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## A Review of the Clinical Utility and Psychometric Properties of the Autism Spectrum Screening Questionnaire (ASSQ): Percentile Rankings, Qualitative Descriptors, and Factor Structure

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The Autism Spectrum Screening Questionnaire (ASSQ) was developed by Ehlers and colleagues (1993, 1999). It is a 27-item parent- or teacher-rated screening tool designed to identify young people between 6 and 17 years of age who show developmental differences in social and behavioural functioning consistent with Autism. This technical review provides clinicians with percentile rankings, subscales, and qualitative descriptors to enhance the interpretation and clinical utility of ASSQ scores.

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[View the ASSQ on NovoPsych.com.au](https://www.novopsych.com.au)

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## Developer

The Autism Spectrum Screening Questionnaire (ASSQ) was developed by Ehlers and colleagues (1999):

Ehlers, S., Gillberg, C., & Wing, L. (1999). A screening questionnaire for Asperger syndrome and other high-functioning autism spectrum disorders in school age children. *Journal of Autism and Developmental Disorders*, 29(2), 129–141. <https://doi.org/10.1023/a:1023040610384>

This document was developed by NovoPsych to review contemporary literature and to describe original scoring methodologies and to provide interpretation material, enhance normative data and provide qualitative descriptors.

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## Description

The Autism Spectrum Screening Questionnaire (ASSQ) is a 27-item parent- or teacher-rated screening tool designed to identify young people between 6 and 17 years of age who show developmental differences in social and behavioural functioning consistent with Autism (Ehlers et al., 1993, 1999).

The ASSQ assesses four distinct domains, informed by a recent factor analysis (Junttila et al., 2023):

- **Formal Style**, which reflects a formal or old-fashioned way of thinking, appearance, or communication style.
- **Contextual Understanding and Routines**, which reflects the ability to understand context and meaning, alongside a preference for routines.
- **Socio-Emotional Reciprocity**, which reflects engagement in social interactions and emotional exchanges.
- **Vocalisation, Movement, and Appearance**, which reflects unique vocalisations, behaviours, and physical characteristics.

Validation studies have demonstrated the ASSQ's ability to distinguish between Autistic young people, those with other neurodevelopmental or psychological conditions (e.g., ADHD), and neurotypical young people (Ehlers et al., 1999).

Scores are interpreted using established thresholds and normative data for both general and Autistic populations, with informant-specific percentiles providing additional context (Ehlers et al., 1999; Posserud et al., 2006).

The ASSQ is intended for use by qualified professionals, such as psychologists, as part of a comprehensive assessment process. It should not be used as the sole means for diagnosis.

## Psychometric Properties

The 27-item Autism Spectrum Screening Questionnaire (ASSQ) demonstrates strong reliability and validity as a screening tool for Autism in young people (Ehlers et al., 1999). Reliability evidence includes high test-retest reliability over both 2-week interval ( $r = .96$  for parent ratings) and an 8-month interval ( $r = .90$  for teacher ratings), as well as good inter-rater reliability between teachers ( $r = .79$ ), suggesting stability of scores over time and across raters.

Convergent validity is demonstrated by strong correlations with the Rutter scales, which assess general emotional and behavioural symptoms ( $r = 0.75$  for parent ratings and  $r = 0.77$  for teacher ratings). Criterion validity is supported by the ASSQ's ability to discriminate between Autistic young people, those with other neurodevelopmental or psychological conditions, such as ADHD, and neurotypical young people.

The ASSQ was designed to be completed by different informants, including parents and teachers, with different cut-off scores recommended for each type of informant. Ehlers and colleagues (1999) proposed the following cut-off scores:

- 13 for parents and 11 for teachers, to identify young people with developmental differences in social and behavioural functioning (though not necessarily Autism).
- 19 for parents and 22 for teachers, to identify Autistic young people.

For consistency and interpretability, NovoPsych uses the lower of the two cut-off scores for each category — 11 as the “Moderately Consistent with Autism” cut-off score and 19 as the “Strongly Consistent with Autism” cut-off score — regardless of the informant. This conservative approach prioritises identifying young people who may benefit from further, comprehensive assessment for Autism or other (neuro)developmental differences.

Confirmatory factor analysis of 37,036 ASSQ responses on NovoPsych validated a four-factor structure proposed by Junttila and colleagues (2023), which demonstrated the best model fit among competing models (see Supporting Information). NovoPsych renamed these factors to enhance interpretability as follows:

- Formal Style (formerly Formal Speech and Communication, as named by Junttila et al. (2023))

- Contextual Understanding and Routines (formerly Social Cognition, Utilization of Context, and Repetitive Behavior)
- Socio-Emotional Reciprocity (formerly Impairment in Socio-Emotional Reciprocity)
- Vocalisation, Movement, and Appearance (formerly Deviant Style of Speech, Use of Sound, and Special Physical Appearances)

The ASSQ was originally validated on two clinical samples (Ehlers et al., 1999). The main sample included 110 6- to 17-year-olds (87 boys and 23 girls) with various (neuro)developmental differences. The other sample included 34 6- to 16-year-old boys diagnosed with Asperger's Syndrome whose mean parent-rated and teacher-rated total ASSQ scores were 25.1 (SD = 7.3) and 26.4 (SD = 11.7), respectively. These scores were similar to those of the autism spectrum disorder group within the main sample. These means and standard deviations are used to convert the young person's total ASSQ score to the presented clinical percentile, providing useful information about the young person's level of social and behavioural functioning relative to Autistic young people.

Percentiles for the general population are from a study by Posserud, Lundervold, and Gillberg (2006, p. 170), which included 6,229 parent-rated and 9,149 teacher-rated ASSQs for 7- to 9-year old children attending all schools in Bergen, Norway in 2002. Their mean parent-rated and teacher-rated total ASSQ scores were 3.29 (SD = 4.49) and 1.99 (SD = 4.07), respectively. These percentiles are presented to contextualise the young person's score relative to typical scores among young people in the general population, offering a clearer perspective on how the young person's level of social and behavioural functioning compares to that of young people overall.

## Scoring & Interpretation

The Autism Spectrum Screening Questionnaire (ASSQ) yields a total score between 0 and 54, with higher scores indicating greater differences in social and behavioural functioning from other young people.

The total ASSQ score is expressed as a community percentile based on normative data for young people in the general population (Posserud et al., 2006) and as a clinical percentile based on data for Autistic young people (Ehlers et al., 1999). These percentiles are informant-specific, derived from either parent- or teacher-rated ASSQ data. When the informant type is "Other" or unknown, percentiles derived from parent-rated ASSQ data are used. The percentiles contextualise the young person's score relative to the typical scores of young people overall and Autistic young people specifically.

The scoring approach uses established cut-off scores to categorise the young person's score as either "Moderately Consistent with Autism" or "Strongly Consistent with Autism" (Ehlers et al., 1999).

- **Moderately Consistent with Autism: 11 or above.** About 4-7% of young people overall score 11 or above (Posserud et al., 2006). Scores in this range indicate developmental differences in social and behavioural functioning, which may be consistent with Autism but could also reflect other neurodevelopmental or psychological conditions, such as ADHD or disorders within the Disruptive, Impulse-Control, and Conduct Disorders category (e.g., Oppositional Defiant Disorder or Conduct Disorder).
- **Strongly Consistent with Autism: 19 or above.** About 1-2% of young people overall, and 75-80% of Autistic young people, score 19 or above (Ehlers et al., 1999; Posserud et al., 2006). Scores in this range suggest significant developmental differences in social and behavioural functioning consistent with Autism.

Scores are also provided for the four factors (subscales) identified by Junttila and colleagues (2023):

- **Formal Style** (Items 1, 2, and 6), which reflects a formal or old-fashioned way of thinking, appearance, or communication style.
- **Contextual Understanding and Routines** (Items 4, 5, 7, 10, 11, 13, 23, and 24), which reflects the ability to understand context and meaning, alongside a preference for routines.
- **Socio-Emotional Reciprocity** (Items 12, 15, 16, 17, 18, 19, and 25), which reflects engagement in social interactions and emotional exchanges.

- **Vocalisation, Movement, and Appearance** (Items 3, 8, 9, 14, 20, 21, 22, 26, and 27), which reflects unique vocalisations, behaviours, and physical characteristics.

The average score for each subscale is calculated by dividing the subscale's score by the number of items in the subscale, which standardises the scores and enables direct comparisons between subscales. A higher average score suggests that the young person shows greater differences in a particular area compared to other areas. Clients assessed on NovoPsych typically score highest on the Contextual Understanding and Routines subscale and the Socio-Emotional Reciprocity subscale, followed by the Vocalisation, Movement, and Appearance subscale, and lowest on the Formal Style subscale.

The scoring approach also uses qualitative descriptors to categorise ASSQ subscale scores based on average score thresholds that correspond to the total ASSQ cut-off scores. These thresholds are calculated by dividing the total cut-off scores by the number of items in the scale (i.e., 27). Specifically:

- The “Moderately Consistent with Autism” cut-off score (i.e., 11) corresponds to an average score of 0.41.
- The “Strongly Consistent with Autism” cut-off score (i.e., 19) corresponds to an average score of 0.70.

These thresholds are used to categorise the average score for each subscale as follows.

- “Elevated” corresponds to an average score of 0.41–0.69, indicating differences consistent with the total scale's “Moderately Consistent with Autism” range.
- “High” corresponds to an average score of 0.70–2, indicating differences consistent with the total scale's “Strongly Consistent with Autism” range.

Graphs are presented showing the young person's total ASSQ score and the young person's average score for each subscale. A graph is also presented comparing the young person's total ASSQ score to the normative distribution of scores among Autistic young people and young people in the general population, with shaded areas corresponding to scores between the 25th and 75th percentile (Ehlers et al., 1999; Posserud et al., 2006). This graph contextualises the young person's score relative to the typical scores of Autistic young people and young people overall.

## Supporting Information

This section presents ASSQ percentiles for the general population as reported in a study by Posserud, Lundervold, and Gillberg (2006), and outlines NovoPsych’s development of percentile rankings for an Autistic sample based on data obtained from a study by Ehlers, Gillberg, and Wing (1999). These norms enhance the interpretability of ASSQ scores.

This section also outlines NovoPsych’s development of classification thresholds and qualitative descriptors for ASSQ scores. These descriptors provide clinicians with clear and consistent classifications of severity levels, supporting better understanding and communication of ASSQ scores.

Additionally, this section provides an overview of the underlying structure of the ASSQ according to competing factor models, as well as the rationale for NovoPsych’s adoption of a four-factor structure proposed by Junttila and colleagues (2023).

Lastly, this section describes the structure and logic of the automated interpretive text that NovoPsych provides in ASSQ reports. This interpretive text provides clinicians with comprehensive, tailored interpretations of ASSQ results.

### *Percentile Calculations*

Percentiles for the general population were taken from a study by Posserud et al. (2006, p. 170). These percentiles contextualise the young person’s score relative to typical scores among young people in the general population, offering a clearer perspective on how the young person’s level of social and behavioural functioning compares to that of young people overall.

For the Autistic sample, the mean total ASSQ score for the parent-rated version was 25.1 (SD = 7.3), and that for the teacher-rated version was 26.4 (SD = 11.7) (Ehlers et al., 1999). NovoPsych has used these means and standard deviations to convert ASSQ scores to percentiles, as shown in Table 1, according to the following equation.

$$\text{Percentile} = 100 \times \Phi((x - M)/SD)$$

Where:

- $x$  is the score
- $M$  is the mean
- $SD$  is the standard deviation
- $\Phi$  is the [standard normal cumulative distribution function](#)

This equation first standardises the score to a z-score by subtracting the mean and dividing by the standard deviation, then converts the z-score to a percentile by applying the standard normal cumulative distribution function and multiplying by 100.

These percentiles contextualise the young person’s score relative to typical scores among Autistic young people, offering a clearer perspective on how the young person’s level of social and behavioural functioning compares to that of Autistic young people.

*Percentile Table*

Table 1. Percentiles for total ASSQ scores relative to general population and Autistic samples.

Descriptor	Score	Percentile			
		Community		Autistic	
		Parent-Rated	Teacher-Rated	Parent-Rated	Teacher-Rated
	0	26	52	0.03	1.2
	1	45	69	0.05	1.5
	2	60	79	0.08	1.9
	3	70	84	0.12	2.3
	4	77	87	0.19	2.8
	5	82	90	0.29	3.4
	6	85	91	0.44	4.1
	7	88	93	0.66	5
	8	90	94	0.96	6
	9	92	95	1.4	7
	10	93	95.5	1.9	8
	11	94	96.3	2.7	9
	12	95	96.7	3.6	11
Moderately	13	96.0	97.1	5	13
Consistent	14	96.6	97.5	6	14
with	15	97.0	97.7	8	16
Autism	16	97.5	98.0	11	19
	17	97.9	98.3	13	21
	18	98.2	98.5	17	24
	19	98.4	98.8	20	26
	20	98.7	98.9	24	29
	21	98.8	99.10	29	32
	22	99.02	99.22	34	35
	23	99.13	99.34	39	39
	24	99.29	99.43	44	42
	25	99.47	99.51	49	45
	26	99.53	99.64	55	49
	27	99.68	99.68	60	52
	28	99.74	99.72	65	55
	29	99.78	99.77	70	59
	30	99.84	99.80	75	62
	31	99.92	99.85	79	65
	32	99.94	99.88	83	68
	33	99.95	99.91	86	71
Strongly	34	99.97	99.93	89	74
Consistent	35	99.97	99.96	91	77
with	36	99.97	99.97	93	79
Autism	37	99.97	99.98	95	82



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38	99.97	99.98	96.1	84
39	99.98	99.98	97.2	86
40	99.98	99.99	97.9	88
41	99.98	99.99	98.5	89
42	99.99	99.99	99.0	91
43	99.99	99.99	99.29	92
44	99.99	99.99	99.52	93
45	99.99	99.99	99.68	94
46	99.99	99.99	99.79	95
47	99.99	99.99	99.87	96.1
48	99.99	99.99	99.91	96.8
49	99.99	99.99	99.95	97.3
50	99.99	99.99	99.97	97.8
51	99.99	99.99	99.98	98.2
52	99.99	99.99	99.99	98.6
53	99.99	99.99	99.99	98.9
54	99.99	99.99	99.99	99.08



## Descriptors

In addition to percentile rankings, NovoPsych has developed qualitative descriptors for specific ranges of the total ASSQ score and ASSQ subscale scores.

### Total scale

The ASSQ was designed to be completed by different informants, including parents and teachers, with different cut-off scores recommended for each type of informant. Ehlers and colleagues (1999) proposed the following cut-off scores:

- 13 for parents and 11 for teachers, to identify young people with developmental differences in social and behavioural functioning (though not necessarily Autism).
- 19 for parents and 22 for teachers, to identify Autistic young people.

For consistency and interpretability, NovoPsych uses the lower of the two cut-off scores for each category — 11 as the “Moderately Consistent with Autism” cut-off score and 19 as the “Strongly Consistent with Autism” cut-off score — regardless of the informant. This conservative approach prioritises identifying young people who may benefit from further, comprehensive assessment for Autism or other (neuro)developmental differences.

- **Moderately Consistent with Autism: 11 or above.** Scores in this range indicate developmental differences in social and behavioural functioning, which may be consistent with Autism but could also reflect other neurodevelopmental or psychological conditions, such as ADHD or disorders within the Disruptive, Impulse-Control, and Conduct Disorders category (e.g., Oppositional Defiant Disorder or Conduct Disorder).
- **Strongly Consistent with Autism: 19 or above.** Scores in this range suggest significant developmental differences in social and behavioural functioning consistent with Autism.

The score ranges, and corresponding percentiles, are highlighted in different colours in Table 1.

### Subscales

For ASSQ subscale scores, qualitative descriptors are based on average score thresholds that correspond to the total ASSQ cut-off scores. These thresholds are calculated by dividing the total cut-off scores by the number of items in the scale (i.e., 27). Specifically:

- “Moderately Consistent with Autism” cut-off score (i.e., 11) corresponds to an average score of 0.41.
- The “Strongly Consistent with Autism” cut-off score (i.e., 19) corresponds to an average score of 0.70.

The average score for each subscale is calculated by dividing the subscale’s score by the number of items in the subscale, then categorised using the above average score thresholds as follows.

- “Elevated” corresponds to an average score of 0.41–0.69, indicating differences consistent with the total scale’s “Moderately Consistent with Autism” range.
- “High” corresponds to an average score of 0.70–2, indicating differences consistent with the total scale’s “Strongly Consistent with Autism” range.

### *Factor Models*

The ASSQ was initially designed to reflect “behaviour characteristic of Asperger traits and syndrome” (Ehlers et al., 1993, p. 1333), with 27 items covering four domains:

- **Social Interaction** (Items 2, 12, 13, 14, 15, 16, 17, 18, 19, 25, 27) [11 items]
- **Communication Problems** (Items 1, 4, 5, 6, 7, 11) [6 items]
- **Restricted and Repetitive Behavior** (Items 3, 10, 22, 23, 24) [5 items]
- **Motor Clumsiness and Other Associated Symptoms** (including motor and vocal tics) (Items 8, 9, 20, 21, 26) [5 items]

Factor analyses have since identified alternative structures, including a three-factor solution presented by Posserud and colleagues (2008) with the following factors:

- **Social Difficulties** (Items 3, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 25) [11 items]
- **Tics/Motor/OCD** (Items 9, 20, 21, 22, 23, 26, and 27) [7 items]
- **Autistic Style** (Items 1, 2, 4, 5, 6, 7, 10) [7 items]

More recently, Junttila and colleagues (2023) proposed a four-factor solution:

- **Formal Speech and Communication** (Items 1, 2, and 6) [3 items]
- **Social Cognition, Utilization of Context, and Repetitive Behavior** (Items 4, 5, 7, 10, 11, 13, 23, and 24) [8 items]
- **Impairment in Socio-Emotional Reciprocity** (Items 12, 15, 16, 17, 18, 19, and 25) [7 items]
- **Deviant Style of Speech, Use of Sound, and Special Physical Appearances** (Items 3, 8, 9, 14, 20, 21, 22, 26, and 27) [9 items]

Table 2 provides a summary of the competing factor models, illustrating their respective structures.

To determine which factor structure to use as the basis for calculating subscale scores, NovoPsych performed Confirmatory Factor Analysis (CFA) on 37,036 responses to the ASSQ. The CFA demonstrated that the four-factor solution presented by Junttila and colleagues (2023) showed the best model fit ( $\chi^2(320) = 47,562.134$ ; Robust RMSEA = 0.049; SRMR = 0.047; Robust TLI = 0.978; Robust CFI = 0.980) when compared with the four domains outlined by the developers, Ehlers and colleagues (1993, 1999), and the three-factor solution presented by Posserud and colleagues (2008).

Recognising the need for respectful, concise, and meaningful factor names, NovoPsych renamed the four factors as follows:

- **Formal Style** (Items 1, 2, and 6) [3 items]
- **Contextual Understanding and Routines** (Items 4, 5, 7, 10, 11, 13, 23, and 24) [8 items]
- **Socio-Emotional Reciprocity** (Items 12, 15, 16, 17, 18, 19, and 25) [7 items]
- **Vocalisation, Movement, and Appearance** (Items 3, 8, 9, 14, 20, 21, 22, 26, and 27) [9 items]

Table 2. Factor models.

Item Number	Item Text	4 proposed domains (based on Ehlers et al., 1993, 1999; see Note)	3-factor solution for Teacher-rated ASSQ (Posserud et al., 2008)	3-factor solution for Parent-rated ASSQ (Posserud et al., 2008)	4-factor solution (Junttila et al., 2023)
1	is old-fashioned or precocious	(2) communication	(3) autistic style	(3) autistic style	(1) formal speech and communication
2	is regarded as an “eccentric professor” by the other children	(1) social interaction	(3) autistic style	(3) autistic style	(1) formal speech and communication
3	lives somewhat in a world of his/her own with restricted idiosyncratic intellectual interests	(3) restricted and repetitive behavior	(1) social difficulties	(1) social difficulties	(4) deviant style of speech and use of sound and special physical appearances
4	accumulates facts on certain subjects (good rote memory) but does not really understand the meaning	(2) communication	(3) autistic style	(3) autistic style	(2) social cognition, utilization of context and repetitive behavior
5	has a literal understanding of ambiguous and metaphorical language	(2) communication	(3) autistic style	(1) social difficulties AND (3) autistic style	(2) social cognition, utilization of context and repetitive behavior
6	has a deviant style of communication with a formal fussy, old-fashioned or “robotlike” language	(2) communication	(3) autistic style	(3) autistic style	(1) formal speech and communication
7	invents idiosyncratic words and expressions	(2) communication	(3) autistic style	(3) autistic style	(2) social cognition, utilization of context and repetitive behavior
8	has a different voice or speech	(4) motor clumsiness and other associated symptoms (including motor and vocal tics)	(not included in any factor)	(not included in any factor)	(4) deviant style of speech and use of sound and special physical appearances
9	expresses sounds involuntarily, clears throat, grunts, smacks, cries or screams	(4) motor clumsiness and other associated symptoms (including motor and vocal tics)	(2) tics/motor/OCD	(2) tics/motor/OCD	(4) deviant style of speech and use of sound and special physical appearances

10	is surprisingly good at some things and surprisingly poor at others	(3) restricted and repetitive behavior	(3) autistic style	(3) autistic style	(2) social cognition, utilization of context and repetitive behavior
11	uses language freely but fails to make adjustment to fit social contexts or the needs of different listeners	(2) communication	(1) social difficulties	(1) social difficulties	(2) social cognition, utilization of context and repetitive behavior
12	lacks empathy	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
13	makes naive and embarrassing remarks	(1) social interaction	(1) social difficulties	(1) social difficulties	(2) social cognition, utilization of context and repetitive behavior
14	has a deviant style of gaze	(1) social interaction	(1) social difficulties	(1) social difficulties	(4) deviant style of speech and use of sound and special physical appearances
15	wishes to be sociable but fails to make relationships with peers	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
16	can be with other children but only on his/her terms	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
17	lacks best friend	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
18	lacks common sense	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
19	is poor at games: no idea of cooperating in a team, scores "own goals"	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
20	has clumsy, ill coordinated, ungainly, awkward movements or gestures	(4) motor clumsiness and other associated symptoms (including motor and vocal tics)	(2) tics/motor/OCD	(1) social difficulties AND (2) tics/motor/OCD	(4) deviant style of speech and use of sound and special physical appearances

21	has involuntary face or body movements	(4) motor clumsiness and other associated symptoms (including motor and vocal tics)	(2) tics/motor/OCD	(2) tics/motor/OCD	(4) deviant style of speech and use of sound and special physical appearances
22	has difficulties in completing simple daily activities because of compulsory repetition of certain actions or thoughts	(3) restricted and repetitive behavior	(2) tics/motor/OCD	(2) tics/motor/OCD	(4) deviant style of speech and use of sound and special physical appearances
23	has special routines: insists on no change	(3) restricted and repetitive behavior	(2) tics/motor/OCD	(2) tics/motor/OCD	(2) social cognition, utilization of context and repetitive behavior
24	shows idiosyncratic attachment to objects	(3) restricted and repetitive behavior	(not included in any factor)	(not included in any factor)	(2) social cognition, utilization of context and repetitive behavior
25	is bullied by other children	(1) social interaction	(1) social difficulties	(1) social difficulties	(3) impairment in socio-emotional reciprocity
26	has markedly unusual facial expression	(4) motor clumsiness and other associated symptoms (including motor and vocal tics)	(2) tics/motor/OCD	(2) tics/motor/OCD	(4) deviant style of speech and use of sound and special physical appearances
27	has markedly unusual posture	(1) social interaction	(2) tics/motor/OCD	(2) tics/motor/OCD	(4) deviant style of speech and use of sound and special physical appearances

Note: Ehlers and colleagues (1993, 1999) categorised the items into four domains — social interaction (11 items), communication problems (6 items), restricted and repetitive behavior (5 items), and motor clumsiness and other associated symptoms (including motor and vocal tics) (5 items) — however, the specific allocation of each item to a domain was not provided in their publications. NovoPsych considered the content and phrasing of each item to determine which domain it most aligns with while ensuring consistency with the number of items in each domain as outlined by Ehlers and colleagues (1993, 1999).

### Interpretive Text

The interpretive text for the ASSQ follows a structured format that adapts based on the young person's scores. The text begins with a general statement about the young person's overall level of social and behavioural functioning, categorising their total score as either "not consistent with Autism", "moderately consistent with Autism", or "strongly consistent with Autism" when above the respective thresholds. This statement includes specific percentile comparisons to both general population and autistic reference groups.

*"The <" | "parent/guardian's" | "teacher's"> responses on the Autism Spectrum Screening Questionnaire (ASSQ) indicate that the young person's social and behavioural functioning is <"not consistent with Autism" | "moderately consistent with Autism" | "strongly consistent with Autism". The total ASSQ score is on the XXst/nd/rd/th percentile when compared to young people in the general population and the XXst/nd/rd/th percentile when compared to Autistic young people."*

Additional context is then provided based on the classification of the total score.

For "not consistent with Autism" scores:

*"A score in this range suggests no or minor developmental differences in social and behavioural functioning."*

For "Moderately Consistent with Autism" scores:

*"A score in this range indicates developmental differences in social and behavioural functioning, which may be consistent with Autism but could also reflect other neurodevelopmental or psychological conditions, such as ADHD or disorders within the Disruptive, Impulse-Control, and Conduct Disorders category (e.g., Oppositional Defiant Disorder or Conduct Disorder)."*

For "Strongly Consistent with Autism" scores, the interpretation varies based on the clinical percentile:

50th percentile or lower:  
*"A score in this range suggests significant developmental differences in social and behavioural functioning consistent with Autism."*

Above 50th percentile:  
*"A score in this range suggests significant developmental differences in social and behavioural functioning consistent with Autism, and that the young person's score falls within the top XX percent when compared to Autistic young people."*

The text then describes any subscales that score in the "Elevated" or "High" ranges (hereafter referred to as "notable" subscales). These subscales are presented in order, first by classification (High before Elevated) and then by average score. For each notable subscale, the text includes:

- The subscale's classification
- The implications of high scores in this area
- The specific questionnaire items that received the highest ratings

For Elevated or High scores on the Formal Style subscale:

*“The young person’s score on the **Formal Style** subscale is in the <“Elevated” | “High”> range <“(average score of 0.41-0.69)” | “(average score of 0.70-2)”>. This suggests that the young person may have a formal or old-fashioned way of thinking, appearance, or communication style. This may influence how the young person is perceived by and interacts with others, potentially leading to social challenges. The items with the highest ratings were:”*

For Elevated or High scores on the Contextual Understanding and Routines subscale:

*“The young person’s score on the **Contextual Understanding and Routines** subscale is in the <“Elevated” | “High”> range <“(average score of 0.41-0.69)” | “(average score of 0.70-2)”>. This indicates challenges in understanding context and meaning, which may impact social engagement, alongside a strong preference for routines that may limit adaptability. The items with the highest ratings were:”*

For Elevated or High scores on the Socio-Emotional Reciprocity subscale:

*“The young person’s score on the **Socio-Emotional Reciprocity** subscale is in the <“Elevated” | “High”> range <“(average score of 0.41-0.69)” | “(average score of 0.70-2)”>. This suggests that the young person may experience challenges with social interactions and emotional exchanges, potentially impacting their ability to form and maintain relationships. The items with the highest ratings were:”*

For Elevated or High scores on the Vocalisation, Movement, and Appearance subscale:

*“The young person’s score on the **Vocalisation, Movement, and Appearance** subscale is in the <“Elevated” | “High”> range <“(average score of 0.41-0.69)” | “(average score of 0.70-2)”>. This reflects the presence of unique vocalisations, movements, or physical characteristics that may make the young person stand out as different, potentially leading to social challenges such as exclusion. The items with the highest ratings were:”*

The interpretive text is adjusted based on appropriate normative data for the informant type, ensuring that comparisons are made against relevant reference groups. This adaptability in score interpretation reflects the fact that different informants, such as parents/guardians and teachers, often provide different ratings of the same young person.

## Developer

Ehlers, S., Gillberg, C., & Wing, L. (1999). A screening questionnaire for Asperger syndrome and other high-functioning autism spectrum disorders in school age children. *Journal of Autism and Developmental Disorders*, 29(2), 129-141. <https://doi.org/10.1023/a:1023040610384>

## References

Ehlers, S., & Gillberg, C. (1993). The epidemiology of Asperger syndrome. A total population study. *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 34(8), 1327-1350.

<https://doi.org/10.1111/j.1469-7610.1993.tb02094.x>

Ehlers, S., Gillberg, C., & Wing, L. (1999). A screening questionnaire for Asperger syndrome and other high-functioning autism spectrum disorders in school age children. *Journal of Autism and Developmental Disorders*, 29(2), 129-141. <https://doi.org/10.1023/a:1023040610384>

Junttila, M., Jussila, K., Joskitt, L., Ebeling, H., Kielinen, M., Loukusa, S., Miettunen, J., Mäntymaa, M., & Mattila, M. L. (2023). Factor analysis of the autism spectrum screening questionnaire in a population-based child sample. *Nordic Journal of Psychiatry*, 77(7), 696–705. <https://doi.org/10.1080/08039488.2023.2225060>

Posserud, M. B., Lundervold, A. J., & Gillberg, C. (2006). Autistic features in a total population of 7-9-year-old children assessed by the ASSQ (Autism Spectrum Screening Questionnaire). *Journal of Child Psychology and Psychiatry, and Allied Disciplines*, 47(2), 167-175. <https://doi.org/10.1111/j.1469-7610.2005.01462.x>

Posserud, B., Lundervold, A. J., Steijnen, M. C., Verhoeven, S., Stormark, K. M., & Gillberg, C. (2008). Factor analysis of the Autism Spectrum Screening Questionnaire. *Autism*, 12(1), 99-112.

<https://doi.org/10.1177/1362361307085268>





## Assessment Questions



NovoPsych

### Autism Spectrum Screening Questionnaire (ASSQ)

**Instructions:**

Please read each statement below and indicate whether this young person stands out as different from other people of their age in the following ways by selecting No, Somewhat, or Yes.

		No	Somewhat	Yes
1	is old-fashioned or precocious	0	1	2
2	is regarded as an "eccentric professor" by the other children	0	1	2
3	lives somewhat in a world of his/her own with restricted idiosyncratic intellectual interests	0	1	2
4	accumulates facts on certain subjects (good rote memory) but does not really understand the meaning	0	1	2
5	has a literal understanding of ambiguous and metaphorical language	0	1	2
6	has a deviant style of communication with a formal, fussy, old-fashioned or "robot like" language	0	1	2
7	invents idiosyncratic words and expressions	0	1	2
8	has a different voice or speech	0	1	2
9	expresses sounds involuntarily; clears throat, grunts, smacks, cries or screams	0	1	2
10	is surprisingly good at some things and surprisingly poor at others	0	1	2
11	uses language freely but fails to make adjustment to fit social contexts or the needs of different listeners	0	1	2
12	lacks empathy	0	1	2
13	makes naive and embarrassing remarks	0	1	2
14	has a deviant style of gaze	0	1	2
15	wishes to be sociable but fails to make relationships with peers	0	1	2
16	can be with other children but only on his/her terms	0	1	2
17	lacks best friend	0	1	2



		No	Somewhat	Yes
18	lacks common sense	0	1	2
19	is poor at games: no idea of cooperating in a team, scores "own goals"	0	1	2
20	has clumsy, ill coordinated, ungainly, awkward movements or gestures	0	1	2
21	has involuntary face or body movements	0	1	2
22	has difficulties in completing simple daily activities because of compulsory repetition of certain actions or thoughts	0	1	2
23	has special routines: insists on no change	0	1	2
24	shows idiosyncratic attachment to objects	0	1	2
25	is bullied by other children	0	1	2
26	has markedly unusual facial expression	0	1	2
27	has markedly unusual posture	0	1	2
28	Who is completing this questionnaire?	1	2	3

**Developer Reference:**

Ehlers, S., Gillberg, C., & Wing, L. (1999). A screening questionnaire for Asperger syndrome and other high-functioning autism spectrum disorders in school age children. *Journal of Autism and Developmental Disorders*, 29(2), 129-141. <https://doi.org/10.1023/a:1023040610384>

**Administer Now**

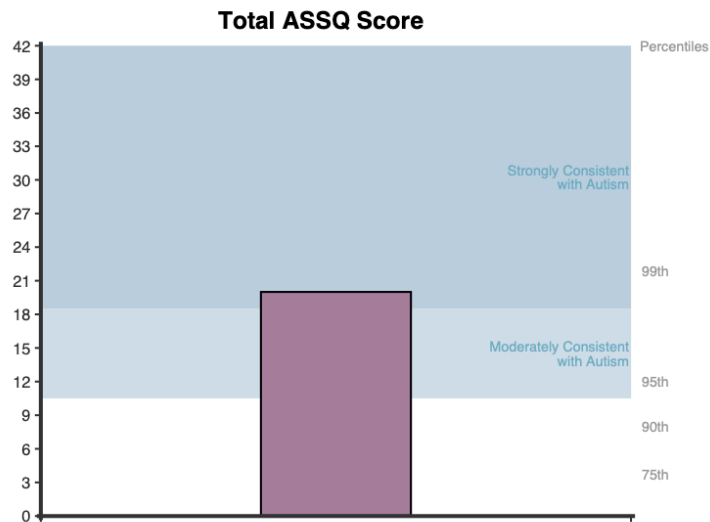
## Sample Results

### Autism Spectrum Screening Questionnaire (ASSQ)

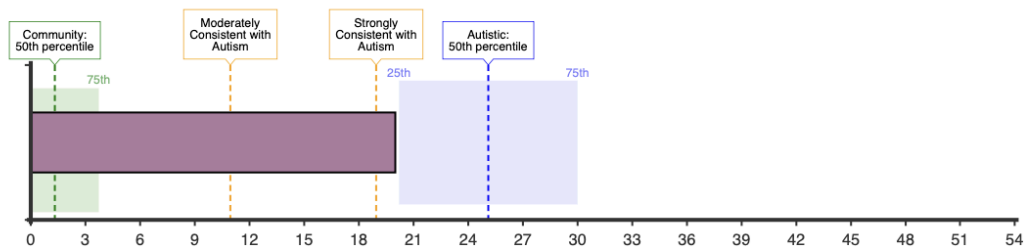
<i>Client Name</i>	Generic Client	<i>Date administered</i>	24 Jan 2025
<i>Date of birth (age)</i>	1 Jan 2017 (8)	<i>Time taken</i>	3 min 54s
<i>Assessor</i>	Dr Simon Baker		

### Total ASSQ Score

	Score	Community Percentile	Autistic Percentile	Descriptor
Total ASSQ (0-54)	20	98.7	24	Strongly Consistent with Autism



### Total ASSQ Score Compared to Community and Autistic Distributions



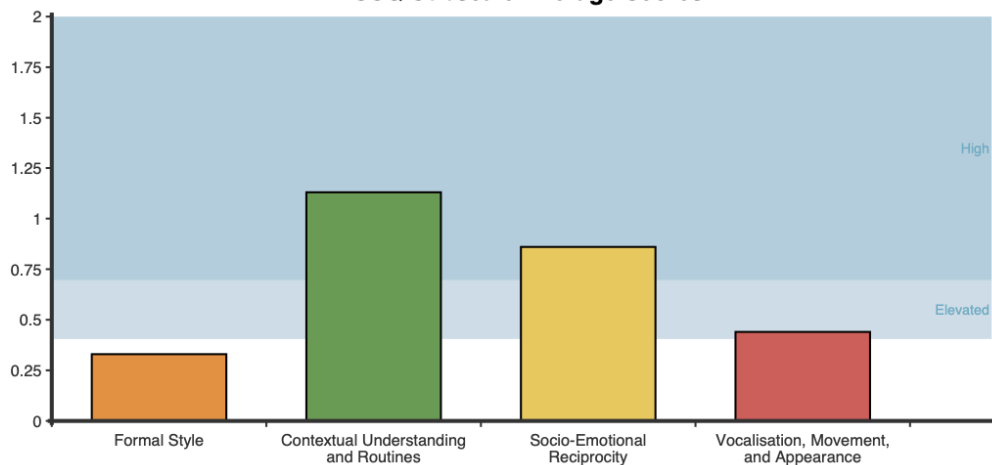


<b>Client Name</b>	Generic Client
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### Subscale Scores

	Score	Average (0-2)	Descriptor
Formal Style (0-6)	1	0.33	-
Contextual Understanding and Routines (0-16)	9	1.13	High
Socio-Emotional Reciprocity (0-14)	6	0.86	High
Vocalisation, Movement, and Appearance (0-18)	4	0.44	Elevated

ASSQ Subscale Average Scores



### Interpretation

The parent/guardian's responses on the Autism Spectrum Screening Questionnaire (ASSQ) indicate that the young person's social and behavioural functioning is strongly consistent with autism. The total ASSQ score is on the 98.7th percentile when compared to young people in the general population and the 24th percentile when compared to Autistic young people. A score in this range suggests significant developmental differences in social and behavioural functioning consistent with Autism.

The young person's score on the **Contextual Understanding and Routines** subscale is in the High range (average score of 0.70-2). This indicates challenges in understanding context and meaning, which may impact social engagement, alongside a strong preference for routines that may limit adaptability. The items with the highest ratings were:

- 23. *has special routines: insists on no change (Yes)*
- 4. *accumulates facts on certain subjects (good rote memory) but does not really understand the meaning (Somewhat)*
- 5. *has a literal understanding of ambiguous and metaphorical language (Somewhat)*
- 7. *invents idiosyncratic words and expressions (Somewhat)*



<b>Client Name</b>	Generic Client
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### Interpretation (cont.)

- 10. is surprisingly good at some things and surprisingly poor at others (Somewhat)

The young person's score on the **Socio-Emotional Reciprocity** subscale is in the High range (average score of 0.70-2). This suggests that the young person may experience challenges with social interactions and emotional exchanges, potentially impacting their ability to form and maintain relationships. The items with the highest ratings were:

- 12. *lacks empathy (Somewhat)*
- 15. *wishes to be sociable but fails to make relationships with peers (Somewhat)*
- 16. *can be with other children but only on his/her terms (Somewhat)*
- 17. *lacks best friend (Somewhat)*
- 19. *is poor at games: no idea of cooperating in a team, scores "own goals" (Somewhat)*

The young person's score on the **Vocalisation, Movement, and Appearance** subscale is in the Elevated range (average score of 0.41-0.69). This reflects the presence of unique vocalisations, movements, or physical characteristics that may make the young person stand out as different, potentially leading to social challenges such as exclusion. The items with the highest ratings were:

- 3. *lives somewhat in a world of his/her own with restricted idiosyncratic intellectual interests (Somewhat)*
- 9. *expresses sounds involuntarily; clears throat, grunts, smacks, cries or screams (Somewhat)*
- 21. *has involuntary face or body movements (Somewhat)*
- 26. *has markedly unusual facial expression (Somewhat)*

### Scoring and Interpretation Information

For comprehensive information on the Autism Spectrum Screening Questionnaire (ASSQ), [see here](#).

The Autism Spectrum Screening Questionnaire (ASSQ) yields a total score between 0 and 54, with higher scores indicating greater differences in social and behavioural functioning from other young people.

The total ASSQ score is expressed as a community percentile based on normative data for young people in the general population (Posserud et al., 2006) and as a clinical percentile based on data for Autistic young people (Ehlers et al., 1999). These percentiles are informant-specific, derived from either parent- or teacher-rated ASSQ data. When the informant type is "Other" or unknown, percentiles derived from parent-rated ASSQ data are used. The percentiles contextualise the young person's score relative to the typical scores of young people overall and Autistic young people specifically.

The scoring approach uses established cut-off scores to categorise the young person's score as either "Moderately Consistent with Autism" or "Strongly Consistent with Autism" (Ehlers et al., 1999).

- Moderately Consistent with Autism: 11 or above. About 4-7% of young people overall score 11 or above (Posserud et al., 2006). Scores in this range indicate developmental differences in social and behavioural functioning, which may be consistent with Autism but could also reflect other neurodevelopmental or psychological conditions, such as ADHD or disorders within the Disruptive, Impulse-Control, and Conduct Disorders category (e.g., Oppositional Defiant



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<b>Client Name</b>	Generic Client
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### Scoring and Interpretation Information (cont.)

Disorder or Conduct Disorder).

- Strongly Consistent with Autism: 19 or above. About 1-2% of young people overall, and 75-80% of Autistic young people, score 19 or above (Ehlers et al., 1999; Posserud et al., 2006). Scores in this range suggest significant developmental differences in social and behavioural functioning consistent with Autism.

Scores are also provided for the four factors (subscales) identified by Junttila and colleagues (2023):

- Formal Style (Items 1, 2, and 6), which reflects a formal or old-fashioned way of thinking, appearance, or communication style.
- Contextual Understanding and Routines (Items 4, 5, 7, 10, 11, 13, 23, and 24), which reflects the ability to understand context and meaning, alongside a preference for routines.
- Socio-Emotional Reciprocity (Items 12, 15, 16, 17, 18, 19, and 25), which reflects engagement in social interactions and emotional exchanges.
- Vocalisation, Movement, and Appearance (Items 3, 8, 9, 14, 20, 21, 22, 26, and 27), which reflects unique vocalisations, behaviours, and physical characteristics.

The average score for each subscale is calculated by dividing the subscale's score by the number of items in the subscale, which standardises the scores and enables direct comparisons between subscales. A higher average score suggests that the young person shows greater differences in a particular area compared to other areas. Clients assessed on NovoPsych typically score highest on the Contextual Understanding and Routines subscale and the Socio-Emotional Reciprocity subscale, followed by the Vocalisation, Movement, and Appearance subscale, and lowest on the Formal Style subscale.

The scoring approach also uses qualitative descriptors to categorise ASSQ subscale scores based on average score thresholds that correspond to the total ASSQ cut-off scores. These thresholds are calculated by dividing the total cut-off scores by the number of items in the scale (i.e., 27). Specifically:

- The "Moderately Consistent with Autism" cut-off score (i.e., 11) corresponds to an average score of 0.41.
- The "Strongly Consistent with Autism" cut-off score (i.e., 19) corresponds to an average score of 0.70.

These thresholds are used to categorise the average score for each subscale as follows.

- "Elevated" corresponds to an average score of 0.41–0.69, indicating differences consistent with the total scale's "Moderately Consistent with Autism" range.
- "High" corresponds to an average score of 0.70–2, indicating differences consistent with the total scale's "Strongly Consistent with Autism" range.

Graphs are presented showing the young person's total ASSQ score and the young person's

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<b>Client Name</b>	Generic Client
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**Scoring and Interpretation Information (cont.)**

average score for each subscale. A graph is also presented comparing the young person's total ASSQ score to the normative distribution of scores among Autistic young people and young people in the general population, with shaded areas corresponding to scores between the 25th and 75th percentile (Ehlers et al., 1999; Posserud et al., 2006). This graph contextualises the young person's score relative to the typical scores of Autistic young people and young people overall.

**Client Responses**

		No	Somewhat	Yes
1	is old-fashioned or precocious	0	1	2
2	is regarded as an "eccentric professor" by the other children	0	1	2
3	lives somewhat in a world of his/her own with restricted idiosyncratic intellectual interests	0	1	2
4	accumulates facts on certain subjects (good rote memory) but does not really understand the meaning	0	1	2
5	has a literal understanding of ambiguous and metaphorical language	0	1	2
6	has a deviant style of communication with a formal, fussy, old-fashioned or "robot like" language	0	1	2
7	invents idiosyncratic words and expressions	0	1	2
8	has a different voice or speech	0	1	2
9	expresses sounds involuntarily; clears throat, grunts, smacks, cries or screams	0	1	2
10	is surprisingly good at some things and surprisingly poor at others	0	1	2
11	uses language freely but fails to make adjustment to fit social contexts or the needs of different listeners	0	1	2
12	lacks empathy	0	1	2
13	makes naive and embarrassing remarks	0	1	2
14	has a deviant style of gaze	0	1	2
15	wishes to be sociable but fails to make relationships with peers	0	1	2



<b>Client Name</b>	Generic Client
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**Client Responses (cont.)**

		No	Somewhat	Yes
16	can be with other children but only on his/her terms	0	1	2
17	lacks best friend	0	1	2
18	lacks common sense	0	1	2
19	is poor at games: no idea of cooperating in a team, scores "own goals"	0	1	2
20	has clumsy, ill coordinated, ungainly, awkward movements or gestures	0	1	2
21	has involuntary face or body movements	0	1	2
22	has difficulties in completing simple daily activities because of compulsory repetition of certain actions or thoughts	0	1	2
23	has special routines: insists on no change	0	1	2
24	shows idiosyncratic attachment to objects	0	1	2
25	is bullied by other children	0	1	2
26	has markedly unusual facial expression	0	1	2
27	has markedly unusual posture	0	1	2
28	Who is completing this questionnaire?			
	1 <b>Parent/Guardian</b>			
	2 Teacher			
	3 Other			