THE LANCET
Obstetrics, Gynaecology, & Women's Health

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: D'Antonio F, Flacco ME, Valle LD, et al. Prenatal paracetamol exposure and child neurodevelopment: a systematic review and meta-analysis. *Lancet Obstet Gynaecol Womens Health* 2026; published online Jan 16. https://doi.org/10.1016/S3050-5038(25)00211-0.

Appendix Contents

Search Strategies and Selection Criteria

Supplementary Tables

Search Strategies and Selection Criteria

1. **Databases (Dialog):** Embase®, MEDLINE® (combined search strategy run and results downloaded on 30 September 2025)

Set#	Searched for	Results
S1	MESH.EXACT("Acetaminophen")	22049*
S2	EMB.EXACT("paracetamol")	128442*
S3	ti,ab,if(paracetamol or acetaminophen)	87309*
S4	subst(paracetamol or acetaminophen)	143979*
S5	MESH.EXACT.EXPLODE("Pregnancy") OR MESH.EXACT.EXPLODE("Pregnancy Trimesters") OR MESH.EXACT.EXPLODE("Prenatal Exposure Delayed Effects") OR MESH.EXACT("Pregnant People")	1072754*
S6	EMB.EXACT.EXPLODE("pregnancy") OR EMB.EXACT("pregnancy outcome") OR EMB.EXACT("pregnant woman") OR EMB.EXACT("pregnant person") OR EMB.EXACT("high risk pregnancy") OR EMB.EXACT("prenatal drug exposure") OR EMB.EXACT("prenatal exposure delayed effect") OR EMB.EXACT("prenatal exposure")	1165793*
S7	ti,ab,if(pregnan* or gestation* or trimester*)	1937374*
S8	ti,ab,if((prenatal* or "pre-natal*" or intrauterine or "intra-uterine" or "in utero" or fetus* or fetal* or foetus* or foetal*) near/5 expos*)	99929*
S9	(s1 or s2 or s3 or s4) and (s5 or s6 or s7 or s8)	7318*
S10	rtype.exact("Clinical Trial, Phase III" OR "Randomized Controlled Trial" OR "Controlled Clinical Trial" OR "Clinical Trial, Phase IV" OR "Clinical Trial, Phase I" OR "Meta-Analysis" OR "Clinical Trial" OR "Clinical Trial, Phase II" OR "Pragmatic Clinical Trial" OR "Equivalence Trial" OR "Adaptive Clinical Trial" OR "Multicenter Study" OR "Systematic Review" OR "Network Meta-Analysis" OR "Scoping Review")	1687114*
S11	MESH.EXACT.EXPLODE("Clinical Trials as Topic") OR MESH.EXACT.EXPLODE("Meta-Analysis as Topic") OR MESH.EXACT("Random Allocation") OR MESH.EXACT("Single-Blind Method") OR MESH.EXACT("Cross-Over Studies") OR MESH.EXACT("Double-Blind Method") OR MESH.EXACT("Placebos") OR MESH.EXACT("Multicenter Studies as Topic") OR MESH.EXACT("Systematic	783632*

	Reviews as Topic") OR MESH.EXACT("Review Literature as Topic") OR MESH.EXACT("Scoping Review as Topic")	
S12	EMB.EXACT("phase 1 clinical trial") OR EMB.EXACT("phase 3 clinical trial") OR EMB.EXACT.EXPLODE("randomized controlled trial") OR EMB.EXACT("phase 2 clinical trial") OR EMB.EXACT("phase 4 clinical trial") OR EMB.EXACT("controlled clinical trial") OR EMB.EXACT.EXPLODE("clinical trial") OR EMB.EXACT("triple blind procedure") OR EMB.EXACT("double blind procedure") OR EMB.EXACT("crossover procedure") OR EMB.EXACT("single blind procedure") OR EMB.EXACT.EXPLODE("randomization") OR EMB.EXACT("placebo") OR EMB.EXACT("multicenter study") OR EMB.EXACT.EXPLODE("meta analysis") OR EMB.EXACT("systematic review") OR EMB.EXACT("rapid review") OR EMB.EXACT("scoping review") OR EMB.EXACT("umbrella review") OR EMB.EXACT.EXPLODE("clinical trial (topic)") OR EMB.EXACT.EXPLODE("meta analysis (topic)") OR EMB.EXACT("systematic review (topic)") OR EMB.EXACT("scoping review (topic)") OR QU(ct)	3549101*
S13	ti,ab,if("meta analy[*3]" or metaanaly[*3] or "systematic review[*1]" or "systematic literature review[*1]" or "systematic overview[*1]" or "integrative review[*1]" or "integrative research review[*1]" or "rapid review[*1]" or "umbrella review[*1]" or "scoping review[*1]" or "realist review[*1]" or trial[*1] or ((singl[*4] or doubl[*4] or trebl[*4] or tripl[*4]) near/5 (blind[*4] or mask[*4])) or rct[*1] or randomized or randomised or randomization or randomisation or randomly or crossover or "cross over" or placebo[*1] or (random near/3 allocat[*4]))	6395936*
S14	pub.exact("Cochrane Database of Systematic Reviews" OR "Cochrane database of systematic reviews (Online)" OR "The Cochrane database of systematic reviews")	42847*
S15	MESH.EXACT("Cohort Studies") OR MESH.EXACT.EXPLODE("Longitudinal Studies") OR MESH.EXACT("Follow-Up Studies") OR MESH.EXACT("Retrospective Studies") OR MESH.EXACT("Case-Control Studies") OR MESH.EXACT("Cross-Sectional Studies") OR MESH.EXACT("Prospective Studies") OR MESH.EXACT("Controlled Before-After Studies") OR MESH.EXACT("Historically Controlled Study") OR MESH.EXACT("Interrupted Time Series Analysis") OR MESH.EXACT("Epidemiologic Studies") OR MESH.EXACT("Pilot Projects") OR MESH.EXACT("Feasibility Studies") OR MESH.EXACT("Observational Studies as Topic") OR MESH.EXACT("Clinical Studies as Topic")	3702477*
S16	rtype.exact("Observational Study" OR "Comparative Study" OR "Clinical Study")	2136166*
S17	EMB.EXACT.EXPLODE("longitudinal study") OR EMB.EXACT.EXPLODE("case control study") OR EMB.EXACT("prospective study") OR EMB.EXACT("major clinical study") OR EMB.EXACT("retrospective study") OR EMB.EXACT("clinical study") OR EMB.EXACT("cross-sectional study") OR EMB.EXACT("cohort analysis") OR EMB.EXACT("observational study") OR EMB.EXACT("community trial") OR EMB.EXACT("open study") OR EMB.EXACT("family study") OR EMB.EXACT("pilot study") OR	17607771*

	EMB.EXACT("comparative study") OR EMB.EXACT("controlled study") OR EMB.EXACT("follow up") OR EMB.EXACT("evaluation and follow up") OR EMB.EXACT("feasibility study")	
S18	ti,ab,if(prospective[*2] or retrospective[*2] or "follow up" or followup or longitudinal[*2] or "case control[*4]" or "cross sectional[*2]" or observation[*2] or "population based" or "population study" or "population studies" or (case[*1] near/5 series) or "consecutive cases") or ti,ab,if((cohort or epidemiologic[*4]) near/5 (study or studies or analy[*3])) or ti(cohort)	13147516*
S19	(s1 or s2 or s3 or s4) and (s5 or s6 or s7 or s8) and (s10 or s11 or s12 or s13 or s14 or s15 or s16 or s17 or s18)	3675°
S20	s19 and (human(yes) or MESH.EXACT("Humans") or EMB.EXACT.EXPLODE("human"))	3503°
S21	s19 not (human(yes) or MESH.EXACT("Humans") or EMB.EXACT.EXPLODE("human") or animal(yes) or MESH.EXACT.EXPLODE("Animals") or MESH.EXACT.EXPLODE("Animal Experimentation") or MESH.EXACT.EXPLODE("Models, Animal") or MESH.EXACT.EXPLODE("Pregnancy, Animal") or EMB.EXACT.EXPLODE("animal") or EMB.EXACT.EXPLODE("animal experiment") or EMB.EXACT.EXPLODE("animal model") or EMB.EXACT("nonhuman") or EMB.EXACT.EXPLODE("breeding"))	142°
S22	s20 or s21	3560°
S23	(s20 or s21) not (rtype.exact("Case Reports") or EMB.EXACT("case report") or EMB.EXACT.EXPLODE("case study") or ti,ab,if("case study" or "case report" or "single case"))	3093°
S24	s22 not s23	477°
S25	s24 and ti,ab,if((case[*1] near/5 series) or "consecutive cases")	88°
S26	**s23 or s25**	**3178°**

* Duplicates are removed from the search but included in the result count.
° Duplicates are removed from the search and from the result count.

2. **Databases:** Cochrane Library® (search strategy run and results downloaded on 30 September 2025)

ID	Search	Hits
#1	MeSH descriptor: [Acetaminophen] this term only	4083
#2	(paracetamol or acetaminophen):ti,ab,kw	13813

#3	MeSH descriptor: [Pregnancy] explode all trees	33887
#4	MeSH descriptor: [Pregnancy Trimesters] explode all trees	2268
#5	MeSH descriptor: [Prenatal Exposure Delayed Effects] explode all trees	509
#6	MeSH descriptor: [Pregnant People] this term only	1068
#7	(pregnan* or gestation* or trimester*):ti,ab,kw	108133
#8	((prenatal* or (pre next natal*) or intrauterine or "intra-uterine" or "in utero" or fetus* or fetal* or foetus* or foetal*) near/5 expos*):ti,ab,kw	1410
#9	**(#1 or #2) and (#3 or #4 or #5 or #6 or #7 or #8)**	**965**

- The Cochrane Database of Systematic Reviews (CDSR, Cochrane Reviews: Issue 9 of 12, September 2025) (19 references)
- The Cochrane Central Register of Controlled Trials (CENTRAL, Trials: Issue 9 of 12, September 2025) (946 references)

Supplementary Tables

Table S1. Risk of bias of included cohort studies assessed using the Quality in Prognosis Studies (QUIPS) tool.

Studies were evaluated across six domains: study participation, study attrition, prognostic factor measurement, outcome measurement, study confounding, and statistical analysis and reporting. Overall risk of bias (low, moderate, or high) was determined according to QUIPS guidance, reflecting the highest level of risk identified across domains.

Author (Ref)	Year	Study Participation	Study Attrition	Prognostic Factor Measurement	Outcome Measurement	Study Confounding	Statistical Analysis And Reporting	Overall Risk Of Bias
Okubo (11)	2025	low	low	low	low	low	low	low
Baker (28)	2025	high	moderate	moderate	low	high	moderate	high
Ahlqvist (10)	2024	low	low	low	low	low	low	low
Woodbury (64)	2024	low	moderate	moderate	low	moderate	low	moderate
Woodbury (65)	2024	low	moderate	moderate	low	moderate	low	moderate
Olstad (63)	2023	high	moderate	moderate	low	high	moderate	high

Golding (33)	2023	high	moderate	moderate	low	high	moderate	high
Havdahl (36)	2022	high	moderate	moderate	moderate	moderate	moderate	moderate
Lye (47)	2023	low	low	low	low	moderate	low	low
Smith - Webb (53)	2022	low	low	moderate	moderate	moderate	low	moderate
Theunissen (57)	2022	low	moderate	moderate	moderate	moderate	moderate	moderate
Sznajder (56)	2022	low	moderate	moderate	moderate	moderate	moderate	moderate
Laue (40)	2022	high	moderate	moderate	low	high	moderate	high
Anand (26)	2021	high	moderate	moderate	low	moderate	moderate	moderate
Gustavson (35)	2021	low	low	low	low	low	low	low
Inoue (37)	2020	low	moderate	low	low	moderate	low	moderate
Parker (48)	2020	low	moderate	moderate	moderate	low	moderate	moderate
Baker (29)	2020	high	moderate	moderate	low	high	moderate	moderate
Tovo-Rodrigues (59)	2020	low	low	low	low	moderate	low	low
Rifas - Shiman (50)	2020	high	moderate	moderate	low	high	moderate	high
Ji (39)	2020	high	moderate	moderate	low	high	moderate	moderate
Golding (34)	2020	low	moderate	low	moderate	moderate	low	moderate
Trønnes (61)	2020	low	moderate	low	low	low	low	low
Liew (42)	2019	low	moderate	low	moderate	moderate	low	moderate
Laue (41)	2019	high	moderate	moderate	low	high	moderate	high
Ruisch (51)	2018	low	low	moderate	low	moderate	low	moderate
Tovo-Rodrigues (60)	2018	low	low	low	low	moderate	low	low
Ji (38)	2018	high	moderate	moderate	low	high	moderate	moderate

Bornehag (30)	2017	low	moderate	low	low	moderate	low	moderate
Skovlund (52)	2017	low	moderate	low	low	moderate	low	moderate
Ystrom (66)	2017	low	moderate	low	moderate	moderate	low	moderate
Chatzi (32)	2017	moderate	high	high	low	high	low	high
Liew (44)	2016	low	low	low	low	moderate	low	low
Avella-Garcia (27)	2016	low	moderate	low	low	low	low	low
Stergiakouli (55)	2016	low	low	low	low	moderate	low	low
Vlenterie (62)	2016	low	low	low	low	moderate	low	low
Liew (45)	2016	low	moderate	low	low	moderate	low	moderate
Liew (46)	2016	low	moderate	low	low	moderate	low	moderate
Thompson (58)	2014	low	low	moderate	moderate	moderate	moderate	moderate
Liew (43)	2014	low	moderate	low	low	moderate	low	moderate
Brandlistuen (31)	2013	low	low	moderate	moderate	low	low	moderate
Snijder (54)	2012	moderate	high	high	low	high	low	high
Porta (49)	2006	moderate	high	high	low	high	low	high

Table S2. Excluded studies with reason for exclusion.

Author	Year	Title	Reason for the exclusion
Zhou	2024	Medication Usage Record-Based Predictive Modelling of Neurodevelopmental Abnormality in Infants under One Year: A Prospective Birth Cohort Study	Did not report data on the outcomes explored in the present systematic review
Nilsen	2023	Paracetamol use in pregnancy: Not as safe as we may think?	Review article, no original data eligible for inclusion

De Castro	2022	Association between paracetamol use during pregnancy and perinatal outcomes: Prospective NISAMI cohort	Did not report neurodevelopmental outcomes relevant to the present systematic review
Bührer	2021	Paracetamol (Acetaminophen) and the Developing Brain	Review article, no original data eligible for inclusion
Alemany	2021	Prenatal and postnatal exposure to acetaminophen in relation to autism spectrum and attention-deficit and hyperactivity symptoms in childhood: Meta-analysis in six European population-based cohorts	Meta-analysis all constituent cohort studies were individually included in the present systematic review
Arneja	2020	Association between maternal acetaminophen use and adverse birth outcomes in a pregnancy and birth cohort	Did not report adjusted estimates for the association between prenatal paracetamol exposure and neurodevelopmental outcomes
Leppert	2019	Association of Maternal Neurodevelopmental Risk Alleles With Early-Life Exposures	Derived from the AVALON cohort, analysed using a case-control design and therefore not eligible
Chen	2019	Prenatal Exposure to Acetaminophen and the Risk of Attention-Deficit/Hyperactivity Disorder: A Nationwide Study in Taiwan	Case-control design
Saunders	2019	A Comparison of Prenatal Exposures in Children with and without a Diagnosis of Autism Spectrum Disorder	Case-control design
Gervin	2017	Long-term prenatal exposure to paracetamol is associated with DNA methylation differences in children diagnosed with ADHD	Did not report adjusted estimates for neurodevelopmental outcomes
Hoover	2015	Association Between Prenatal Acetaminophen Exposure and Future Risk of Attention Deficit/Hyperactivity Disorder in Children	Review article, no original data eligible for inclusion
Brandlistuen	2013	Prenatal paracetamol exposure and child neurodevelopment: a sibling-controlled cohort study	Likely overlap with national cohort data (1999-2008) already included in the systematic review

Table S3. Characteristics of included cohort studies.

Included studies are summarised according to country, study period, neurodevelopmental outcomes assessed, diagnostic criteria or assessment instruments, and reference number.

Author	Year	Country	Study period	Neurodevelopmental disability explored	Diagnosis ASD	Diagnosis ADHD	Diagnosis ID	Diagnosis other neurological disabilities	Reference
Okubo	2025	Japan	2005-2022	ASD - ADHD - ID	ICD-10 (International Classification of Diseases,10th Revision) (F84)	ICD-10 (International Classification of Diseases,10th Revision) (F90) ATC (the Anatomical Therapeutic Chemical codes) (N06BA09, N06BA04)	ICD-10 (International Classification of Diseases,10th Revision) (F70-F79)	\	World Health Organization. *International statistical classification of diseases and related health problems. 10th revision (ICD-10)*. Geneva: World Health Organization; 1992
Baker	2025	USA	2006-2011	ADHD-related symptoms and behaviors	\	1) ADHD diagnosis and medications use reported by the parents 2) CBCL (completed by parents) for the DSM5-oriented ADHD subscale and externalizing subscale 3) Task-based behaviors: NIH Flanker (the NIH Toolbox Flanker Inhibitory Control and Attention Test) and Digit Span (the Wechsler Intelligence Scale for Children Digit Span)	\	\	
Ahlqvist	2024	Sweden	1995-2019	ASD - ADHD - ID	ICD-10 (International Classification of Diseases,10th Revision) (F84) - ICD-9 (International Classification of Diseases,9th Revision) (299)	1) ICD-10 (International Classification of Diseases, 10th Revision) (F90) - ICD-9 (International Classification of Diseases, 9th Revision) (314) 2) ATC (the Anatomical Therapeutic Chemical codes) (N06BA09, N06BA04)	ICD-10 (International Classification of Diseases,10th Revision) (F70-F79) - ICD-9 (International Classification of Diseases,9th Revision)(317-319)	\	1) World Health Organization. *The ICD-10 classification of mental and behavioural disorders.* Geneva: World Health Organization; 1993. 2) World Health Organization. *International classification of diseases: 9th revision (ICD-9)*. Geneva: World Health Organization; 1977.

Woodbury (a)	2024	USA	2013-2020	ADHD problems, Attention Problems, Externalizing Behavior, and Total Problems	\	CBCL (The Child Behavior Checklist)	\	\	Achenbach, T., Rescorla, L., 2000. Child Behavior Checklist for Ages 1 ½ - 5. University of Vermont, Burlington, VT
Woodbury (b)	2024	USA	2013-2020	Language development	\	\	\	1) CDI (MacArthur-Bates Communicative Development Inventories) 2) SLAS (Speech and Language Assessment Scale)	1) Fenson L, Marchman VA, Thal DJ, Dale PS, Reznick JS, Bates E. *MacArthur-Bates Communicative Development Inventories: User's guide and technical manual.* 2nd ed. Baltimore (MD): Paul H. Brookes Publishing Company; 2007. 2) Hadley PA, Rice ML. Parental judgments of preschoolers' speech and language development: a resource for assessment and IEP planning. *Semin Speech Lang.* 1993;14(4):278–88.
Olstad	2023	Norway	1998 - 2008	ADHD	\	ICD-10 (International Classification of Diseases,10th Revision) diagnosis of hyperkinetic disorder (HKD; F90.0, F90.1, F90.8, or F90.9) [HKD corresponds to ADHD in the Diagnostic and Statistical Manual (DSM) system]	\	\	World Health Organization. Chapter V: Mental and Behavioural Disorders. The 10th revision of the International Statistical Classification of Diseases and Related Health Problems. Geneva; 2018
Golding	2023	UK	1991 - 1992	The Scholastic Abilities Outcome	\	\	\	\	1) Nunes, T., Bryant, P. and Olsson, J. (2003). Learning morphological and phonological spelling rules: An intervention study. *Sci. Stud. Read.* 7(3), 289-307 2) Rust, J., Golombok, S. and Trickey, G. (1993). WORD: Wechsler objective reading dimensions manual. Sidcup, UK: Psychological Corporation. 074910290X (ISBN13: 9780749102906)

Havdahl	2022	Norway	1999 - 2008	ASD - ADHD	\	PARENTAL 6-item DSM-IV Adult ADHD Self-Report Scale (ASRS) at study recruitment (fathers) and at the year 3 follow-up (mothers)	\	\	Kessler RC, Adler L, Ames M, et al. The World Health Organization Adult ADHD Self-Report Scale (ASRS): a short screening scale for use in the general population. *Psychol Med.* 2005;35(2):245-256.
Lye	2022	Canada	2013-2019 - 2018-2019	Cognitive development	\	\	\	NIH Toolbox Early Childhood Cognition battery	Weintraub S, Bauer PJ, Zelazo PD, et al. I. NIH Toolbox Cognition Battery (CB): introduction and pediatric data. *Monogr Soc Res Child Dev*. 2013;78(4):1-15.
Theunissen	2022	New Zeland	2009-2010	Depressive symptoms	\	\	\	Self-report 10-item scale (CESD-10) - short version of the 20-item Centre for Epidemiological Studies Depression Scale for Children (CES-DC)	1) Andresen EM, Malmgren JA, Carter WB, Patrick DL. Screening for depression in well older adults: evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). *Am J Prev Med.* 1994;10(2):77-84. 2) Bradley KL, Bagnell AL, Brannen CL. Factorial validity of the Center for Epidemiological Studies Depression 10 in adolescents. *Issues Ment Health Nurs.* 2010;31(6):408–12.

Sznajder	2022	USA	2009 - 2011	Emotionally Reactive, Anxious / Depressed, Somatic Complaints, Withdrawn, Sleep Problems, and Aggressive Behavior	\	\	\	99-item CBCL1½-5 (Child Behavior Checklist for Toddlers)	1) Achenbach TM, Rescorla LA. *Manual for the ASEBA Preschool Forms & Profiles.* Burlington (VT): University of Vermont, Research Center for Children, Youth & Families; 2000. 2) Pandolfi V, Magyar CI, Dill CA. Confirmatory factor analysis of the Child Behavior Checklist 1.5–5 in a sample of children with autism spectrum disorders. *J Autism Dev Disord*. 2009;39(7):986–95. 3) Rescorla LA. Assessment of young children using the Achenbach System of Empirically Based Assessment (ASEBA). *Ment Retard Dev Disabil Res Rev.* 2005;11(3):226–37.
Laue	2022	Canada	2007-2009	Motor and Cognitive development	\	\	\	1) QTAC (The Questionnairesur le Trouble de L'Acquisition de la Coordination) 2) WISC-IV (Five subtests from the Wechsler Intelligence Scale for Children, 4th edition)	1) Martini R, St-Pierre MF, Wilson BN. French Canadian cross-cultural adaptation of the Developmental Coordination Disorder Questionnaire '07: DCDQ-FC. *Can J Occup Ther.* 2011;78(5):318-327. 2) Wechsler, D.*Wechsler Intelligence Scale for Children-WISC-IV.*; Psychological Corporation: San Antonio, TX, USA, 2003
Smith - Webb	2022	Canada	1996-2002	Behavioral problems during adolescence	\	\	\	1) CBCL (Child Behavior Checklist) 2) TRF (Teacher Report Form) 3) YSR (Youth Self Report)	1) Achenbach, T.M., and Rescorla, L.A. *Manual for the ASEBA school-age formsand profiles.* Burlington, VT: University of Vermont, Research Center for ChildrenYouth and Families; 2001

Anand	2021	USA	1998 - 2018/	ADHD	\	ADHD-related ICD codes (ICD-9 codes 314.0–314.9; ICD-10 codes F90.0 –F90.9)	\	\	1) World Health Organization. *The ICD-10 classification of mental and behavioural disorders.* Geneva: World Health Organization; 1993. 2) World Health Organization. *International classification of diseases: 9th revision (ICD-9).* Geneva: World Health Organization; 1977.
Gustavson	2021	Norway	1999 - 2008	ADHD	\	ICD-10 (International Classification of Diseases,10th Revision) diagnosis of hyperkinetic disorder (HKD; F90) [HKD corresponds to ADHD in the Diagnostic and Statistical Manual (DSM) system]	\	\	World Health Organization. *The ICD-10 classification of mental and behavioural disorders.* Geneva: World Health Organization; 1993.
Parker	2020	USA	1996 - 2002	Behavioral Problems	\	\	\	1) CBCL (Child Behavior Checklist) 2) TRF (Teacher Report Form)	Achenbach TM, Rescorla LA. *Manual for the ASEBA School-Age Forms and Profiles.* Burlington, VT: University of Vermont, Research Center for Children Youth and Families; 2001.
Baker	2020	Canada	2007 - 2020	ADHD	\	1) Parents questionnaire about physician-diagnosed ADHD 2) Reviewing medical records 3) BASC3-PRS (Behavioral Assessment System for Children Parent Report Scale)	\	\	3) Merenda PF. BASC: Behavior Assessment System for Children. *Meas Eval Couns Dev.* 1996;28(4):229–32.
Inoue	2020	Denmark	1996 - 2002	Behavioral problems	\	\	\	SDQ (the Strengths and Difficulties Questionnaire)	Goodman R. The Strengths and Difficulties Questionnaire: a research note. *J Child Psychol Psychiatry.* 1997;38(5):581-586.

Tovo-Rodrigues	2020	Brazil	2004	Low neurodevelopmental performance and behavioural/emotional problems	\	\	\	1) Battelle's Developmental Inventory (BDI) 2) Child Behaviour Checklist (CBCL) - 118 items version validated for the Brazilian population	1) Newborg J, Stock JR, Wnek L, Guidabaldi J, Svinicki J. *Battelle Developmental Inventory.* Itasca, IL: Riverside Publishing; 1988 2) Achenbach TM. Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles. Department of Psychiatry: University of Vermont; 1991 2a) Bordin IA, Rocha MM, Paula CS, Teixeira MC, Achenbach TM, Rescorla LA, et al. Child Behavior Checklist (CBCL), Youth Self-Report (YSR) and Teacher's Report Form (TRF): an overview of the development of the original and Brazilian versions. *Cad Saude Publica*. 2013;29(1):13–28.
Rifas - Shiman	2020	USA	1999 - 2002	Executive function and behaviour problems	\	\	\	1) BRIEF (the Behavoiur Rating Inventory of Executive Function) 2) SDQ (the Strengths and Difficulties Questionnaire)	1) Gioia GA, Isquith PK, Guy SC, Kenworthy L. *Behavior Rating Inventory of Executive Function (BRIEF).* Odessa (FL): Psychological Assessment Resources; 2000. 2) Goodman R. The Strengths and Difficulties Questionnaire: a research note. *J Child Psychol Psychiatry*. 1997;38(5):581-586.
Liew	2019	USA	1993 - 2005	ADHD	\	Maternal reports of ADHD diagnosis	\	\	Faraone SV, Biederman J, Milberger S. How reliable are maternal reports of their children's psychopathology? One-year recall of psychiatric diagnoses of ADHD children. *J Am Acad Child Adolesc Psychiatry.* 1995;34(8):1001-1008.

Laue	2019	Canada	2007 - 2009	Overall neuropsychological adverse outcome	\	\	\	WISC-IV testing	Wechsler D. *Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV)*. San Antonio (TX): Psychological Corporation; 2003.
Ji	2019	USA	1998 - 2018	ASD - ADHD - other developmental disorders (DDs)	ASD-related codes (ICD-9codes299.0-299.91 orICD-10codes F84.0-F84.9)	ADHD-related ICD-9 (codes 314.0-314.9) - ICD-10 (codes F90.0-F90.9) codes (excluding ASD-related codes (ICD-9 codes299.0-299.91 or ICD-10codes F84.0-F84.9))	Children diagnosed with mental, behavioral, and neurodevelopmental disorders (ICD-9 codes 290-319 or ICD-10 codes F01-F99) excluding ADHD-and ASD-related ICD codes	\	1) World Health Organization. *The ICD-10 classification of mental and behavioural disorders*. Geneva: World Health Organization; 1993. 2) World Health Organization. *International classification of diseases: 9th revision (ICD-9)*. Geneva: World Health Organization; 1977.
Tronnes	2019	Norway	1999 - 2008	Communication problems, externalising behavioural problems, internalising behavioural problems	\	\	\	1) Ages and Stages Questionnaire (ASQ) 2) The Child Behaviour Checklist (CBCL 1½-5) 3) Emotionality, Activity and Shyness Temperament Questionnaire (EAS)	1) Richter J, Janson H. A validation study of the Norwegian version of the Ages and Stages Questionnaires. *Acta Paediatr.* 2007;96(5):748-752. 2) Achenbach TM, Ruffle TM. The Child Behavior Checklist and related forms for assessing behavioral/emotional problems and competencies. *Pediatr Rev*. 2000;21(8):265–71. 3) Buss AH, Plomin R. *Temperament: Early Developing Personality Traits*. Hillsdale (NJ): Lawrence Erlbaum Associates Inc.; 1984. 3b)Mathiesen KS, Tambs K. The EAS temperament questionnaire: factor structure, age trends, reliability, and stability in a Norwegian sample. *J Child Psychol Psychiatry*. 1999;40(3):431–9.

Golding	2019	UK	1991 - 1992	Cognition, Hyperactivity and conduct disorder, emotional behaviour	\	\	\	1) IQ test (UK version of the WISC at 8 years and WASI-II at 15 years) 2) the Carey temperament scales and EAS (Emotionality, Activity, and Sociability) 3) The Revised Rutter Scale, SDQ (Strengths and Difficulties Questionnaire) and DAWBA (Development and Well-Being Assessment)	1) Wechsler D, Golombok S, Rust J. *WISC–III UK: Wechsler Intelligence Scale for Children – Third Edition UK Manual.* Sidcup (UK): The Psychological Corporation; 1992. 2 CareyW,McDevittS.Infant Temperament Questionnaire (4–8 months). Philadelphia: Department of Educational Psychology,TempleUniversity;1977.27. 2b) Fullard W, McDevitt SC, Carey WB. Assessing temperament in one- to three-year-old children. *J Pediatr Psychol.* 1984;9(2):205-217. 2c) Buss AH, Plomin R. Temperament: Early Developing Personality Traits. Hillsdale, New Jersey: Lawrence Erlbaum, 1984. 3) Elander J, Rutter M. Use and development of the Rutter parents' and teachers' scales. International Journal of Methods in Psychiatric Research 1996; 6:63–7. 3a) Rutter M. A children's behaviour questionnaire for completion by teachers: preliminary findings. Child Psychology & Psychiatry & Allied Disciplines 1967; 8:1-11. 3b) Goodman R, Ford T, Richards H, Gatward R, Meltzer H. The Development and Well-Being Assessment: description and initial validation of an integrated assessment of child and adolescent psychopathology. *J Child Psychol Psychiatry.* 2000;41(5):645-655.

Ruisch	2018	UK	1991-1992	ADHD - Disruptive behavior disorders: oppositional-defiant disorder (ODD) and conduct disorder (CD) ODD - CD)	\	DAWBA (Development and Well-Being Assessment)	\	\	Goodman R, Ford T, Richards H, Gatward R, Meltzer H. The Development and Well-Being Assessment: description and initial validation of an integrated assessment of child and adolescent psychopathology. *J Child Psychol Psychiatry.* 2000;41(5):645-655.
Tovo-Rodrigues	2018	Brazil	2004	Overall neuropsychological adverse outcome: Inattention/hyperactive symptoms, conduct problems, emotional symptoms, peer relationship problems, and prosocial behavior	\	SDQ (the Strengths and Difficulties Questionnaire) [The questionnaire was adapted and previously validated for the Brazilian population]	\	\	Fleitlich-Bilyk B, Goodman R. Prevalence of child and adolescent psychiatric disorders in southeast Brazil. *J Am Acad Child Adolesc Psychiatry.* 2004;43(6):727-734.
Ji	2018	USA	From 1998	ASD - ADHD - other developmental disorders (DDs)	ICD-9 (International Classification of Diseases, 9th Revision) (299.0, 299.00, 299.01, 299.8, 299.80,299.81, 299.9, 299.90, or 299.91) or ICD-10 (International Classification of Diseases,10th Revision) (F84.0, F84.8, or F84.9)	ICD-9 (International Classification of Diseases, 9th Revision) (314.0, 314.00, 314.01, 314.1, 314.2, 314.8,or 314.9) or ICD-10 (International Classification of Diseases,10th Revision) (F90.0, F90.1, F90.2, F90.8, or F90.9)	\	\	1) World Health Organization. *The ICD-10 classification of mental and behavioural disorders.* Geneva: World Health Organization; 1993. 2) World Health Organization. *International classification of diseases: 9th revision (ICD-9).* Geneva: World Health Organization; 1977.
Skovlund	2017	Norway	1999-2008	Language competence and communication skills	\	\	\	1) Language competence at 3 years of age was evaluated by a validated language grammar rating scale 2) ASQ (the Ages and Stages Questionnaire)	1) Dale PS, Price TS, Bishop DV, Plomin R. Outcomes of early language delay: I. Predicting persistent and transient language difficulties at 3 and 4 years. *J Speech Lang Hear Res.* 2003;46(3):544-560. 2) Richter J, Janson H. A validation study of the Norwegian version of the Ages and Stages Questionnaires.

									Acta Paediatr. 2007;96(5):748-752.
Bornehag	2017	Sweden	2007-2010	Impaired language development	\	\	\	Validated assessment consists of a nurse evaluation and a parental questionnaire on language use	Mattsson CM, Mårild S, Pehrsson NG. Evaluation of a language-screening programme for 2.5-year-olds at Child Health Centres in Sweden. *Acta Paediatr.* 2001;90(3):339-344.
Ystrom	2017	Norway	1999-2009	ADHD	\	ICD-10 (International Classification of Diseases,10th) diagnosis of hyperkinetic disorder (HKD; F90.0, F90.1, F90.8, or F90.9) [HKD corresponds to ADHD in the Diagnostic and Statistical Manual (DSM) system]	\	\	World Health Organization. International Statistical Classification of Diseases and Related Health Problems, 10th Revision. Vol. 2. Geneva: World Health Organization; 2004.
Chatzi	2017	Greece	2007-2008	ADHD	\	CBCL1½-5 (Child Behavior Checklist for Toddlers)	\	\	1) Achenbach, T. M . (2000). Child Behavior Checklist. In A. E. Kazdin (Ed.), *Encyclopedia of psychology* (Vol. 2, pp. 69–70). Oxford University Press. 2) Muratori F, Narzisi A, Tancredi R, et al. The CBCL 1.5-5 and the identification of preschoolers with autism in Italy. *Epidemiol Psychiatr Sci.* 2011;20(4):329-338.
Liew	2016	Denmark	2003 - 2008	Overall neuropsychological adverse outcome: subnormal attention or executive function	\	\	\	1) TEACh-5 (Test of Everyday Attention for Children at Five) 2) BRIEF (Behaviour Rating Inventory of Executive Function)	1) Underbjerg M, George MS, Thorsen P, Kesmodel US, Mortensen EL, Manly T. Separable sustained and selective attention factors are apparent in 5-year-old children. *PLoS One*. 2013;8(12):e82843. 2) Gioia GA, Isquith PK, Guy SC, Kenworthy L. Behavior Rating Inventory of Executive Function. *Child Neuropsychol*. 2000;6(3):235–38. 2a) Gioia GA, Isquith PK, Retzlaff PD, Espy KA. Confirmatory factor analysis of

									the Behavior Rating Inventory of Executive Function (BRIEF) in a clinical sample. *Child Neuropsychol*. 2002;8(4):249–57.
Avella-Garcia	2016	Spain	2004-2008	ASD - ADHD	1) BSID (Bayley Scales of Infant Development) 2) MCSA (McCarthy Scales of Children's Abilities) 3) CPSCS (California Preschool Social Competence Scale) 4) CAST (Childhood Autism Spectrum Test)	5) ADHD-DSM-IV (Attention-Deficit/Hyperactivity Disorder Criteria of the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition form list) 6) K-CPT (Conner's Kiddie Continuous Performance Test)	\	\	1) Bayley N. BSID: escalas Bayley de desarrollo infantil: Manual. Madrid: TEA; 1977. 2) McCarthy D. MSCA: Escalas McCarthy de aptitudes y psicomotricidad para niños. Madrid: TEA Ediciones; 2009. 3) Julvez J, Santacana M, Ribas-Fitó N, Mazón C, Torrent M, García-Esteban R, Ellison-Loschmann L, Sunyer J. Psychometric characteristics of the California Preschool Social Competence Scale in a Spanish population sample. *Early Educ Dev*. 2008;19(5):795-815. 4) Scott FJ, Baron-Cohen S, Bolton P, Brayne C. The CAST (Childhood Asperger Syndrome Test): preliminary development of a UK screen for mainstream primary-school-age children. *Autism.* 2002;6(1):9-31. 5) Williams J, Scott F, Stott C, et al. The CAST (Childhood Asperger Syndrome Test): test accuracy. *Autism*. 2005;9(1):45-68. 6) American Psychiatric Association. Manual Diagnostico y Estadıstico de los Trastornos Mentales. IV. Barcelona: Masson,2002 7) Conners C, Staff M. Conners' Kiddie Continuous Performance Test (K-CPT): Computer Program for

									Windows Technical Guide and Software Manual. Toronto (ON): Multi-Health Systems; 2001.
Stergiakouli	2016	UK	2015 - 2016	Behavioral problems	\	\	\	SDQ (the Strengthsand Difficulties Questionnaire)	Goodman R. The Strengths and Difficulties Questionnaire: a research note. *J Child Psychol Psychiatry.* 1997;38(5):581-586.
Vlenterie	2016	Norway	1999 - 2008	Neurodevelopmental outcomes: Psychomotor problems, Behavioural problems, Temperamental problems	\	\	\	1) ASQ (the Ages and Stages Questionnaire) [translated and validated in a Norwegian sample] 2) The Child Behaviour Checklist (CBCL/11/2-5/LDS) 3) EAS (the short-form Emotionality, Activity and Shyness Temperament Questionnaire)	1) Handal M, Skurtveit S, Furu K, et al. Motor development in children prenatally exposed to selective serotonin reuptake inhibitors: a large population-based pregnancy cohort study. *BJOG*. 2016;123(12):1908-1917. 2)Nøvik TS. Validity of the Child Behaviour Checklist in a Norwegian sample. *Eur Child Adolesc Psychiatry*. 1999;8(4):247-254. 3)Mathiesen KS, Tambs K. The EAS temperament questionnaire--factor structure, age trends, reliability, and stability in a Norwegian sample. *J Child Psychol Psychiatry*. 1999;40(3):431-439.
Liew	2016	Denmark	2003 - 2008	IQ scores	\	\	\	WPPSI-R (Wechsler Primary and Preschool Scales of Intelligence-Revised)	1) Wechsler D. Manual for the Wechsler Preschool and Primary Scale of Intelligence-Revised. Kent, GB: The Psychological Corporation; 1990:230. 2) Guinchat V, Thorsen P, Laurent C, Cans C, Bodeau N, Cohen D. Pre-, peri- and neonatal risk factors for autism. *Acta Obstet Gynecol Scand*. 2012;91(3):287-300. 3) Wechsler D. Manual for the

									Wechsler Preschool and Primary Scale of Intelligence - Revised. Swedish edition. Stockholm, Sweden:Psykologiforlaget AB; 1999:264.
Liew	2015	Denmark	1996 - 2002	ASD - ASD co - occurring with Hyperkinetic Disorder	ICD-10 F84.0-F84.9 for Autism Spectrum Disorder - subtypes: Infantile autism (F84.0), Asperger syndrome (F84.5), Pervasive Developmental Disorder not otherwise specified (PDD-NOS) (F84.1, F84.8,F84.9)	ICD-10 (International Classification of Diseases,10th revision) diagnosis of hyperkinetic disorder (HKD F90.0-F90.9)	\	\	World Health Organization. *The ICD-10 classification of mental and behavioural disorders.* Geneva: World Health Organization; 1993.
Thompson	2014	New Zeland	1995-1997	ADHD	\	1) SDQ (the Strengths and Difficulties Questionnaire) 2) CRS:R-L (Conners' Behavioural Rating Scale: Revised - Long Format)	\	\	1) Goodman R. The extended version of the Strengths and Difficulties Questionnaire as a guide to child psychiatric caseness and consequent burden. *J Child Psychol Psychiatry.* 1999;40(5):791-799. 2) 2) Conners CK. Development of *the CRS-R. In: Conners CK, editor. Conners' Rating Scales–Revised.* North Tonawanda, NY: Multi-Health Systems; 2001. p. 83–98.
Liew	2014	Denmark	1996 - 2002	ADHD	\	1) SDQ (the Strengths and Difficulties Questionnaire) 2) ICD-10 (International Classification of Diseases,10th revision) diagnosis of hyperkinetic disorder (HKD F90.0-F90.9)	\	\	1) Goodman R. The Strengths and Difficulties Questionnaire: a research note. *J Child Psychol Psychiatry.* 1997;38(5):581-586. 2) World Health Organization. *The ICD-10 classification of mental and behavioural disorders.* Geneva: World Health Organization; 1993.

Brandlistuen	2013	Norway	1999 - 2008	Psychomotor development, Behaviour, Temperament	\	\	\	1) ASQ (the Ages and Stages Questionnaire) [translated and validated in a Norwegian sample] 2) The Child Behaviour Checklist (CBCL/11/2-5/LDS) 3) EAS (the short-form Emotionality, Activity and Shyness Temperament Questionnaire)	1) Squires J, Bricker D, Potter L. Revision of a parent-completed development screening tool: Ages and Stages Questionnaires. *J Pediatr Psychol.* 1997;22(3):313-328. 2) Richter J, Janson H. A validation study of the Norwegian version of the Ages and Stages Questionnaires. *Acta Paediatr.* 2007;96(5):748-752. 3) Achenbach TM, Ruffle TM. The Child Behavior Checklist and related forms for assessing behavioral/emotional problems and competencies. *Pediatr Rev.* 2000;21(8):265-271. 4) Buss AH, Plomin R. *Temperament: Early developing personality traits*. Hillsdale (NJ): Erlbaum; 1984.
Snijder	2012	Netherlands	2001 - 2005	ASD - ADHD	CBCL1½-5 (Child Behavior Checklist for Toddlers) - Pervasive developmental problems (PDP) subscale	CPRS-R:S (Conner's Rating Scale Revised short form)			
Porta	2006	Italy	2003 - 2005	ASD - ADHD	CBCL 6-18 (Child Behaviour Checklist for Toddlers)	CBCL 6-18 (Child Behaviour Checklist for Toddlers)			1) Achenbach TM, Rescorla LA. *Manual for the ASEBA School-Age Forms and Profiles.* Burlington (VT): University of Vermont, Research Center for Children, Youth, and Families; 2001. 2) Ooi YP, Rescorla L, Ang RP, Woo B, Fung DS. Identification of autism spectrum disorders using the Child Behavior Checklist in Singapore. *J Autism Dev Disord.* 2011;41(9):1147-1156.