ABS-KEY ("eligibility certification") OR TITLE-ABS-KEY ("eligibility determination") OR TITLE-ABS-KEY ("determination") OR TITLE-ABS-KEY ("certification") OR TITLE-ABS-KEY ("patient selection") OR TITLE-ABS-KEY ("recruitment") OR TITLE-ABS-KEY ("treatment") OR TITLE-ABS-KEY (" patient selection") OR TITLE-ABS-KEY (" volunteers selection")))) AND ((TITLE-ABS-KEY ("clinical trials as topic") OR TITLE-ABS-KEY ("clinical trials") OR TITLE-ABS-KEY ("therapeutic research") OR TITLE-ABS-KEY ("obstructive sleep apnea hypopnea syndrome") OR TITLE-ABS-KEY ("therapeutic human experimentation") OR TITLE-ABS-KEY ("experimentation") OR TITLE-ABS-KEY ("human experimentation") OR TITLE-ABS-KEY ("human experiment") OR TITLE-ABS-KEY ("research")))) AND ((TITLE-ABS-KEY ("obstructive sleep apnea") OR TITLE-ABS-KEY ("obstructive apnea") OR TITLE-ABS-KEY ("obstructive apnoea") OR TITLE-ABS-KEY ("obstructive sleep apnea hypopnea syndrome") OR TITLE-ABS-KEY ("OSAHS") OR TITLE-ABS-KEY ("obstructive sleep apnea syndrome") OR TITLE-ABS-KEY ("obstructive sleep apnoea hypopnoea syndrome") OR TITLE-ABS-KEY ("obstructive sleep-disordered breathing") OR TITLE-ABS-KEY ("sleep apnea") OR TITLE-ABS-KEY ("apnea") OR TITLE-ABS-KEY (" sleep apnea syndrome") OR TITLE-ABS-KEY (" sleep hypopnea") OR TITLE-ABS-KEY (" apnea syndrome") OR TITLE-ABS-KEY (" hypopnea") OR TITLE-ABS-KEY (" mixed central and obstructive sleep apnea")))
Embase (2,050)	#1. 'children'/exp OR 'children' OR 'child'/exp OR 'child' OR 'pediatrics'/exp OR 'pediatrics' #2. 'obstructive apnea' OR 'obstructive apnea during sleep' OR 'obstructive apnoea' OR 'obstructive sleep apnea hypopnea syndrome' OR 'obstructive sleep apnea hypopnea syndrome (osahs)' OR 'obstructive sleep apnea syndrome' OR 'obstructive sleep apnea-hypopnea' OR 'obstructive sleep apneas' OR 'obstructive sleep apnoe' OR 'obstructive sleep apnoe-hypopnoe syndrome' OR 'obstructive sleep apnoea' OR 'obstructive sleep-disordered breathing' OR 'osahs (sleep apnea)' OR 'sleep apnea, obstructive' OR 'sleep apnoea, obstructive' OR 'obstructive sleep apnea' OR 'apnea syndrome' OR 'hypopnea during sleep' OR 'hypopnea syndrome' OR 'sleep apnea syndrome' OR 'sleep related breathing disorder' OR 'sleep apnea syndromes' OR 'upper airway resistance syndrome' OR 'mixed sleep apnea' #3. 'clinical trial (topic)' OR 'clinical trials' OR 'clinical trials as topic' OR 'therapeutic human experimentation' OR 'therapeutic research' OR 'experimentation' OR 'human experiment' OR 'human experimentation' OR 'research' #4. 'patient participation' OR 'patient involvement' OR 'involvement' OR 'engagement' OR 'patient engagement' OR 'eligibility' OR 'certification' OR 'patient selection' OR 'recruitment' OR 'treatment' #5. #1 AND #2 AND #3 AND #4
PubMed (4,936)	(((((("Child"[Mesh]) OR "Pediatrics"[Mesh]) OR (children)) AND ((((((("Sleep Apnea, Obstructive"[Mesh]) OR "Sleep Apnea Syndromes"[Mesh]) OR (OSAHS)) OR (OSA)) OR (Obstructive Sleep Apnea)) OR (Upper Airway Resistance Sleep Apnea Syndrome)) OR (Apnea)) OR (Hypopnea)) OR (Sleep Disordered Breathing)))) AND ((((((("Clinical Trials as Topic"[Mesh]) OR "Therapeutic Human Experimentation"[Mesh]) OR "Human Experimentation"[Mesh]) OR (Experimentation)) OR (Research)) OR (Human Research Subject Protection)))) AND (((((((((((("Patient Participation"[Mesh]) OR "Eligibility Determination"[Mesh]) OR "Patient Selection"[Mesh]) OR (Participation)) OR (Involvement)) OR (Participation Rate)) OR (Activation)) OR (Engagement)) OR (Determination)) OR (Certification)) OR (Selection)) OR (Recruitment)) OR (Subject Selection)) OR (Selection of Research Volunteers)) OR (Research Volunteers Selection)) OR (Volunteers Selection)) OR (Treatment)))
The Cochrane Library (4,248)	#1. MeSH descriptor: [Child] explode all trees #2. MeSH descriptor: [Pediatrics] explode all trees #3. (children):ti,ab,kw (Word variations have been searched) #4. #1 OR #2 OR #3 #5. MeSH descriptor: [Sleep Apnea Syndromes] explode all trees #6. MeSH descriptor: [Sleep Apnea, Obstructive] explode all trees #7. MeSH descriptor: [Syndrome] explode all trees #8. MeSH descriptor: [Apnea] explode all trees #9. MeSH descriptor: [Respiration] explode all trees #10. ("obstructive sleep apnea"):ti,ab,kw (Word variations have been searched) #11. (OSAHS):ti,ab,kw (Word variations have been searched) #12. (OSA):ti,ab,kw (Word variations have been searched) #13. (Sleep Apnea Hypopnea Syndrome):ti,ab,kw (Word variations have been searched) #14. ("syndrome"):ti,ab,kw (Word variations have been searched) #15. ("upper airway resistance"):ti,ab,kw (Word variations have been searched) #16. ("hypopnea"):ti,ab,kw (Word variations have been searched) #17. ("sleep-disordered breathing"):ti,ab,kw (Word variations have been searched) #18. {OR #5-#17} #19. MeSH descriptor: [Clinical Trials as Topic] explode all trees #20. MeSH descriptor: [Therapeutic Human Experimentation] explode all trees #21. MeSH descriptor: [Research] explode all trees #22. MeSH descriptor: [Human Experimentation] explode all trees #23. ("experimentation"):ti,ab,kw (Word variations have been searched) #24. (therapeutic research):ti,ab,kw (Word variations have been searched) #25. {OR #18-#24} #26. MeSH descriptor: [Patient Participation] explode all trees #27. MeSH descriptor: [Eligibility Determination] explode all trees #28. MeSH descriptor: [Patient Selection] explode all trees #29. ("recruitment"):ti,ab,kw (Word variations have been searched) #30. ("enrollment"):ti,ab,kw (Word variations have been searched) #31. ("involvement"):ti,ab,kw (Word variations have been searched) #32. ("research"):ti,ab,kw (Word variations have been searched) #33. {OR #26-#32} #34. #4 AND #18 AND #25 AND #33