



CHILDHOOD AUTISM RATING SCALE

The Childhood Autism Rating Scale (CARS) is designed as a clinical rating scale for the trained clinician to rate items indicative of Autism Spectrum Disorder (ASD) after direct observation of the child. The CARS-2 is preferred over the older, original CARS. The form is used with individuals of all ages and in both clinical and research settings.

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Name	Childhood Autism Rating Scale - 2 (CARS-2)
Reference	Schopler E, Van Bourgondien ME, Wellman, GJ, Love SR (2010). Childhood Autism Rating Scale - 2 nd Edition. Los Angeles: Western Psychological Services
Summary	The CARS-2 is an update of the Childhood Autism Rating Scale (CARS), an older and widely-used rating scale for autism. The original CARS was developed primarily with individuals with comorbid intellectual functioning and was criticized for not accurately identify higher functioning individuals with ASD. The CARS-2 retained the original CARS form for use with younger or lower functioning individuals (now renamed the CARS2-ST for "Standard Form"), and it developed a separate rating scale for use with higher functioning individuals (named the CARS2-HF for "High Functioning"). Clinically, the original CARS was often misused as a parent questionnaire; it was designed as a clinician rating scale to be completed after a direct observation of the child by a professional familiar with autism who had also obtained some brief training on how to rate the CARS items. The CARS-2 retains this same format. Information from parents can be obtained with the CARS2-QPC (Questionnaire of Parent Concerns), an unscored form for parents to record observations.

Age Range	CARS2-ST: Children under age 6, or over age 6 but with an estimated IQ of 79 or lower, or a notable communication impairment. CARS-HF: Age 6 or older, with an estimated IQ of 80 or higher and fluent communication.
Format	CARS2-ST: Clinician ratings based on information gathered from an observation of the child or from the parent's completion of the CARS2-QPC. Items are rated on a 4 point scale. CARS2-HF: Clinician ratings, based on at least 2 sources of information (both direct observation and information gathered from someone who knows the individual's behavior in different settings).
Who Can Rate	Professionals who have had exposure and training in ASD and brief training about the CARS can make valid ratings. This is not a parent questionnaire, but parent observations can be obtained through the CARS2-QPC, which would be incorporated into the CARS2-ST or CARS2-HF by the professional.
Who Can Interpret	Professionals with training in ASD can interpret the results.
Results Yielded	Total scores above the cutoff of around 28 (different age ranges have slightly different cutoff scores) indicate that a full comprehensive evaluation for ASD is warranted. In addition, scores above the cutoff can be broken down into "mild-to-moderate" level of autistic behaviors vs. "severe" level (again, with slight variations depending on age and whether the ST or HF version was administered). Total scores can also be converted to T-scores that represent how the individual's behaviors compare to the large clinical norms sample of individuals obtained by the authors.
Author Cautions	The instrument is not a parent questionnaire. It is also not intended as a population screener; it was developed on referred individuals. It should not be used in isolation to make a diagnosis.
Item Development	The original CARS (now the CARS2-ST) was developed from some of the very early literature on ASD. It has been widely adopted in both clinical and research settings for decades. While very helpful when used with lower-functioning individuals, research indicated that it had a weakness in identifying individuals at the higher end of the autism spectrum. The CARS2-HF was modeled after the CARS2-ST, but some items were modified or substituted to better reflect the literature on ASD in higher functioning individuals.

Development Sample

CARS and CARS2 were developed on children and adults referred to the Division TEACCH programs in North Carolina. Division TEACCH was created in 1966 as a pioneering program serving individuals of all ages with ASD throughout the state of North Carolina. The original CARS was developed on 1606 children. For the CARS2-ST, a verification sample of 1034 was obtained. To develop the CARS2-HF, a sample of 994 was obtained. All participants were clinically evaluated through Division TEACCH.

The Center for Autism Research and The Children's Hospital of Philadelphia do not endorse or recommend any specific person or organization or form of treatment. The information included within the CAR Autism Roadmap™ and CAR Resource Directory™ should not be considered medical advice and should serve only as a guide to resources publicly and privately available. Choosing a treatment, course of action, and/or a resource is a personal decision, which should take into account each individual's and family's particular circumstances.