Supplementary appendix.

Search strategies.

Medline (Ovid)

[Filters: Cochrane Highly Sensitive Search Strategy for identifying randomized trials; ovid format]

[HIRU McMaster: Filter Type: Reviews (OVID - Maximizes specificity)]

1 Child Development Disorders, Pervasive/
2 (pervasive development* disorder* OR PDD OR PDDs).ti,ab.
3 Rett*.ti,ab.
4 Asperger*.ti,ab.
5 (autis* OR ASD OR ASDs).ti,ab.
6 Kanner*.ti,ab.
7 or/1-6
8 randomized controlled trial.pt.
9 controlled clinical trial.pt.
10 randomized.ab.
11 placebo.ab.
12 clinical trials as topic.sh.
13 randomly.ab.
14 trial.ti.
15 8 or 9 or 10 or 11 or 12 or 13 or 14
16 exp animals/ not humans.sh.
17 15 not 16
18 (MEDLINE or systematic review).tw. or meta analysis.pt.
19 7 and 18
20 7 and 17
21 19 or 20

Embase (Elsevier)

Filters

Adaptation of: Embase (elsevier): Cochrane Highly Sensitive Search Strategy for identifying controlled trials in Embase: (2018 revision); Ovid format (Glanville et al 2019b)

HIRU McMaster: Filter Type: Reviews (Embase - Maximizes specificity)

#1. 'randomized controlled trial'/exp
#2. 'controlled clinical trial'/exp
#3. random$:ti,ab
#4. 'randomization'/exp
#5. 'intermethod comparison'/exp
#6. placebo.ti,ab
#7. compare:ti OR compared:ti OR comparison:ti
#8. (evaluated:ti,ab OR evaluate:ti,ab OR evaluating:ti,ab OR assessed:ti,ab OR assess:ti,ab) AND (compare:ti,ab OR compared:ti,ab OR comparing:ti,ab OR comparison:ti,ab)
#9. open:ti,ab AND label:ti,ab
#10. (double:ti,ab OR single:ti,ab OR doubly:ti,ab OR singly:ti,ab) AND (blind:ti,ab OR blinded:ti,ab OR blindly:ti,ab)
#11. 'double blind procedure'/exp
#12. parallel AND group$:1.ti,ab
#13. crossover:ti,ab OR 'cross over':ti,ab
#14. (assign$:ti,ab OR match:ti,ab OR matched:ti,ab OR allocation:ti,ab) AND (alternate:ti,ab OR group$:ti,ab OR intervention$:ti,ab OR patient$:ti,ab OR subject$:ti,ab OR participant$:ti,ab)
#15. assigned:ti,ab OR allocated:ti,ab
#16. controlled:ti,ab AND (study:ti,ab OR design:ti,ab OR trial:ti,ab)
#17. volunteer:ti,ab OR volunteers:ti,ab
#18. 'human experiment'/exp
#19. trial:ti
#20. #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19
#21. random$:ti,ab AND sample$:ti,ab AND ('cross section$:ti,ab OR questionnaire$:ti,ab OR survey$:ti,ab OR database$:ti,ab) NOT (((comparative study'/exp OR 'controlled study'/exp OR randomised) AND controlled:ti,ab OR control) AND group$:ti,ab)
#22. 'cross-sectional study'/exp NOT (((randomized controlled trial'/exp OR 'controlled clinical trial'/exp OR 'controlled study'/exp OR randomised) AND controlled:ti,ab OR control) AND group$:ti,ab)
#23. case:ti,ab AND andcontrol$:ti,ab AND random$:ti,ab NOT randomised:ti,ab AND controlled:ti,ab
#24. 'systematic review':ti NOT (trial:ti OR study:ti)
#25. nonrandom$:ti,ab NOT random$:ti,ab
#26. 'random field$:ti,ab
#27. 'random cluster':ti,ab AND sample$:ti,ab
#28. review:ab AND review:it NOT trial:ti,ab
#29. 'we searched':ab AND (review:ti OR review:it)
#30. 'update review':it
#31. databases:ab AND searched:ab
#33. 'animal experiment'/exp NOT ('human experiment'/exp OR 'human'/exp)
#34. #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33
#35. #20 NOT #34
#36. 'autism'/exp
#37. 'child development disorders, pervasive':ti,ab
#38. 'pervasive development* disorder*':ti,ab OR pdd:ti,ab OR pdds:ti,ab
#39. 'recess*:ti,ab
#40. asperger*:ti,ab
#41. autis*:ti,ab OR asd:ti,ab OR asds:ti,ab
#42. kanner*:ti,ab
#43. #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42
#44. #35 AND #43
#45. 'meta analysis':ti,ab,kw
#46. 'systematic review':ti,ab,kw
#47. #45 OR #46
#48. #43 AND #47

**CENTRAL (Cochrane Library)**

#1 MeSH descriptor: [Developmental Disabilities] explode all trees
#2 (pervasive development* disorder* OR PDD OR PDDs):ti,ab,kw
#3 (Rett*):ti,ab,kw
#4 (Asperger*):ti,ab,kw
#5 (autis* OR ASD OR ASDs):ti,ab,kw
#6 (Kanner*):ti,ab,kw
#7 #1 OR #2 OR #3 OR #4 OR #5 OR #6

**PsycInfo (Ebsco)**

**Filters.**

Adaptation of: [Filters: Cochrane Highly Sensitive Search Strategy for identifying randomized trials; ovid format] and [HIRU McMaster: Filter Type: Reviews (OVID - Maximizes specificity)]

S 1 MA Child Development Disorders, Pervasive
S 2 TI ((pervasive development* disorder* OR PDD OR PDDs) ) OR AB ((pervasive development* disorder* OR PDD OR PDDs) )
S 3 TI Rett* OR AB Rett*
S 4 TI Asperger* OR AB Asperger* 3
S 5 TI (autis* OR ASD OR ASDs) OR AB (autis* OR ASD OR ASDs)
S 6 TI Kanner* OR AB Kanner*
S 7 (S1 OR S2 OR S3 OR S4 OR S5 OR S6)
S 8 MR randomized controlled trial
S 9 MR controlled clinical trial
S 10 AB randomized
S 11 AB placebo 3
S 12 MA clinical trials as topic
S 13 AB randomly
S 14 TI trial
S 15 (TI trial) AND (S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14)
S 16 MA animals NOT MA Humans
S 17 S15 NOT S16
S 18 KW systematic review OR TI systematic review OR AB systematic review
S 19 MR meta analysis OR MR meta-analysis
S 20 (S7 AND S17)
S 21 (S7 AND S18)
S 22 (S20 OR S21)

Epistemonikos (https://www.epistemonikos.org/)

**Advanced search**

(pervasive Child Development Disorders OR pervasive development* disorder* OR PDD OR PDDs OR Rett* OR Asperger* OR autis* OR ASD OR ASDs OR Kanner*)
### Supplementary table 1. Details of the judgements for each review per domain.

<p>| ID           | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Confidence |
|--------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| Alfageh 2019 | Y  | Y  | N  | PY | Y  | Y  | N  | PY | Y  | Y  | Y  | N  | Y  | Y  | Y  | Y  | Low       |
| Cohen 2013   | Y  | N  | N  | PY | N  | Y  | N  | Y  | N  | N  | N  | N  | Y  | N  | N  | N  | Critically low |
| D'Alò 2021  | Y  | N  | N  | PY | Y  | N  | Y  | Y  | Y  | Y  | Y  | Y  | Y  | Y  | Y  | Y  | Low       |
| Deb 2014     | Y  | N  | N  | PY | Y  | Y  | N  | PY | N  | N  | NA | N  | N  | NA | NA | N  | Critically low |
| Dinca 2005   | Y  | N  | N  | Y  | N  | N  | Y  | PY | PY | N  | N/MA | N/MA | Y  | N  | N  | N  | Critically low |
| Douglas-Hall 2011 | Y  | N  | N  | N  | N  | N  | N  | PY | N  | Y  | Y  | N  | N  | N  | N  | Y  | Critically low |
| Fallah 2019  | Y  | N  | N  | PY | Y  | Y  | N  | N  | Y  | N  | N  | N  | N  | N  | Y  | N  | Critically low |
| Fung 2016    | Y  | N  | N  | N  | Y  | Y  | Y  | PY | N  | N  | Y  | N  | Y  | Y  | N  | Y  | Critically low |
| Ghanizadeh 2015 | N  | N  | N  | N  | N  | N  | Y  | N  | N  | N/A | N  | N  | N/A | N  | N  | N  | Critically low |
| Hirsch 2016  | Y  | Y  | N  | PY | Y  | Y  | Y  | PY | Y  | Y  | Y  | Y  | Y  | Y  | Y  | Y  | High      |
| Jenabi 2019  | Y  | N  | N  | PY | N  | Y  | N  | PY | PY | N  | N/MA | N/MA | N  | N  | N  | N  | MA Y  | Critically low |
| Jensen 2007  | Y  | N  | N  | PY | N  | N  | N  | PY | N  | N  | N/A | N/MA | N/MA | N  | Y  | N  | Y  | Critically low |
| Jesner 2007  | Y  | Y  | N  | Y  | Y  | Y  | Y  | Y  | Y  | Y  | N  | Y  | N  | Y  | N  | Y  | Critically low |
| Maneeton 2018 | Y  | N  | N  | PY | Y  | Y  | Y  | PY | Y  | Y  | N  | Y  | Y  | Y  | N  | Y  | Y  | Low       |
| Maneeton 2018 | Y  | N  | N  | PY | Y  | Y  | Y  | PY | Y  | Y  | N  | Y  | Y  | N  | Y  | Y  | Critically low |
| Mano-Sousa 2021 | Y  | Y  | N  | PY | Y  | Y  | Y  | N  | N  | N  | N  | N  | Y  | Y  | Y  | Y  | Critically low |
| McPheeters 2011 | Y  | N  | N  | N  | Y  | Y  | N  | PY | N  | Y  | N/MA | N  | N  | NA | N/MA | Y  | Critically low |
| Sharma 2012  | Y  | N  | N  | PY | N  | N  | N  | PY | N  | N  | N  | N  | N  | Y  | N  | Y  | Critically low |</p>
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<td>Y</td>
<td>PY</td>
<td>N</td>
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<td>N</td>
<td>Y</td>
<td>Y</td>
<td>Critically low</td>
</tr>
</tbody>
</table>

1. Did the research questions and inclusion criteria for the review include the components of PICO?  
2. Did the report of the review contain an explicit statement that the review methods were established prior to the conduct of the review and did the report justify any significant deviations from the protocol?  
3. Did the review authors explain their selection of the study designs for inclusion in the review?  
4. Did the review authors use a comprehensive literature search strategy?  
5. Did the review authors perform study selection in duplicate?  
6. Did the review authors perform data extraction in duplicate?  
7. Did the review authors provide a list of excluded studies and justify the exclusions?  
8. Did the review authors describe the included studies in adequate detail?  
9. Did the review authors use a satisfactory technique for assessing the risk of bias (RoB) in individual studies that were included in the review?  
10. Did the review authors report on the sources of funding for the studies included in the review?  
11. If meta-analysis was performed did the review authors use appropriate methods for statistical combination of results?  
12. If meta-analysis was performed, did the review authors assess the potential impact of RoB in individual studies on the results of the meta-analysis or other evidence synthesis?  
13. Did the review authors account for RoB in individual studies when interpreting/ discussing the results of the review?  
14. Did the review authors provide a satisfactory explanation for, and discussion of, any heterogeneity observed in the results of the review?  
15. If they performed quantitative synthesis did the review authors carry out an adequate investigation of publication bias (small study bias) and discuss its likely impact on the results of the review?  
16. Did the review authors report any potential sources of conflict of interest, including any funding they received for conducting the review?  

Y: Yes, N: no, PY: Partial yes, N/MA: no meta-analysis. The full support for judgement can be found in the supplementary data: https://osf.io/aedxj/.
### Supplementary Table 2. PRISMA Checklist

<table>
<thead>
<tr>
<th>Checklist item</th>
<th>Location where item is reported</th>
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<tbody>
<tr>
<td><strong>TITLE</strong></td>
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<tr>
<td>Title</td>
<td>1 Identify the report as a systematic review.</td>
</tr>
<tr>
<td><strong>ABSTRACT</strong></td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td>2 See the PRISMA 2020 for Abstracts checklist.</td>
</tr>
<tr>
<td><strong>INTRODUCTION</strong></td>
<td></td>
</tr>
<tr>
<td>Rationale</td>
<td>3 Describe the rationale for the review in the context of existing knowledge</td>
</tr>
<tr>
<td>Objectives</td>
<td>4 Provide an explicit statement of the objective(s) or question(s) the review addresses.</td>
</tr>
<tr>
<td><strong>METHODS</strong></td>
<td></td>
</tr>
<tr>
<td>Eligibility criteria</td>
<td>5 Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.</td>
</tr>
<tr>
<td>Information sources</td>
<td>6 Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.</td>
</tr>
<tr>
<td>Search strategy</td>
<td>7 Present the full search strategies for all databases, registers and websites, including any filters and limits used.</td>
</tr>
<tr>
<td>Process</td>
<td>Number</td>
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<td>Selection process</td>
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<tr>
<td>Data collection process</td>
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<td>Data items</td>
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<td>10b</td>
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<td>Study risk of bias assessment</td>
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<td>Effect measures</td>
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<td>Synthesis methods</td>
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<td></td>
<td>13c</td>
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<td>Description</td>
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<tr>
<td>13d</td>
<td>Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.</td>
</tr>
<tr>
<td>13e</td>
<td>Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).</td>
</tr>
<tr>
<td>13f</td>
<td>Describe any sensitivity analyses conducted to assess robustness of the synthesized results.</td>
</tr>
<tr>
<td>Reporting bias assessment</td>
<td>14</td>
</tr>
<tr>
<td>Certainty assessment</td>
<td>15</td>
</tr>
</tbody>
</table>

**RESULTS**

| Study selection | 16a | Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram. | p. 7-8 and figure |
|                | 16b | Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded. | supplementary file |
| Study characteristics | 17 | Cite each included study and present its characteristics. | p. 8 |
| Risk of bias in studies | 18 | Present assessments of risk of bias for each included study. | supplementary table |
| Results of individual studies | 19 | For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots. | p. 8-10 |
| Results of syntheses | 20a | For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies. | p. 8-10 |
| | 20b | Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect. | p. 8-10 |
| | 20c | Present results of all investigations of possible causes of heterogeneity among study results. | N/A |
| | 20d | Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results. | N/A |
| Reporting biases | 21 | Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed. | N/A |
| Certainty of evidence | 22 | Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed. | p. 8-10 |

**DISCUSSION**

<p>| Discussion | 23a | Provide a general interpretation of the results in the context of other evidence. | p. 10-11 |
| | 23b | Discuss any limitations of the evidence included in the review. | p. 10-11 |
| | 23c | Discuss any limitations of the review processes used. | p. 10-11 |</p>
<table>
<thead>
<tr>
<th></th>
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<th>Discuss implications of the results for practice, policy, and future research.</th>
<th>p. 10-11</th>
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<tr>
<td><strong>OTHER INFORMATION</strong></td>
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<tr>
<td>Registration and protocol</td>
<td>24a</td>
<td>Provide registration information for the review, including register name and registration number, or state that the review was not registered.</td>
<td>p 5</td>
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<tr>
<td></td>
<td>24b</td>
<td>Indicate where the review protocol can be accessed, or state that a protocol was not prepared.</td>
<td>p 5</td>
</tr>
<tr>
<td></td>
<td>24c</td>
<td>Describe and explain any amendments to information provided at registration or in the protocol.</td>
<td>p 10-11</td>
</tr>
<tr>
<td>Support</td>
<td>25</td>
<td>Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.</td>
<td>p 12</td>
</tr>
<tr>
<td>Competing interests</td>
<td>26</td>
<td>Declare any competing interests of review authors.</td>
<td>p 12</td>
</tr>
<tr>
<td>Availability of data, code and other materials</td>
<td>27</td>
<td>Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.</td>
<td>Available at OSF file</td>
</tr>
</tbody>
</table>