

SA. Table 1. Extract of DSM-5 Criteria (APA, 2013), Exemplars, and Associated Features from the Autism and Developmental Disabilities Monitoring (ADDM) Network Clinician Review Manual for Surveillance Year 2016.

A - PERSISTENT DEFICITS IN SOCIAL COMMUNICATION AND SOCIAL INTERACTION		
<ul style="list-style-type: none"> • Across multiple contexts as manifested by ALL of the following currently or by history • <i>Impairments in social interaction should describe UNUSUAL social behaviors, rather than shyness, social anxiety, aggression, “acting out”, oppositional, defiant, or general socially delayed behaviors</i> • The distinctions between A1, A2, and A3 are noted below. <ul style="list-style-type: none"> ○ A1 codes are deficits in social emotional reciprocity that involve the exchange of social behaviors, A2 codes are deficits in nonverbal communicative behaviors, and A3 codes are deficits that involve an awareness of, interest in, and understanding of social relationships and playing with children. ○ It is sometimes difficult to distinguish between lack of interaction (A1) versus lack of awareness or interest (A3). <ul style="list-style-type: none"> ▪ Do not assume lack of interaction means lack of interest; interpret literally line by line and ▪ Remember to distinguish between “does not interact when given social opportunity (A1)” and “social isolation (A3).” <ul style="list-style-type: none"> • Think about A1 as lack of social interaction without retreating from the situation or avoiding other people. • Think about A3 as actively retreating from social situations or actively avoiding other people, and a clear statement that the child is unaware of the presence of others or <i>prefers</i> solitary activities. 		
A1: Deficits in social emotional reciprocity <i>Involves the exchange of social behaviors (responding, initiating, reciprocating to and with others)</i>	A2: Deficits in nonverbal communicative behaviors <i>Used to communicate affect, regulate social interactions, or supplement language</i>	A3: Deficits in developing, maintaining, and understanding relationships <i>Involves an awareness of, interest in, and/or understanding (insight) of other people/relationships and playing with children</i>
<u>Impairments in:</u> <ul style="list-style-type: none"> • Initiating social interactions • Responding to social interactions • Interacting with others (initiating or responding) given social opportunity • Conversing with others • Sharing enjoyment, interests, or objects • Imitating others • Cuddling with familiar persons • Reciprocating social interactions 	<u>Impairments in:</u> <ul style="list-style-type: none"> • Using facial expressions (including smiles) • Using eye contact • Using gestures • Integrating verbal and nonverbal communication • Using other people to communicate • Having appropriate voice characteristics (e.g., intonation) 	<u>Impairments in:</u> <ul style="list-style-type: none"> • Being aware of others • Being interested in others • Preferring to be with others • Differentiating adults and others, and self from others • Adjusting behavior to suit various social contexts • Understanding social conventions • Having an unusual quality of social overtures or responses • Playing with children

A1. Deficits in social emotional reciprocity

IMPORTANT FACTORS

- ✓ A1 codes involve social-emotional reciprocity that involve the exchange of social behaviors.
- ✓ DSM-5 categories for A1 are (1) abnormal social approach, (2) failure of normal back-and-forth conversation, (3) reduced sharing of interests, emotions, or affect, and (4) failure to initiate or respond to social interactions.
- ✓ These DSM-5 categories and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) initiating social interactions, (2) responding to social interactions, (3) interacting with others (initiating or responding) given social opportunity, (4) conversing with others, (5) sharing enjoyment, interests, or objects with others, (6) imitating others, (7) cuddling with familiar persons, and (8) reciprocating social interactions.
- ✓ Note that flat affect alone is coded AF Mood whereas response to another person's affect is coded A1; use of nonverbal behaviors is coded A2 and understanding of others nonverbal behaviors is coded A3.
- ✓ Note that lack of joint attention and lack of pointing to show interest is coded A1 whereas lack of pointing (in general) and all other gestures are coded A2.
- ✓ Note that lack of interaction given social opportunity is coded A1 whereas actively retreating from a social situation or avoiding others is coded A3.
- ✓ Note that engaging in solitary activity given social opportunity is coded A1 whereas preferring solitary activity (in general) is coded A3.
- ✓ Note that initiation or responding problems are coded A1 whereas playing with children is coded A3 (A3 codes are focused on the broader context of play and play behaviors).

EXEMPLARS

Initiating Social Interactions

- Limited social overtures or initiations
- Impairment in initiating joint attention (***chronological age 18 months***)
- Does not initiate social interactions to familiar people (lack of attempt may be indicative of initiation problems; does not offer assistance or encouragement to others when it would be expected)
- Only initiates when help is needed
- Primarily initiates to for purposes of meeting a concrete need (*obtaining an object rather than for social interaction*)
- Gets things for self when it would be "easier" to ask for help; walks away rather than requesting help; does not request assistance in general or indicate need in situation where it would be expected)
- Does not offer comfort to others when the other person is distressed; only offers comfort in response to an exaggerated expression, or in one routine situation (not only statement of "lacks empathy")

Responding to Social Interactions (from adults or others)

- Rarely responds verbally or nonverbally to social approaches of others in a familiar setting
- Does not respond to others or the social environment, when there is clear social opportunity (not responding in a social environment)
- Often appears deaf in response to people's talking or noisemaking that is being directed to the child to get their attention (seems to hear sometimes, but not others; does not orient to others' talking) (without hearing loss)
- Little or no response to people except primary caregivers/very significant others/very familiar children/siblings; social responses are stereotyped, inappropriate or very limited (*emphasis is on lack of responding; if focus is on lack of social interest*)
- Limited responsiveness to socially directed smiles (*flat affect alone is coded AF Mood whereas response to another person's affect is coded A1 and limited and unusual facial expressions (including lack of socially*

directed smiles is coded A2)

- Flat affect in response to another's positive affect (*flat affect alone is coded AF Mood whereas response to another person's affect is coded A1; use of nonverbal behaviors is coded A2 and understanding of others nonverbal behaviors is coded A3*)
- Impairment in responding to joint attention (**chronological age 18 months**; *not inconsistent or attention problems like associated feature; about not understanding another person's pointing or eye gaze to direct child's attention*)
- Failure to follow someone's pointing or eye gaze
- A failure to respond to their parents' voices (without hearing loss)
- Does not or rarely responds to own name (without hearing loss)
- Overly passive when adults or others make social approaches or take their toys / objects away
- Overly passive when peers make social approaches or take their toys / objects away
- Reduced reaction to social praise (not due to opposition or shyness)

Interacting with Others (Initiating or Responding) Given Social Opportunity

- Limited interaction with others, including familiar peers, given social opportunity
- Spends time in solitary activity given social opportunity (*code A3 if phrase indicates that child prefers solitary activity, or retreats from social situations or actively avoids others*)
- Tunes others out (*meaning the child attends only when it is of interest to him or her and tuning out behavior is not due to attention problems*)
- Ignores others (unless there is an indication that it is willful (e.g., ignores teachers or parents when asked to perform an undesired task))

Conversing with Others

Consider chronological age of at least 36 months for most examples (except first example of directing vocalizations to others which should apply at all ages)

- Limited direction of vocalizations or verbalizations to others (*indicating the child is not using vocalizations or verbalizations in a social way; the key concept is directing sounds or words to others, not the amount of vocalizations or verbalizations*)
- Reduced reciprocal social communication (*communication is limited to object-oriented, to get help, response to questions, concerned about preoccupations*); no social chat
- Infrequent talking; selective mutism
- Talking or verbalizing to oneself in the presence of others (*when talking to self would be considered socially unacceptable or odd*)
- Disturbance in the pragmatic (social use) of language
- Impairment in the pragmatics and/or semantics of language
- Limited responding to elicitation to talk or communicate (*can talk, but avoids talking when expected; minimal talking given ability*)
- Does not initiate conversation
- One-sided conversation
- Giving too much or irrelevant detail in talking (talking that is excessive for the social context)
- Monologues (going on and on about a topic even when others are not interested)
- Starts talking in mid-conversation without providing background information / context necessary to be understood (doesn't take into account what the conversational partner needs to know)
- Does not notice need to or is unable to clarify or elaborate if has not been understood in conversation
- Tangential/associative talk (says things that don't make sense)
- Limited asking for information on other's thoughts, feelings, or experiences (when appropriate to do so)
- Unaware of need to clarify or explain actions or statements (not aware that others need more information or an explanation of the person's actions)

- Limited offering of information about his or her own thoughts, feelings, or experiences

Sharing Enjoyment, Interests, or Objects with Others

- Lack of showing, bringing, or pointing out objects of interest to other people
- Rarely or never gives anything to another person
- Does not spontaneously show or share enjoyment, excitement, or achievements with others
- Lack of shared affect (e.g., lack of warm, joyful expressions directed at others; specific examples of not directing smiles or facial expressions coded A2)
- Very few attempts to get, maintain, or direct others' attention
- "An early feature of ASD is impaired joint attention as manifested by a lack of pointing, showing, or bringing objects to share with others" (*the emphasis here is on the behaviors used to show interest interact with others - not the concept of joint attention*)
- Requiring significant support to share (**chronological age 36 months**; not just problems sharing, but limited sharing which implies lack of offering or initiating sharing)
- Does not spontaneously take turns with adults or others (**chronological age 36 months**; not in a conversational context)

Imitating Others

- Impairment in imitation of actions, play, or verbalizations except those that are task-specific (e.g., drawing, block design) and/or involve a motor component difficult for the child.
- Tends not to engage in simple imitation games or routines of infancy or early childhood or does so only out of context or in a mechanical way (for example, peek-a-boo, pat-a-cake)

Cuddling with Familiar Persons

- A failure to initiate or respond to cuddles (stiffens or goes limp in response to being picked up)
- An indifference or aversion to affection or physical contact (*do not score if it is clear that the child has an appropriate wariness of being touched by strangers*) (*Score aversion to touching or being touched by objects under B4 for "tactile defensive"*)

Reciprocating Social Interactions

- Lack of social or emotional reciprocity (*lack of awareness concerning reciprocal interactions scored as A3*)
- One-sided interactions (impairment in reciprocal interaction; for example, child only hugs when he or she initiates)

A2. Deficits in nonverbal communicative behaviors used for social interaction

IMPORTANT FACTORS

- ✓ A2 codes are used to communicate affect, regulate social interactions, or supplement language.
- ✓ DSM-5 categories for A2 are (1) poorly integrated verbal and nonverbal communication (2) abnormalities in eye contact and body language, (3) deficits in understanding and use of gestures, and (4) total lack of facial expressions and nonverbal communication.
- ✓ These DSM-5 categories and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) using facial expressions (including smiles, (2) using eye contact, (3) using gestures, (4) integrating verbal and nonverbal communication, (5) using other people to communicate, and (6) having appropriate voice characteristics (e.g., intonation).
- ✓ Note that flat affect alone is coded AF Mood whereas response to another person's affect is coded A1; use of nonverbal behaviors is coded A2 and understanding of others nonverbal behaviors is coded A3.
- ✓ Note that lack of joint attention and lack of pointing to show interest is coded A1 whereas lack of pointing (in general) and all other gestures are coded A2.

EXEMPLARS

Using Facial Expressions (including smiles)

- Absent, reduced or atypical use of facial expressions
- Impaired use of facial expression or smiling in social interactions (*includes exaggerated or very limited facial expressions; uses one facial expression for all circumstances*)
- Lack of socially directed smiles (**chronological age 2 months**)
- Lack of smiling, in general (*not just brief instance of not smiling, but mention of no smiling*)
- Limited communication of own affect (inability to convey a range of emotions via words, expressions, tone of voice, gestures)
- Lack of directing facial expressions towards other people
- Inappropriate (out of context) expressions of emotions, such as laughing or smiling out of social context (*facial expressions not matching the social situation; code extreme emotional responses, in general, under AF Mood*)

Using Eye Contact

- Absent, reduced or atypical use of eye contact (relative to cultural norms)
- Impaired use of eye-to-eye gaze in social interactions (includes exaggerated or very limited eye gaze)
- Limited/inconsistent/poor/variable/no eye contact (*lack of eye contact or socially inconsistent*) *S (Improved eye contact (in general)= impaired eye contact; do not code impaired eye contact that improves during the course of the evaluation) ("fair eye contact"= ok eye contact, do not code)*
- Lack of directing eye contact towards other people

Using Gestures

Code over 12 months for simple gestures, such as clapping and over 18 months for more complex gestures, such as pointing or waving

- Absent, reduced or atypical use of gestures
- Impaired use of gestures or body postures in social interactions (includes exaggerated use of gestures or body posture)
- Limited use of spontaneous conventional or instrumental gestures (includes only using well-rehearsed gestures or expressions)
- Some functional gestures, but smaller repertoire than others

- Often fails to use expressive gestures spontaneously in communication*
- Does not wave bye
- Does not spontaneously nod or shake head for "yes" and "no"
- Lack of directing gestures or body language towards other people
- Lack of pointing
- Pointing limited to touching objects, getting needs met, or limited pointing (partial point or reach; not a well-formed distal point to express interest)
- Impairment in nonverbal communication NOS

Integrating Verbal and Nonverbal Communication

- Lack of integration of eye contact and other behaviors (vocalizations and/or gestures) during social interactions
- Lack of coordinated nonverbal communication (*inability to coordinate words and gestures*)
- Significant difficulty in verbal & non-verbal communication used together
- Inability to integrate words with gestures
- Poor integration of eye contact, gesture, body posture, prosody, and facial expression for social communication (*impairments may be subtle when only looking at one mode of communication, but are more noticeable when using multiple modes*)
- Difficulty coordinating nonverbal communication with speech (among verbally fluent individuals) gives impression of odd, wooden, or exaggerated body language during interactions

Using Other People to Communicate (emphasis is on unusual aspect of nonverbal communication)

- Involves others in activities as tools or mechanical aids (*without mention of impaired nonverbal behaviors (see A2); purpose of approach is to meet a need by using another person rather than social contact*)
- Uses the parent's hand to obtain desired objects without ever making eye contact or other forms of communication (as if it were the hand rather than the person that is relevant) (*Not only leading by hand*)
- "Leading by the hand" or "pulling by the hand" with statement that child is not using other forms of communication (*nonverbal communication, verbalizations, etc.*)

Having Appropriate Voice Characteristics (e.g., intonation)

- Irregularity in volume (speaks in unusually loud or soft voice, regardless of the context)
- Usually uses an unusual, sing-song voice
- Unusual prosody
- Abnormal regulation of pitch, intonation, rate, rhythm, stress, or volume (*e.g., tone of voice may be monotonous or inappropriate to context or contain question-like rises at the end of sentences*)

A3. Deficits in developing, maintaining, and understanding relationships

IMPORTANT FACTORS

- ✓ A3 codes involve an interest in and understanding of social relationships.
- ✓ DSM-5 categories for A3 are (1) difficulties adjusting behavior to suit various social contexts (2) difficulties in sharing imaginative play or in making friends and (3) absence of interest in peers.
- ✓ These DSM-5 categories and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) being aware of others, (2) being interested in others, (3) preferring to be with others, (4) differentiating adults and others, and self from others (5) adjusting behavior to suit various social contexts, and (6) understanding social conventions, (7) having an unusual quality of social overtures or responses, and (8) playing with children.
- ✓ Note that flat affect alone is coded AF Mood whereas response to another person's affect is coded A1; use of nonverbal behaviors is coded A2 and understanding of others nonverbal behaviors is coded A3.
- ✓ Note that general initiation or responding problems are coded A1 whereas playing or interacting with children is coded A3 (A3 codes are focused on the broader context of play and play behaviors).
- ✓ Note that lack of interaction given social opportunity is coded A1 whereas actively retreating from a social situation or avoiding others is coded A3.
- ✓ Note that engaging in solitary activity given social opportunity is coded A1 whereas preferring solitary activity (in general) is coded A3.
- ✓ Note that rigidity in social interactions is coded A3 whereas rigidity in thought or rigidity NOS is coded B2.

EXEMPLARS

Being Aware of Others

Note that in order to code A3 the phrase must indicate that the child is unaware of or oblivious to the presence of others; lack of interaction or response given social opportunity (e.g., no response to name) without a clear statement that the child is unaware or oblivious is coded A1.

- Unaware/Oblivious to other children (including siblings), or adults or others (should indicate unaware/oblivious to the social world, not lack of engagement in general)
- Markedly impaired awareness of other children's presence (including siblings), or adults or others
- Walks through / looks through children as though they are not there (not only running over / into others), or adults or others
- Does not seem to notice social approach
- In his or her own world (appears unaware of others around)

Being Interested in Others

Note that in order to code A3 the phrase must clearly indicate that the child is not interested in or does not notice others; lack of interaction given social opportunity (without a clear statement that the child is not interested) is coded A1.

- Little or no interest in children (including siblings, adults or others in a familiar setting)
- Little or no interest in the examiner in a 1:1 activity or testing situation
 - *Must explicitly be a 1:1 activity with an adult and the child with expectations that the child will respond to the adult; not relevant for group or classroom activities).*
 - *Do not score here unless it is clear that the child is not seeking or motivated by the examiner's attention (e.g., do not score statements that indicate child refused testing, child initially refused but then cooperated, child deteriorated in testing after a period of responsiveness, note that child was "untestable").*
- Absence of interest in familiar people
- Absence of interest in peers

- Limited or no interest in establishing friendships (*Do not score “does not have friends” unless it is clear that the child is not interested in peers or does not know how to make friends*)
- Unable to establish rapport (*not just rapport difficult to establish*)
- No desire to please (to make or do something for someone else) (*Code “uncooperative” as an AF for “Argumentative, oppositional, defiant, destructive”*)
- Does not notice another’s distress

Preferring to Be With Others

- Strongly prefers solitary activities (*engages in solitary activity is coded A1; preference for solitary activity (in general) is coded A3*)
- Actively avoids other people or retreats from social situations (*do not code the word “avoidant” - should indicate the child actively removes himself from the presence of others given social opportunity; do not score this item if avoidant behaviors are stated as being due to attention seeking, shyness, social anxiety, or reaction to abuse history*)
- Usually object-oriented in the presence of social opportunity
- Apparent preference for solitary activities
- Shows little or no expressed pleasure in interactions with others
- Excessively withdrawn or aloof with adults or others in a familiar setting (*do not code “withdrawn” or “aloof” only; to code as A3, “withdrawn” or “aloof” should be used to indicate a lack of social awareness or interest; do not score this item if the withdrawn or aloof behaviors are stated as being due to attention seeking, shyness, social anxiety, or reaction to abuse history*)

Differentiating Adults and Others, and Self from Others

- Treats adults as interchangeable (no distinction between familiar and unfamiliar adults)
- Lack of “theory of mind” (**chronological age 48 months**)
- Lack of taking another person’s perspective (**chronological age 48 months**)

Adjusting Behavior to Suit Various Social Contexts

- Excessively directive and rule-bound or rigid in social interaction (with adults or peers)
- Later in childhood, insistence in playing (with others) by very fixed rules (*if the emphasis is on very specific, idiosyncratic, or rigid rules, consider B2*)
- Inappropriately intrusive in social interaction (*argumentative, defiant, aggressive behavior should be coded under AF*)
- One-sided interactions
- Difficulties adjusting behavior to suit various social contexts

Understanding Social Conventions

- Unaware of social conventions
- Does not notice another person’s lack of interest in an activity with another person (Does not care about another person’s interests in activities) (*Note: to be scored here, problem is in social UNDERSTANDING, not overfocus on a topic*)
- Limited recognition of social emotions (does not notice when he or she is being teased or should be; does not notice how his or her behavior impacts others emotionally)
- Inability to recognize or interpret other’s nonverbal expressions
- Inability to read social cues
- Does not reference faces
- Unaware of being teased or ridiculed by other children
- Lack of response to contextual cues (due to lack of understanding social conventions) (social cues from others indicating a change in behavior is implicitly requested)

- Older individuals may struggle to understand what behavior is considered appropriate in one situation but not another
- Excessive public masturbation without recognition of others' reaction(s)
- Does not understand personal space boundaries
- Clings mechanically to a specific person; exhibits extreme distress when separated (**chronological age 48 months**)
- Uses socially inappropriate statements or questions (indicating lack of awareness of social conventions, such as asking questions that are too personal or odd)
- Older individuals may not understand the different ways language may be used to communicate (e.g., irony, white lies)
- Inability to understand humor
- Inability to understand nonliteral aspects of speech such as irony or implied meaning ("child takes things literally")
- Desire to establish friendships without a complete or realistic idea of what friendship entails (one-sided or friendships based solely on shared special interests)
- Has an interest in friendship but lacks understanding of the conventions of social interaction
- Does not know how to make friends

Having an Unusual Quality of Social Overtures or Responses

- Unusual quality of social overtures
- Touching or acting on others without regard to other's involvement or reaction (*must indicate lack of social awareness instead of hyperactive or impulsive touching*)
- Sniffing or licking others (*rule out attention seeking*) (*note: it is the unusual social approach that's coded here*)
- Unusual touching of others (stimming on other's body; not sexual in nature)
- Atypical social interest manifested by inappropriate approaches (*Original in DSM-5, but split up: Absent, reduced, or atypical social interest manifested by rejection of others, passivity, or inappropriate approaches that seem aggressive, oppositional or disruptive* should be coded as AFs*)

Playing with Children

These codes focus on the broader context of play and play behaviors rather than social initiation or response.

- Only engages in parallel play given social opportunity (*emphasis is on social interest rather than play skills; code at 36 months if child only or primarily engages in parallel play; code at 48 month if mention of "parallel play" by itself*)
- Lack of imaginative play with peers (**chronological age 36 months**)
- Difficulties in sharing imaginative play* (**chronological age 36 months**)
- In young children, there is a lack of shared social play and imagination (**chronological age 36 months**)
- No social role playing with another person (**chronological age 48 months**)
- Does not seek play that involves participation in groups of other children (*may play chase or catch*)
- Does not actively participate in simple social play or games
- Does not follow social expectation to participate in group play or organized activity with peers (*rule out attention seeking*)
- Preference for playing with much younger or older people
- Only plays with or strongly prefers to play only with children who are much younger or others who are much older (*do not code interacts better with younger or older people unless preference is indicated*)
- Does not show preference for some playmates over others given social opportunity (**chronological age 36 months**)

B. RESTRICTED, REPETITIVE PATTERNS OF BEHAVIOR, INTERESTS, OR ACTIVITIES, CURRENTLY OR BY HISTORY			
B1: Stereotyped or repetitive motor movements, use of objects or speech	B2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior	B3. Highly restricted interests that are abnormal in intensity or focus	B4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment
<ul style="list-style-type: none"> • Demonstrating motor stereotypies • Demonstrating repetitive use of objects • Demonstrating stereotyped or repetitive use of speech 	<ul style="list-style-type: none"> • Insisting on sameness • Showing inflexible adherence to routines or restricted patterns of behavior • Having ritualized patterns of verbal behavior • Having rigid thinking patterns 	<ul style="list-style-type: none"> • Having highly restricted interests or obsessions • Having unusual interests • Focusing on parts of objects 	<ul style="list-style-type: none"> • Showing unusual and general sensory reactions or interests • Showing unusual and specific sensory reactions or interests (i.e., sound, smell, texture or touch, visual, vestibular, pain or temperature, or food-based reactions)

B1. Stereotyped or repetitive motor movements, use of objects, or speech

IMPORTANT FACTORS

- ✓ The DSM-5 category for B1 is (1) stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
- ✓ This DSM-5 category and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) demonstrating motor stereotypes, (2) demonstrating repetitive use of objects, and (3) demonstrating stereotypes or repetitive use of speech.
- ✓ Repetitive language that is focus on topics is coded B3; all other repetitive language is coded B1.

EXEMPLARS

Demonstrating Motor Stereotypies

- Simple motor stereotypies (e.g., hand flapping, finger flipping)
- Stereotyped hand movements (e.g., clapping, finger flicking)
- Hand/finger flapping or twisting
- Stereotyped or complex whole body movements (e.g., foot to foot rocking, dipping, & swaying) AND/OR abnormalities of posture (e.g., toe walking, odd hand movements and body postures); *code "runs, hops, or bounces instead of walking" AF7*
- Spinning self excessively
- Repetitive movements of body (Repetitive movements or posturing of body)
- Rapid, lunging, darting movements
- Body rocking
- Self-stimulation (part of own body except for eyes; do not code masturbation, except code excessive public masturbation under A3)
- Intense body tensing or posturing
- Unusual facial grimacing
- Excessive teeth grinding (bruxism)
- Repetitively puts hands over ears (*focus is on action; code unusual response to sounds under B4*)
- Repetitively mimics the action of a television actor or character (like an "action loop" - stuck in the same action for no apparent reason based on context)
- Perseverative or repetitive action (includes repetitive walking patterns)
- Repetitive picking (unless clear tactile sensory component, then score B4) (includes repetitive skin-picking unless there is a clear tactile component for 3d or tissue impact for self-injurious AF)
- Repetitive behavior unspecified
- Stereotyped behaviors unspecified
- Self-stimulation unspecified

Demonstrating Repetitive Use of Objects

- Repetitive use of objects (e.g., spinning coins, lining up toys)
- Nonfunctional play (unusual or strange play)
- Lining up toys or flipping objects
- Repetitive movements with objects **S** (*includes spinning wheels. if focus on detail of wheels, code B4*)
- Repetitively opens and closes doors (e.g., on toys, cabinets, in buildings)
- Repetitively turns lights on and off
- Repetitively drops objects (*consider whether sensory applies, B4*)
- Perseverative or repetitive play / behavior

Demonstrating Stereotyped or Repetitive Speech

- Language consists primarily of echolalia and/or jargon (*not simply repetition used as a comprehension device*)
- Language consists primarily of repetition of words and phrases regardless of meaning (*exact same words and phrases*)
- Repeats extensive dialogue (long passages from books, movies, tv, etc.) out of context (*asocial or atypical use; not just describing a good memory*)
- Repeats jingles or commercials or songs, stories, or tv / movie scripts
- Repetition of same exact word used over and over again (**not typical of repetition common in children up to 36 months**; *if there is evidence of a compulsive or ritualistic aspect, consider B2; if there is evidence of fixation on a theme or topic, consider B3*)
- Repetition of words and phrases regardless of meaning (exact same words and phrases) (**not typical of repetition common in children up to 36 months**; *if there is evidence of a compulsive or ritualistic aspect, consider B2; if there is evidence of fixation on a theme or topic, consider B3*)
- Echolalia* (*immediate or delayed echolalia; not typical of repetition common in children up to 36 months*)
- Stereotyped or repetitive language (**not typical of repetition common in children up to 36 months**; *repetitive language that is focus on topics is coded B3; all other repetitive language is coded B1*)
- Repetitive speech (**not typical of repetition common in children up to 36 months**; e.g., echolalia, the delayed or immediate parroting of heard words; use of "you" when referring to self; stereotyped use of words, phrases, or prosodic patterns)
- "Jargon" or gibberish (unintelligible, word-like sounds – not just articulation problems or developmentally appropriate babbling) (**code "mature jargon" only after chronological age of 24 months**)
- Use of "rote" language
- Idiosyncratic phrases (*language that has meaning only to those familiar with the individual's communication style*)
- Metaphorical language (*i.e., uses language only understood by those familiar with child*)
- Uses neologisms (peculiar use of nonwords as consistent words) / idiosyncratic language
- Pronoun reversal (pronoun refers to wrong person, for example, "You" for "I"; not just mixing up gender pronouns)
- Does not use "I" (*refers to self by own name only*)
- Pedantic speech or language ("pedantic speech or language" = B1; rigid; use of odd phrases = B1; idiosyncratic language = B1; pedantic tone of voice = A2)
- Language is unusually formal for age (*child who speaks like an adult or "little professor"*)
- Non-word, self-stim vocalizations such as repetitive guttural sounds, intonational noise-making, unusual squealing, repetitive humming (*focus is on odd, repetitive noises out of social context; do not score "noise-making," "screaming," "hums or makes noises during quiet class time"; noises should be clearly self-stimulatory*)
- Perseverative language (*perseveration on topics = B3*)

B2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns of verbal or nonverbal behavior

IMPORTANT FACTORS

- ✓ The DSM-5 categories for B2 are (1) Insistence on sameness, (2) inflexible adherence to routines, (3) ritualized patterns or verbal nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).
- ✓ These DSM-5 categories and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) insisting on sameness, (2) showing inflexible adherence to routines or restricted patterns of behavior, (3) having ritualized patterns of verbal behavior, and (4) having rigid thinking patterns.

EXEMPLARS

Insisting on Sameness

- Resistance to change (e.g., distress at apparently small changes, such as in packaging of a favorite food)
- Unreasonable or persistent insistence on sameness by showing resistance to or distress over trivial / minor changes (*e.g., may have extreme or catastrophic reaction to a minor change in the environment*) (*Does not include generally reacting to someone else's behavior or an environmental change*) (*Does not include changes related to typical attachments of childhood, such as blankets, stuffed animals, etc.*) (*Child is generally reacting to someone else's behavior or an environmental change*)
- Extreme distress at small changes
- Significant reaction or upset when trivial changes are made (*includes excessive or unusual distress over removing a particular object or an activity ending*)
- Consistent (typical) or excessive difficulty with changes or transitions (*not only "does better with routine" or "some transitions are difficult", unless it is clear that the child has a consistent or excessive difficulty with changes; "transitions are difficult or problematic" is taken to be a consistent problem with changes and should be scored without stated precipitating events or trauma, such as a move, 1st few days of being in a new classroom, birth of a sibling, etc.*)
- Atypical" reaction to change
- Difficulties with transitions (**only code if older than 36 months**)
- Distress over removing particular objects or ending activity

Showing Inflexible Adherence to Routines or Restricted Patterns of Behavior

- Child requires, or is insistent on, doing things the same way (*not only "routine-oriented" or "does better with a routine"*)
- Need to take same route or eat same food every day
- Insistence on following routines (*do not score if child is "routine-oriented" or does better with a routine; do not score typical bedtime routine unless the child gets very distressed if the routine is changed*)
- Engages in specific, unusual multiple-step sequences of behavior (ritual-like routines)
- Pacing a perimeter (*child is following a specific route or pattern; doing the same behavior in the same context repeatedly; consider B1 for behavior that is repeated, but no evidence of ritualized component*)
- Hoarding
- Compulsive/compulsions (**NOTE: the phrase "obsessive-compulsive" should be scored under B2 only to prioritize the compulsive behavior**)

Having Ritualized Patterns of Verbal Behavior

- Child insists on following specific verbal rituals or has unusual verbal rituals (specific ways things must be done or said)
- Child uses, or makes others use, specific language or behavior at a certain time or during a certain activity

(based on the context, there is a ritualistic aspect; e.g., every morning, the child has to ask the time before getting out of bed)

- Engages in verbal rituals - tends to say one or more things in a specific way or requires others to say things in a specific way
- Expects other people to answer ritualized questions in specific ways
- Greeting rituals

Having Rigid Thinking Patterns

- Excessively rigid, inflexible, or rule-bound in behavior or thought (not only oppositional, but emphasis on things having to be a certain way or distress is caused)
- Insistence on adherence to rules

Rigidity NOS

B3. Highly restricted, fixated interests that are abnormal in intensity or focus

IMPORTANT FACTORS

- ✓ The DSM-5 category for B3 is (1) highly restricted, fixated interests that are abnormal in intensity or focus (e.g., strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).
- ✓ This DSM-5 category and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) having highly restricted interests or obsessions, (2) having unusual interests, and (3) focusing on parts of objects.
- ✓ Repetitive language that is focus on topics is coded B3; all other repetitive language is coded B1.

Having Highly Restricted Interests or Obsessions

- Markedly restricted range of interests (focused on a few things; only interested in the same, few toys or objects) *restricted interest may be age appropriate (e.g., computer games) but limits interest in other areas*
- Extremely focused on the same few things
- Will not engage with toys, objects, or activities outside his or her interests
- Strong attachment or preoccupation to excessively circumscribed or perseverative interests
- Very intense interests or preoccupations (may not be unusual objects, subjects, or activities, but the intensity of the focus is extreme and interferes with other activities)
- Obsessions (NOTE: the phrase “obsessive-compulsive” should be scored under B2 only)
- Being excessively precise or perfectionist (as if there is an obsession with things being done “right”)
- Perseveration on topics or themes (*perseverative language scored under B2*)
- Perseveration or perseverative (unspecified)

Having Unusual Interests

- Unusual interests or preoccupations
- Narrow focus on unusual things or activities
- Preoccupation with unusual interests, topics, activities not typical for other children at the same developmental level (*e.g., a toddler attached to a pan; a child preoccupied with vacuum cleaners; an adult spending hours writing out timetables*)
- Strong attachment or preoccupation to unusual objects
- Preoccupation with numbers, letters, symbols
- Preoccupation with a narrow AND unusual interest (e.g., amassing meteorology facts, baseball statistics, dates, phone numbers, radio station call letters)
- Interest in seeking out specific, extensive information not shared with others in the context it's presented (e.g., train timetables, historical dates, chemical formulas, or recall of the exact words of songs heard years before) (*no social reinforcement for displaying interest, but it continues*)
- Preoccupation with color (includes attraction/aversion to color)
- Unusual fears (*because of content; for example, afraid of people with glasses*) (*the emphasis is on unusual fears as if it were a preoccupation; code excessive or lack of fear as an Associated Feature*)
- Having to carry around or hold specific or unusual objects (*does not include objects related to typical attachments of childhood, such as blankets, stuffed animals, etc.*)
- Highly attached to inanimate object (e.g., piece of string or rubber band)

Focusing on Parts of Objects

- Persistent or excessive focus on nonrelevant or nonfunctional parts of objects
- Overfocus on parts of objects (buttons)
- Preoccupation with parts of the body (only on dolls or animals)

B4. Hyper- or hyporeactivity to sensory input or unusual interest in sensory aspects of the environment

IMPORTANT FACTORS

- ✓ The DSM-5 category for B4 is (1) hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).
- ✓ This DSM-5 category and the resultant coding criteria have been re-categorized for ADDM coding into the following headings: (1) showing unusual and general sensory reactions or interests and (2) showing unusual and specific sensory reaction or interests.

EXEMPLARS

Showing Unusual and General Sensory Reactions or Interests

- Unusual under- or over- reaction to sensory stimuli
- Persistent, odd responses to sensory stimuli
- Atypical and/or persistent focus on sensory input (without sensory impairment)
- Unusual interest in / preoccupation with sensory input (without sensory impairment)
- Unusual sensory exploration with objects
- Sensory integration disorder; sensory integration problems; sensory processing problems

Showing Unusual and Specific Sensory Reactions or Interests

Sound

- Hyper- or hyporeactivity or unusual interest in sounds
- Overreaction to sounds (*do not include under-reaction to sounds; without Hearing Loss*) (*not only loud or unexpected sounds like sirens; not just reactions to very loud or unexpected sounds*)
- Afraid of or bothered by noises or sounds (not just reactions to very loud, unexpected, or sounds that most people adjust to like a toilet flushing)
- Unusual or excessive avoidance of sounds (not just reactions to very loud, unexpected, or sounds that most people adjust to like a toilet flushing)
- Unusual or excessive seeking out sounds

Smell

- Hyper- or hyporeactivity to smells or unusual interest in smelling
- Under or over reaction to smells
- Unusual or excessive smelling or sniffing

Texture or touch

- Hyper- or hyporeactivity or unusual interest in texture or touch
- Preoccupation with texture (includes attraction/aversion to texture)
- Tactile defensiveness (*does not like to be touched or be touched by certain objects or textures; include significant or persistent reaction to, or avoidance of grooming activities, such as having hair or toenails cut or teeth brushed; score aversion to touch from other people under A1*)
- Excessive or persistent tactile sensitivity (attraction or aversion to touching objects or textures)
- Atypical or odd and persistent tactile defensiveness
- Aversion to touch-NOS (*score aversion to touch from other people under A1*)
- Licking objects or licking-unspecified (*code licking people under A3*)
- Unusual sensory exploration with objects (tactile)
- Seeking deep pressure
- “Definite Difference” on the Sensory Profile in the domain of tactile functioning

Visual

- Hyper- or hyporeactivity to visual stimuli or unusual interest in looking)
- Unusual visual exploration / activity
- Unusual sensory exploration with objects (visual)
- Close visual inspection of objects or self for no clear purpose (*for example, holding things at unusual angles*) (*no vision impairment*)
- Looks at objects, people out of corner of eye
- Extreme interest or fascination with watching movement of other things (*e.g., the spinning wheels of toys, the opening and closing of doors, electric fan or other rapidly revolving object*) (without sensory impairment)
- Unusual squinting of eyes
- “Definite difference” on the sensory profile in the domain of visual functioning

Vestibular

- Excessive or persistent seeking of movement for sensory input (code hyperactive as AF7; code seeking movement as B4 when there is clear indication the child is actively seeking movement for sensory stimulation; “seeks movement” alone can be coded B4)

Proprioceptive

- Does not demonstrate a sense of body position in space
- Does not know where his or her body is in relation to surroundings

Pain or temperature

- Unusually high tolerance for pain
- Lack of reaction to extreme temperatures (hot or cold)

Food-based

- Extreme reactions based on the sensory aspects of food (taste, smell, texture, or appearance)
- Extreme eating restrictions based on the sensory aspects of food (taste, smell, texture, or appearance)
- Unusual rituals based on the sensory aspects of food (taste, smell, texture, or appearance)*

Restricted Behavior NOS – DO NOT CODE

Do not code general statements about restricted or unusual behaviors in the absence of specific exemplars of restricted behavior that could be coded as 3a to 3d.

- Note of “unusual” behaviors
- “Behavioral difficulties”
- Mouthing NOS
 - There has to be more context other than “mouthing;” if it is repetitive and/or systematic then code B1; if it is not repetitive but occurs as part of a routine then code B2; if the examiner specifically states that the child mouths to gain sensory input then code B4.
- “Autistic” or “autism-like” behaviors with no further description
- A score in the ASD range on an Autism Test

Associated Features

Associated features are behaviors that are commonly seen in individuals with ASD but do not represent core features/diagnostic criteria. They are unusual in their presence, intensity, and/or frequency and do not usually occur in typically developing children. Associated features do not influence surveillance case status but may influence child functioning, parent stress, and treatment needs. Associated features are lower threshold coding items, meaning they are coded more liberally than DSM criteria or autism discriminators.

Code	Description	Notes
AF1A	Abnormalities in eating/drinking	-Eating abnormalities includes pica and being a “picky eater” -(Aversions to food textures are coded 3d/B4)
AF1B	Abnormalities in sleeping	-Problems falling asleep at night -Problems staying asleep at night -Includes nightmares and ‘night terrors’
AF2	Abnormalities of mood or affect (emotional states)	-Extreme presence or absence of emotions, emotional states, or mood, such as excessive or lack of distress, frustration, anxiety, depression -Cries often (if out of context crying, code as 1a) -Flat affect -Difficulty calming when distressed -Abrupt shifts in emotional or behavioral states
AF3	Abnormalities in the development of cognitive skills / uneven or scattered skills	-Uneven or scattered skills (not delay in skills) -Receptive language <u>significantly</u> below expressive language -Uneven cognitive or adaptive skills profile -Rules for Adaptive skills: <ul style="list-style-type: none"> • Communication, social, or composite: code discrepancies of at least 15-point difference/1 SD or across different tests administered within one year of each other; • Do not code for discrepancies with daily living or motor -Examiner statement about significant discrepancy or split in skill areas -Unusual savant skills (including hyperlexia) -Presence of a learning disability (including NVLD) or dyslexia
AF4	Aggression	-Physical actions towards other people, such as hitting, biting, kicking, etc. -Physical actions toward animals, such as hitting, biting, kicking, etc.
AF5	Argumentative, oppositional, defiant, destructive	-Includes acting out, talking back, rude or foul language or actions, throwing things, refusals, “uncooperative” behavior, being disruptive, compliance issues, destructive or violent play or use of objects -Fighting without indication that fighting involves physical aggression
AF6	Delayed motor milestones/motor clumsiness	-Either fine or gross motor delays or deficits -Hypotonia -“Visual spatial,” “visual motor,” or “oral motor” problems must be due to motor challenges
AF7	Hyperactivity; short attention span; impulsivity	-Includes being fidgety or “on the go” and general attention problems -Impulsive or does not wait his or her turn -Diagnosis of ADHD

AF8A	Lack of fear in response to real dangers	<ul style="list-style-type: none"> -Unusual fears are coded under 3a/B3 -Lack of awareness of safety issues -Elopement or wandering -Engagement in dangerous behaviors or risk-taking (e.g., climbing)
AF8B	Excessive fearfulness in response to harmless objects/events	<ul style="list-style-type: none"> -Unusual fears are coded under 3a/B3 -Overly or excessively fearful -General anxiety is coded AF2
AF9 (DSM-IV-TR only)	Odd responses to sensory stimuli	<ul style="list-style-type: none"> -Such as sounds, smells, or vestibular movement (including unusual sniffing NOS) -Preoccupation with sensory input -High tolerance for pain or limited reaction to pain -Being afraid of noises or sound (not only reactions to “loud” sounds) -“Definite Difference” on the Sensory Profile in domains other than tactile or visual functioning -Sensory processing problems; sensory integration problems; sensory integration disorder -Seeking deep pressure -Seeking movement (code hyperactive as AF7; code seeking movement as AF9 when there is clear indication the child is actively seeking movement for sensory stimulation; “seeks movement” alone can be coded AF9) -Sensory delays (without clarification that “sensory delays” indicate hearing loss, visual impairment, or another neurological problem) -Sensory issues NOS -Unusual sensory exploration with objects: sound, smell, taste, vestibular -Atypical and/or persistent focus on sensory input: sound; smell; vestibular; visual (other than visual inspection-which is coded under 3d and unusual tactile sensory responses which are coded under 3d (without sensory impairment) or persistent, odd responses to sensory stimuli.) -Problems with proprioceptive and vestibular input -DO NOT CODE auditory processing problems -DO NOT CODE sensory-motor problems
AF10	Self-injurious behavior	<ul style="list-style-type: none"> -Any self-directed behavior that could cause physical harm or a sign or bodily mark of the act, such as picking fingers until bleeding, sucking fingers until chapped, slapping self in the face, head banging, etc. -Code SIBs that occur in a <i>repetitive</i> manner 3b/B1
AF11A	Staring spells	<ul style="list-style-type: none"> -Mention of prolonged staring or blanking out -Staring NOS
AF11B	Seizure-like activity	<ul style="list-style-type: none"> -Mention of seizures or epilepsy
AF12	Temper tantrums	<ul style="list-style-type: none"> -Excessive or problem tantrum behavior

AF13a Language delay/disorder

Diagnosed or stated delay in the use or development of expressive or receptive language (not only articulation); similar to DSM-IV-TR code of “2a” or some “2b.”

Expressive language examples:

- Lack of communicative vocalizations with consonants
- No verbal language/nonverbal
- Lack of babbling by 6 months of age;
 - **Also code DDLang ≤12 months**
- Lack of single words after 15 months or age or never developed single words
 - **Also code DDLang ≤24 months and AF13b**
- Lack of 2-3 word phrases by 24 months or short sentences by 36 months of age or never developed phrases or sentences
 - **Also code DDLang ≤36 months**
- Language consists primarily of noise or verbalizations
 - **After chronological age 15 months**
- Language disorder
- Delayed language or delayed language development; delayed speech
- Immature (as in “delayed” **not temporary “baby talk”**) expressive language, or immature language NOS
- Difficulties with expressive language, or difficulties with language NOS
- Does not compensate for lack of verbal language with nonverbal language
- Speech language educational eligibility when there is a clear statement that services target language skills
- Expressive language / communication delay or disorder
- Problems with expressive language skills
- Nonverbal

Receptive language examples:

These statements must indicate the inability to understand simple questions or directions rather than a lack of following directions as a behavioral issue.

- Immature (as in “delayed”) receptive language
- Difficulties with receptive language
- Receptive language delay or disorder
- Impairment in language comprehension
 - **Excludes impairments in auditory or sequential processing**
- Language processing disorder
- Delayed language comprehension
- Does not understand directions/instructions
- Does not identify body parts
 - Indicative of a lack of understanding rather than **refusal to identify**
- Does not *understand* simple questions (“wh” questions)
 - Must be clear it is lack of understanding and **not a behavioral issue**

AF13b	Nonverbal child	<p>-Child does not have at least one spontaneous complete word or word approximation (not an imitated word), or the only information is “child is nonverbal”); code AF13A as well</p> <p>-Nonverbal status should only be coded after a child is 15 months of age</p> <p>-Any mention of nonverbal status should be coded, even if the evaluator contradicts him/herself in the same report (i.e., code phrase by phrase).</p>
AF14	Play delay	<p>-Delayed or limited play skills (not attention).</p> <p>-Absent or lack of or markedly impaired imaginative/symbolic play</p> <p>-Delayed symbolic or pretend play</p> <p>-Does not use objects as placeholders (using an object as something else)</p> <ul style="list-style-type: none">• <i>Chronological age 24 months</i> <p>-No role playing alone</p> <ul style="list-style-type: none">• <i>Chronological age 36 months</i> <p>-Lack of play skills/no play skill ability</p> <ul style="list-style-type: none">• Not only delays in play skills, but <i>extreme</i> delay/lack of play• Absence of play skills can be taken as having no imaginative play <p>-No functional play</p> <ul style="list-style-type: none">• Code limited range of interests as 3a under DSM-IV-TR and B3 under DSM-5• Code unusual or strange play as 3b under DSM-IV-TR and B1 under DSM-5 <p>-Does not play with toys</p> <ul style="list-style-type: none">• <i>In the absence of any other information about play skills</i> <p>-Wanders from toy to toy without becoming engaged</p> <ul style="list-style-type: none">• <i>Engagement with toys should be the focus, not attention</i>• <i>Code not becoming engaged due to short attention span as AF7</i> <p>-Looking or staring blankly at toys or play objects, rather than manipulating</p> <ul style="list-style-type: none">• <i>Staring at people coded 1d/A3</i>• <i>Active visual inspection of toys or objects coded 3d/ B4</i> <p>-Little/decreased interest in toys or objects, in general</p> <ul style="list-style-type: none">• Emphasis is on general interest without severe or profound ID• If focused on a few, narrow range of objects or activities, code as B3 under DSM-IV-TR and B3 under DSM-5 <p>-Generally, little/decreased interest in toys</p> <ul style="list-style-type: none">• Emphasis is on interest in few or no toys• Without severe or profound intellectual disability• Restricted interest may be age appropriate (e.g., computer games) but limits interest in other areas