

Table 1. Description of included studies

Study	Characteristics		Diagnostics		Study design	Risk of bias
Setting	Population	Index test	Reference test (cut-off)			
Childhood autism rating scale (CARS)						
Systematic review: Randall (2018)						
Chlebowski (2010)	<u>Setting:</u> University psychological service clinic, children who failed the M-CHAT <u>Country:</u> US	<u>Mean age (range):</u> 26 months (21-30 months) <u>Female (%)</u> : 23% <u>Sample size:</u> 354 <u>Prevalence:</u> 0.67	CARS (cut-off: 32) *	DSM-IV TR criteria diagnosis by one psychologist/developmental paediatrician using ADOS, ADI-R and MSEL, parent interview and child-observations.	Prospective cohort study	High
Russell (2010)	<u>Setting:</u> Autism clinic/child and adolescent unit of tertiary care/teaching hospital, children suspected of ASD <u>Country:</u> Southern India	<u>Mean age (range):</u> 61 months (range NR) <u>Female (%)</u> : NR <u>Sample size:</u> 100 <u>Prevalence:</u> 0.86	CARS (cut-off: 30)	ICD-10 criteria diagnosis by multi-disciplinary team	Cohort study (secondary analysis on CARS-scores)	Low
Ventola (2006)	<u>Setting:</u> Psychological service clinic at University of Connecticut, children who failed the M-CHAT <u>Country:</u> US	<u>Mean age (range):</u> 26 months (16-31 months) <u>Female (%)</u> : 18% <u>Sample size:</u> 45 <u>Prevalence:</u> 0.8	CARS (cut-off: assumed 30)	DSM-IV criteria best estimate diagnosis (consensus based)	Prospective cohort study	High
Wiggins (2008)	<u>Setting:</u> University of Connecticut/Georgia state University, children who failed the M-CHAT <u>Country:</u> US	<u>Mean age (range):</u> 26 months (16 to 37 months) <u>Female (%)</u> : 21% <u>Sample size:</u> 142 <u>Prevalence:</u> 0.51	CARS (cut-off: assumed 30)	DSM-IV criteria diagnosis combined with clinical judgement	Prospective cohort study	Unclear
Individual studies						

Chu (2022)	<u>Setting</u> : Outpatient children for ASD-unit suspected of ASD <u>Country</u> : China	<u>Mean age</u> : 4.1 years (18 months to 14 years) <u>Female (%)</u> : 0.14 <u>Sample size</u> : 474 <u>Prevalence</u> : 0.84	CARS Multiple cut-offs were used. Diagnostic accuracy in this guideline reported for scores >30	DSM-5 confirmed diagnosis by more than two attending physicians, based on parents' description, child's development history, observations and DSM-5 criteria	Prospective cohort study	Low?
Dawkins (2016)	<u>Setting</u> : Children referred for clinical evaluation for ASD <u>Country</u> : US	<u>Mean age</u> : 4.9 years (SD 2.8 years) <u>Female (%)</u> : 25% <u>Sample size</u> : 98 <u>Prevalence</u> : 0.85	CARS	DSM-5 criteria diagnosis	Prospective cohort study	High
Ji (2023)	<u>Setting</u> : Child and adolescent psychiatry outpatient clinic (tested 2019-2020) <u>Country</u> : South Korea	<u>Mean age</u> : 48.94 months (SD 17.79 months) <u>Female (%)</u> : 20.7% <u>Sample size</u> : 220 <u>Prevalence</u> : 0.97	CARS	ADOS-2 module 1 and 2 criteria diagnosis	Retrospective chart review	High
Park (2018)	<u>Setting</u> : child adolescent psychiatry outpatient clinic (tested 2013-2014) <u>Country</u> : South Korea	<u>Mean age</u> : 49 months <u>Female (%)</u> : 12.8% <u>Sample size</u> : 78 <u>Prevalence</u> : 0.94	CARS	ADOS-2 module 1 and 2 criteria diagnosis (DSM-IV)	Retrospective chart review	High
Social communication questionnaire (SCQ)						
Ung (2016)	<u>Setting</u> : Youth presenting for neurodevelopmental testing at outpatient pediatric ASD specialty clinic <u>Country</u> : US	<u>Mean age</u> : 7.06 (SD 1.85) n=33 6.42 (SD 1.84) n=43 <u>Female (%)</u> : 13% <u>Sample size</u> : 76 <u>Prevalence</u> : 0.43	SCQ, parent reported (cut-off 15)	Assessment, including a physical exam by a pediatrician, a parent interview with the same doctor, and evaluation using the ADOS and CARS. Additional data provided by parents (e.g., social, cognitive, and motor skills, behavioral issues) were reviewed, and a multidisciplinary team discussed each child's case.	Retrospective chart review	Low?
Charman (2016)	<u>Setting</u> : Referrals to child health	<u>Mean age</u> : 35 months (SD 8.3, range 18-56 months)	SCQ, parent reported (cut-off 15)	In depth assessment, including consensus ICD-10 diagnosis by ADI-	Retrospective chart	High

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	services/speech and language therapy services. <u>Country</u> : UK	<u>Female (%)</u> : 28% <u>Sample size</u> : 120 <u>Prevalence</u> : 0.46		R and ADOS combined with assessments of IQ, language and adaptive behavior.		
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Abbreviations; NR: not reported; SD: standard deviation; M-CHAT; modified checklist for autism in toddlers

* Cut-off not consistent with clinical use of the tool, based on a publication by Lord (1995)