

STAT-NCS Test Protocol

*Wendy L. Stone
Opal Y. Ousley
Amy R. Swanson*



VANDERBILT KENNEDY CENTER
TREATMENT & RESEARCH INSTITUTE FOR AUTISM SPECTRUM DISORDERS

Treatment and Research Institute for Autism Spectrum Disorders (TRIAD)

Vanderbilt Kennedy Center • Peabody Box 74 • 230 Appleton Place • Nashville, TN 37203

STAT@Vanderbilt.edu • www.kc.vanderbilt.edu/STAT

© 1999, 2003, 2006, 2008, 2010 Vanderbilt University. All rights reserved.

Public reporting burden for this collection of information is estimated to average 20 minutes. **An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.** Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: NIH, Project Clearance Branch, 6705 Rockledge Drive, MSC 7974, Bethesda, MD 20892-7974, ATTN: PRA (0925-0661). Do not return the completed form to this address.

STAT-NCS Scoring Overview

The STAT-NCS is designed to assess social responsiveness and task performance during 12 interactive items with a trained examiner. Each item consists of 1-10 trials. For each item, three behavioral dimensions are evaluated: Response to Press, Social Engagement, and Atypical Behaviors. A quick guide to scoring each behavioral dimension is presented below:

Response to Press

Item Score reflects the child's best performance across all trials of an item

Score	Items	Definition
PASS	ALL	Child responds to the press with behaviors that meet criteria for a Pass (defined separately for each item)
EMERGE	All except Directing Attention	Child responds to the press in some way, but his/her response does not meet criteria for a Pass (defined separately for each item)
FAIL	ALL	Child makes no attempt to respond to the press OR displays a response unrelated to the press
REFUSE	ALL	Child responds to the press by saying "No" or shaking head to indicate "No"

Social Engagement

Item Score provides an overall rating of the child's behavior across all trials of an item

Definition: The extent to which the child shows regard for you as a **social interaction partner**, as demonstrated in social and communicative behaviors such as: physically orienting him/herself toward you, involving you in his/her activities, looking at you during interactions, initiating interactions with you and responding to your social bids, sharing his/her interests with you, sharing his/her pleasure with you, showing off, or teasing you

Score	Definition
1	Child regards the examiner as a social partner MOST OF THE TIME
2	Child regards the examiner as a social partner SOME OF THE TIME
3	Child shows VERY LITTLE regard for the examiner as a social partner

Atypical Behavior

Item Score indicates presence of one or more behaviors in each category across all trials of an item

Behavior Category	Examples
Atypical language features	Unusual or repetitive sounds, vocalizations, jargon, or echoing; Unusual speech intonation, rhythm, or volume; Idiosyncratic language
Repetitive actions on objects	Spinning; rolling; rotating; flicking; wiggling; dangling
Repetitive body actions or posturing	Flapping hands; flicking fingers; pacing; spinning body; tensing fingers, hands, or body; facial grimacing
Sensory-seeking behavior with objects	Sniffing/smelling, licking, visual inspection, rubbing/feeling texture, holding objects close to ears

1 | Turn-taking (Play Item)

Administration:

- Place all play materials on the floor, preferably before the child enters the room.
- Sit on the floor and encourage the child to sit down. Position yourself about 3-4 feet from the child.
- Get the child's attention by saying: "Look, child's name, here's the ball!"
- Roll the ball to the child, hold your hands out and say: "Roll it back to me!"
- If the child does not obtain a PASS for the trial, you may give up to 4 more trials with the ball, and up to 5 trials with the car.

Scoring:

Response to Press	
Criteria for PASS	Rolls the ball or car back and forth with you for 3 consecutive, uninterrupted turns
Criteria for EMERGE	Rolls the ball or car back and forth with you 1 or 2 times

Ball			Car (optional)				
Trial	Throws/Rolls Ball Back?		# turns	Trial	Rolls Car Back?		# turns
1	Yes	No		1	Yes	No	
2	Yes	No		2	Yes	No	
3	Yes	No		3	Yes	No	
4	Yes	No		4	Yes	No	
5	Yes	No		5	Yes	No	
Item Score: PASS EMERGE FAIL REFUSE							

Social Engagement	Atypical Behavior
Regards you as a social partner: <ul style="list-style-type: none"> • 1 - MOST OF THE TIME • 2 - SOME OF THE TIME • 3 - VERY LITTLE 	<input type="checkbox"/> Atypical language features <input type="checkbox"/> Repetitive object actions <input type="checkbox"/> Repetitive body actions <input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

2 | Doll play (Play Item)

Administration:

- Place the doll furniture and dishes near the child, in a random arrangement.
- Hand the doll/figure to the child and say: "Look, child's name, look at my doll/toy!"
- If the child takes the doll/figure but does not engage in a functional play act, you may hold up the feeding and/or furniture items and say: "Look at my other toys!"

Do not label the objects or demonstrate any functional play acts.

- If the child does not obtain a PASS for the trial, you may give up to 4 more trials with the doll/figure, and up to 5 trials with the stuffed animal.

Scoring:

Response to Press	
Criteria for PASS	Engages in simple functional play directed to doll/ figure/animal (e.g., puts on chair or bed, feeds with bottle or spoon, hugs or pats)
Criteria for EMERGE	Engages in simple functional play with toys other than doll (e.g., feeds self with bottle or spoon; stirs spoon in cup)

Doll/Figure			Animal (optional)		
Trial	Functional Play?	Action	Trial	Functional Play?	Action
1	Yes No		1	Yes No	
2	Yes No		2	Yes No	
3	Yes No		3	Yes No	
4	Yes No		4	Yes No	
5	Yes No		5	Yes No	
Item Score: PASS EMERGE FAIL REFUSE					

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

3 | Bubbles (Requesting Item)

Administration:

- Hold up the bubble jar and get the child's attention by saying:
"Look, child's name, look what I have!"
- Blow soap bubbles within the child's view (but don't let them pop near the child's face).
Do not point to or label the bubbles.
- Put the wand back in the jar, screw the lid on tightly, hand the jar to the child, and say:
"Now you do it!" or "It's your turn!"
- Indicate whether the child requests (Yes/No) on the scoring grid below.
If No, you may give up to 2 more trials.
If Yes, check the boxes that describe the child's behaviors.
If a check is in a white box, move on to the next item.
If not, you may give up to 2 more trials.

Scoring:

Response to Press	
Criteria for PASS	Requests help opening the jar or requests that you blow more bubbles by combining eye contact and a vocalization.
Criteria for EMERGE	Requests by looking at you <u>along with</u> handing you the jar, or pointing to the jar, or trying to open the jar

	Trial 1		Trial 2		Trial 3	
	Yes	No	Yes	No	Yes	No
Did child request?	If yes, check behaviors:		If yes, check behaviors:		If yes, check behaviors:	
	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact
Verbal request						
Vocalization						
Give object						
Point						
Manipulate hand						
None of the above						
Verbalizations/Vocalizations used:						
Item Score:	PASS	EMERGE	FAIL	REFUSE		

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

4 | Food (Requesting Item)

Administration:

- Hold up the jar containing food treats and get the child's attention by shaking the jar and saying: "Look, child's name, look what I have!"
- Hand the jar to the child and say: "You can have some!"
Make sure the jar lid is closed tightly.
- If the child does not show interest in the jar, you may open the jar, give the child one food treat, and then repeat the trial.
- Indicate whether the child requests (Yes/No) on the scoring grid below.
If No, you may give up to 2 more trials.
If Yes, check the boxes that describe the child's behaviors.
If a check is in a white box, move on to the next item.
If not, you may give up to 2 more trials.

Scoring:

Response to Press	
Criteria for PASS	Requests help opening the jar or requests that you open the jar by combining eye contact and a vocalization.
Criteria for EMERGE	Requests by looking at you <u>along with</u> handing you the jar, or pointing to the jar, or trying to open the jar

	Trial 1		Trial 2		Trial 3	
Did child request?	Yes	No	Yes	No	Yes	No
	If yes, check behaviors:		If yes, check behaviors:		If yes, check behaviors:	
	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact
Verbal request						
Vocalization						
Give object						
Point						
Manipulate hand						
None of the above						
Verbalizations/Vocalizations used:						
Item Score:	PASS	EMERGE	FAIL	REFUSE		

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 – MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 – SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 – VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

5 | Balloon (Directing Attention Item)

Administration:

- Hold up a deflated balloon and get the child's attention by saying:
"Look, child's name, look what I have!"
- Blow up the balloon and hold it over your head.
- Get the child's attention and say: "One, two, three..." then release the balloon so that it flies into the air. **Do not vocalize or make a surprised facial expression.**
- Indicate whether the child directs your attention to the balloon (Yes/No) on the scoring grid below. If No, give up to 2 more trials. If Yes, check the boxes that describe the child's behaviors, and move on to the next item.

Scoring:

Response to Press	
Criteria for PASS	Directs your attention to share interest in the balloon while (or after) it deflates (e.g., looks between you and balloon with a surprised facial expression; points to balloon then looks at you)

	Trial 1		Trial 2		Trial 3	
Did child direct your attention?	Yes	No	Yes	No	Yes	No
	If yes, check behaviors:		If yes, check behaviors:		If yes, check behaviors:	
	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact
Social comment (e.g., Uh-oh, Wow)	?		?		?	
Question (e.g., Where is it?)	?		?		?	
Object label						
Vocalization						
Change in affect						
Point						
Show						
None of the above						
Verbalizations/Vocalizations used:						
Item Score:	PASS	FAIL	REFUSE			

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

6 | *Puppet (Directing Attention Item)*

Administration:

****Give only 1 trial for this item.****

- With your hands hidden from the child's view (i.e., under the table or behind your back), place the puppet on your writing hand.
- Get the child's attention by saying: *"I've got some writing to do!"* as you begin writing with the puppet on your hand. ****Maintain a flat facial expression and avoid looking at the child as you write.****
- If the child does not respond, you may yawn and cover your mouth with the puppet, then scratch your head with it. If the child still does not respond, quietly place the puppet on the table, within reach of the child.
- Indicate whether the child directs your attention to the puppet (Yes/No) on the scoring grid below. If *No*, move on to the next item. If *Yes*, check the boxes that describe the child's behaviors, and move on to the next item.

Scoring:

Response to Press	
Criteria for PASS	Directs your attention to share interest in the puppet (e.g., looks at you and says "woof"; looks back and forth between you and the puppet and laughs; puts puppet on his/her hand and holds up to show you)

Trial 1 (Only 1 trial permitted)		
Did child direct your attention?	Yes	No
	If yes, check behaviors:	
	No Eye Contact	Eye Contact
Social comment (e.g., Uh-oh, Wow)	?	
Question (e.g., What is it?)	?	
Object label		
Vocalization		
Change in affect		
Point		
Show		
None of the above		
Verbalizations/Vocalizations used:		
Item Score: PASS FAIL REFUSE		

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

7 | Bag of toys (Directing Attention Item)

Administration:

- Hold up the bag of toys and get the child's attention by shaking the bag and saying: "Look, child's name, look what I have!"
 - Place the bag in front of the child, hold it open, and say: "Look at my toys!"
 - If the child does not remove any toys from the bag, pull one toy *partially* out of the bag so it is visible. If the child still does not respond, pull one toy *completely* out of the bag and place it in front of the child.
 - Indicate whether the child directs your attention to a toy (Yes/No) on the scoring grid below. If *No*, give up to 2 more trials. If *Yes*, check the boxes that describe the child's behaviors, and move on to the next item.
- **You may need to put some or all of the toys back in the bag to start each new trial.**

Scoring:

Response to Press	
Criteria for PASS	Directs your attention to share interest in a toy (or the bag) (e.g., looks at you and shows you the wand; looks at the snake then you and says "snake; bangs wand on table then looks at you)

	Trial 1		Trial 2		Trial 3	
Did child direct your attention?	Yes	No	Yes	No	Yes	No
	If yes, check behaviors:		If yes, check behaviors:		If yes, check behaviors:	
	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact	No Eye Contact	Eye Contact
Social comment (e.g., Uh-oh, Wow)	?		?		?	
Question (e.g., Where is it?)	?		?		?	
Object label						
Vocalization						
Change in affect						
Point						
Show						
None of the above						
Verbalizations/Vocalizations used:						
Item Score:	PASS	FAIL	REFUSE			

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

8 | Noisemaker (Directing Attention Item)

Administration:

Give only 1 trial for this item.

- Administer this item when the child is engaged with a toy and is not looking at you.
- Hold the noisemaker out of sight and activate it for about 10 seconds. Maintain a flat facial expression and avoid looking directly at the child as the noisemaker sounds.
- If the child does not respond, you may activate the noisemaker again for two or three 5-second bursts (or as long as the child attends to the sound.)
- Indicate whether the child directs your attention to the sound (Yes/No) on the scoring grid below. If No, move on to the next item. If Yes, check the boxes that describe the child's behaviors, and move on to the next item.

Scoring:

Response to Press	
Criteria for PASS	Directs your attention to share interest in the sound (e.g., points in the direction of the sound and looks at you; looks between you and the sound with a surprised expression; looks at you and says "uh-oh" or "what's that?")

Trial 1 (Only 1 trial permitted)			
Did child direct your attention?	Yes	No	If yes, check behaviors:
			No Eye Contact Eye Contact
Social comment (e.g., Uh-oh, Wow)	?		
Question (e.g., What is it?)	?		
Object label			
Vocalization			
Change in affect			
Point			
Show			
None of the above			
Verbalizations/Vocalizations used:			
Item Score:	PASS	FAIL	REFUSE

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 – MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 – SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 – VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

9 | *Shake rattle (Imitation Item)*

Administration:

- Hold up the rattle/maraca and get the child's attention by saying: "Look what I have!"

- Shake the rattle/maraca back and forth for about 10 seconds, saying: “Bop-bop-bop” in rhythm as you shake it.
- Hand the rattle/maraca to the child and say: “You do it!” or “Your turn!”
- If the child does not obtain a PASS for the trial, you may give up to 2 more trials.

Verbal imitation is not necessary for a PASS.

Scoring:

Response to Press	
Criteria for PASS	Shakes the rattle back and forth at least two times
Criteria for EMERGE	Shakes the rattle once; Bangs rattle on table

Trial	Score			
1	Pass	Emerge	Fail	
2	Pass	Emerge	Fail	
3	Pass	Emerge	Fail	
Item Score:	PASS	EMERGE	FAIL	REFUSE

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

10 | Roll car (Imitation Item)

Administration:

- Hold up the car and get the child's attention by saying: "Look what I have!"
- Starting at the child's left, roll car back and forth across the table for about 10 seconds, saying: "Whee-whee-whee" as you roll it.
- Hand the car to the child and say: "You do it!" or "Your turn!"
- If the child does not obtain a PASS for the trial, you may give up to 2 more trials.

Verbal imitation is not necessary for a PASS.

Scoring:

Response to Press	
Criteria for PASS	Rolls the car back <u>and</u> forth across the table at least one time
Criteria for EMERGE	Rolls the car on the table in one direction only (car must stay on the table)

Trial	Score			
1	Pass	Emerge	Fail	
2	Pass	Emerge	Fail	
3	Pass	Emerge	Fail	
Item Score:	PASS	EMERGE	FAIL	REFUSE

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

11 | Drum Hands (Imitation Item)

Administration:

- Get the child's attention by saying: "Look what I'm doing!"
- Drum your hands on the table slowly, alternating your left and right hands. Continue for about 10 seconds, saying: "Boom-boom-boom" in rhythm as each hand hits the table.
- Point to the child and say: "You do it!" or "Your turn!"
- If the child does not obtain a PASS for the trial, you may give up to 2 more trials.

Verbal imitation is not necessary for a PASS.

Scoring:

Response to Press	
Criteria for PASS	Hits hands on table, alternating hands, with each hand hitting the table at least once
Criteria for EMERGE	Hits table with both hands at the same time; hits table with only one hand

Trial	Score			
1	Pass	Emerge	Fail	
2	Pass	Emerge	Fail	
3	Pass	Emerge	Fail	
Item Score:	PASS	EMERGE	FAIL	REFUSE

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

12 | Hop dog (Imitation Item)

Administration:

- Hold up the dog and get the child's attention by saying: "Look what I have!"
- Starting at the child's left, hop the dog across the table for about 10 seconds, saying: "Beep-beep-beep" in rhythm as you hop the dog.
- Hand the dog to the child and say: "You do it!" or "Your turn!"
- If the child does not obtain a PASS for the trial, you may give up to 2 more trials.

Verbal imitation is not necessary for a PASS.

Scoring:

Response to Press	
Criteria for PASS	Hops the dog so that it contacts the table twice, with lateral distance between the two contacts
Criteria for EMERGE	Hops dog repeatedly in place; hops dog only once with lateral movement; slides dog across table

Trial	Score		
1	Pass	Emerge	Fail
2	Pass	Emerge	Fail
3	Pass	Emerge	Fail
Item Score:	PASS	EMERGE	FAIL

Social Engagement	Atypical Behavior
Regards you as a social partner:	<input type="checkbox"/> Atypical language features
• 1 - MOST OF THE TIME	<input type="checkbox"/> Repetitive object actions
• 2 - SOME OF THE TIME	<input type="checkbox"/> Repetitive body actions
• 3 - VERY LITTLE	<input type="checkbox"/> Sensory-seeking behaviors
Item Score: 1 2 3	Item Score: 0 1 2 3 4

Post-Screening Questions

1. Child's spontaneous (non-echoed) language during the screening:
 - Nonverbal (fewer than 5 words)
 - Mostly single words
 - Mostly multiword phrases or sentences
2. Parent reports that child's behavior during the screening was typical: YES NO
3. Were either of the child's parents in the room during the administration of the STAT-NCS?
 - YES NO
4. Please indicate any of the circumstances listed below that may have interfered with the child's performance on the STAT-NCS:

Physical state:

- Hunger
 - Fatigue
 - Illness
 - Other: _____

Behavioral features:

- Shyness
 - Separation distress
 - Difficulty with transitions
 - Difficulty parting with preferred objects
 - Fearfulness of particular objects
(specify: _____)
 - Other: _____

Sensory issues:

- Hearing impairment
 - Visual impairment
 - Other: _____

Motor problems:

- Hypotonia (low muscle tone)
- Poor coordination
- Other: _____

5. Please describe any play, imitation, or communicative behaviors demonstrated by the child in contexts other than the STAT-NCS

Play: _____

Imitation: _____

Requesting: _____

Directing
Attention: _____