**Screening (16 months- 30 months)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Questions | Response options | Score | Critical item? | Follow-up required? | Explanation |
| 1.Does your child enjoy being swung, bounced on your knee, etc.? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | A No here shows limited social engagement, but it’s not a critical autism indicator. |
| 2.Does your child take an interest in other children? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Lack of interest in others is a key early sign of autism, signaling |
| 3.Does your child like climbing on things (e.g., stairs)? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | Encourages motor exploration; not a red flag for autism by itself. |
| 4.Does your child enjoy playing peek-a-boo/hide-and-seek? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | A No here suggests issues with social interaction, critical in autism. |
| 5.Does your child ever pretend (e.g., talking on the phone or feeding dolls)? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Pretend play is crucial for understanding social roles and empathy. A No signals potential autism risk. |
| 6.Does your child ever use index finger to point to ask for something or show interest? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Pointing is a critical social communication skill. Lack of pointing is a strong autism indicator. |
| 7.Does your child respond to their name when you call? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Failure to respond to name signals social disengagement, which is an autism risk. |
| 8.If you point at a toy across the room, does your child look at it? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | This tests joint attention: a critical skill for social interaction. A No here is a major red flag. |
| 9.Does your child bring objects to show you? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | A No shows lack of social sharing, a potential autism risk. |
| 10.Does your child understand simple instructions (without gestures)? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | Checks language comprehension. A No here can signal delayed communication. |
| 11.Does your child use simple gestures (waving, nodding)? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Gestures are a key nonverbal communication skill. No gestures can indicate autism-related delays. |
| 12.Does your child make unusual finger movements near the eyes? | Yes = 1 / No = 0 | Yes = 1 (reverse) | ✔️ | ✔️ | Unusual movements signal sensory processing issues, often linked to autism. |
| 13.Does your child get upset by everyday noises (vacuum, toilet)? | Yes = 1 / No = 0 | Yes = 1 (reverse) | ❌ | ❌ | Sensory sensitivities can be part of autism, but this question isn’t diagnostic by itself. |
| 14.Does your child walk? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | Motor skills—not directly related to autism but necessary for typical development. |
| 15.Does your child look at your face to check your reaction in new situations? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Social referencing is crucial for emotional development. A No here is concerning for autism. |
| 16.Does your child look at things you are looking at? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | Checks joint attention. A No is concerning but not definitive for autism. |
| 17.Does your child try to get your attention on things? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | A No suggests social disengagement but not directly tied to autism diagnosis. |
| 18.Does your child like movement activities (e.g., running, swinging)? | Yes = 0 / No = 1 | No = 1 | ❌ | ❌ | Physical play is important, but not a strong indicator for autism alone. |
| 19.Does your child smile back at you when you smile? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Social smiles are a sign of emotional engagement. A No is a red flag. |
| 20.Would you worry if your child did not respond? | Yes = 1 / No = 0 | Yes = 1 (reverse) | ❌ | ❌ | Parental instinct—not a direct autism measure but important for overall concern. |

**Explanation of the Screening Process:**

1. Critical Items (Marked ✔️):
   * These are the key questions most strongly associated with early signs of autism spectrum disorder (ASD).
   * Follow-up is essential for these items if answered No to confirm if there is a real concern or if there is another reason for the behavior.
2. Non-Critical Items (Marked ❌):
   * These questions help monitor developmental milestones but are not direct indicators of autism. A Yes or No answer here helps with overall child development but doesn't lead to an ASD diagnosis.

**Scoring and Follow-Up Process**

|  |  |  |
| --- | --- | --- |
| Total Failures | Risk Level | Next Steps |
| 0–2 Failures | Low Risk | Monitor child’s development and rescreen in 6–12 months. |
| 3–7 Failures | Medium Risk | Conduct follow-up interview for critical items. If more critical items are answered “No,” refer for a full assessment. |
| 8+ Failures | High Risk | Immediate referral for full diagnostic evaluation with an autism expert. |

**Why Follow-Up Is Needed for Critical Items:**

* Critical items (e.g., pointing, social interest, response to name) are highly predictive of autism. A “No” answer on these should be followed up with questions to determine if the behavior is developmentally delayed, misinterpreted, or indicative of autism spectrum disorder.
* If the follow-up confirms a lack of social or communication skills, it’s a signal that further assessment and diagnosis should be conducted.

|  |  |  |
| --- | --- | --- |
| Critical Item | Follow-Up Questions | What to Look For |
| 2.Interest in other children | "How does your child act when other children are nearby? Do they interact or observe?" | Look for signs of social engagement or social avoidance. If they show no interest or avoid interaction, it could indicate social difficulties. |
| 4.Playing peek-a-boo or hide-and-seek | "Does your child initiate or enjoy playing games like peek-a-boo or hide-and-seek?" | If the child doesn’t engage or shows no interest, it could be a red flag for social communication deficits or autism. |
| 5.Pretend play (talking on the phone or feeding dolls) | "Can you describe an instance when your child used toys in a pretend manner, like pretending to talk on the phone or feeding a doll?" | Lack of pretend play may indicate delayed social-cognitive development. Look for signs of imaginative play or lack thereof. |
| 6.Pointing (using finger to ask for something or show interest) | "Can you recall a moment when your child pointed at something to ask for it or show interest? How did they point?" | Pointing is a key indicator of joint attention and communication. If the child avoids pointing, it’s a concern for autism. |
| 7.Response to name | "When you call your child's name, do they always respond? Do they look at you or react to it?" | Lack of response to their name is a clear sign of social disengagement. Look for consistency in responses, especially in different environments. |
| 8.Joint attention (looking at something you point to) | "When you point to an object or toy across the room, does your child look at it? Does their attention follow yours?" | Joint attention is critical for language development. If they don’t follow your point or gaze, autism is a concern. |
| 9.Bringing objects to show you | "Does your child ever bring you toys or objects to show you, even if they don’t need help with them?" | Sharing interest is essential for social development. A lack of interest in sharing might suggest autism-related social difficulties. |
| 11.Simple gestures (e.g., waving, nodding) | "Has your child used gestures like waving goodbye, nodding yes, or shaking their head no? How frequently do they use them?" | Gestures are key in early communication. Failure to use gestures could point to a communication delay or autism. |
| 15.Looking at your face for reaction (social referencing) | "Does your child check your face for emotional cues when they encounter something new or unfamiliar?" | Social referencing is important for emotional and social development. Failure to engage in this way could indicate social deficits often seen in autism. |

What to Look for During Follow-Up:

1. If the follow-up responses suggest the child is not engaging in the behavior:
   * This could indicate a potential developmental concern. Especially for critical items, if the child consistently fails to exhibit typical behaviors, a diagnostic assessment for autism should be strongly considered.
2. If the child does engage in the behavior but only under specific circumstances:
   * Monitor the situation further. For example, if they point but only under certain conditions, it may still signal delayed communication development.
3. For each follow-up, observe:
   * Consistency of responses: Does the child respond consistently across situations (at home, outside, with familiar vs unfamiliar people)?

Screening Tool (31 months to 5 years)

SECTION 1 – Communication and Social Interaction (10 Questions)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Question | Response Options | Score | Critical Item? | Follow-Up Required? | What to Look For |
| 1.Does your child make eye contact with you during daily activities (e.g., feeding, play)? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Lack of eye contact is a major social communication concern for autism. |
| 2.Does your child smile back when you smile at them? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Failure to smile back signals social engagement issues. |
| 3.Does your child respond to their name when called? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Non-response to name is a classic sign of autism. |
| 4.Does your child try to get your attention by pointing, reaching, or vocalizing? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Pointing is vital for joint attention, a key social skill. |
| 5.Does your child show you objects of interest (like a toy) by pointing or bringing them to you? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Failure to share interest signals social difficulties, often seen in autism. |
| 6.Does your child imitate your actions (e.g., clapping, waving, making faces)? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Imitation is key for social learning. A lack of it indicates developmental delay. |
| 7.Does your child engage in pretend play (e.g., pretending to feed a doll or talk on a phone)? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Pretend play is crucial for cognitive and social development. Lack of it is a red flag. |
| 8.Does your child look where you point (e.g., at a bird in the sky)? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Failure to follow pointing suggests joint attention issues, a sign of autism. |
| 9.Does your child try to comfort others if they see someone upset? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Lack of empathy or comforting behavior is concerning for autistic children. |
| 10.Does your child interact with peers or show interest in other children? | Yes = 0 / No = 1 | No = 1 | ✔️ | ✔️ | Social interaction with peers is a key milestone. Failure to interact suggests social isolation common in autism. |

SECTION 2 – Behavior and Sensory Responses (10 Questions)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Question | Response Options | Score | Critical Item? | Follow-Up Required? | What to Look For |
| 1.Does your child have any repetitive movements (e.g., hand-flapping, rocking)? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Repetitive movements are common signs of autism. |
| 2.Does your child seem overly sensitive to sounds, lights, or textures? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Sensory sensitivities (e.g., to lights or sounds) are often observed in autism. |
| 3.Does your child engage in unusual play with toys (e.g., spinning wheels, lining up)? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Unusual play patterns, such as lining up toys, are typical in autism. |
| 4.Does your child become upset by changes in routine or environment? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Resistance to change is a common trait of autism, showing difficulty with flexibility. |
| 5.Does your child react unusually to pain (either extreme or no reaction)? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Abnormal pain responses, such as hypersensitivity or lack of response, are signs of autism. |
| 6.Does your child exhibit extreme food preferences or limited eating behaviors? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Selective eating or limited food preferences often relate to sensory sensitivities in autism. |
| 7.Does your child repeat phrases (echolalia) instead of answering questions? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Echolalia (repeating phrases) is often linked to delayed communication and autism. |
| 8.Does your child avoid or dislike being touched or held? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Avoidance of touch or discomfort with being held are signs of sensory issues in autism. |
| 9.Does your child engage in self-stimulatory behaviors (e.g., staring at lights, finger flicking)? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Self-stimulatory behaviors, like finger flicking or light gazing, are common in autism. |
| 10.Does your child wander aimlessly without purpose or goal? | Yes = 1 / No = 0 | Yes = 1 | ✔️ | ✔️ | Aimless wandering suggests lack of goal-directed behavior, a sign of autism. |

Follow-Up Questions for Critical Items

If the Parents answers "No" to any critical item, follow-up questions help to evaluate the severity of the issue:

|  |  |  |
| --- | --- | --- |
| Critical Item | Follow-Up Question | What to Look For |
| Repetitive Movements | "Can you describe any repetitive movements your child does regularly, such as hand-flapping, rocking, or repeating the same action?" | Frequent, stereotyped movements are key signs of autism. |
| Sensory Sensitivities | "Does your child react strongly to certain sounds, lights, or fabrics? Can you give examples?" | Extreme sensitivities or avoidance of certain textures or sounds can point to autism. |
| Unusual Play | "How does your child play with toys? Do they line them up, spin them, or play with them in unusual ways?" | Unconventional toy play (e.g., lining up or spinning objects) is a typical behavior in autism. |
| Upset by Change | "How does your child react to changes in routine, like going to a new place or changing the time for meals or bedtime?" | Distress over changes in routine is a red flag for autism, showing difficulties with flexibility. |
| Pain Response | "Does your child react unusually to pain, like not noticing a cut, or crying excessively for small injuries?" | Hypersensitivity or insensitivity to pain is a sensory processing issue linked to autism. |
| Food Preferences | "Does your child have strong food preferences or avoid certain textures or types of food?" | Limited food preferences are often tied to sensory processing difficulties and autism. |
| Echolalia | "Can you give an example of when your child repeated something they heard instead of answering a question?" | Echolalia is a core feature of autism related to language development. |
| Avoidance of Touch | "How does your child respond to being touched? Do they avoid being hugged or held?" | Sensitivity to touch or avoidance is a sensory issue often seen in autism. |
| Self-Stimulatory Behaviors | "Does your child engage in any behavior like flicking their fingers, staring at lights, or other repetitive actions?" | Repetitive behaviors like finger flicking or light gazing are common in autism. |
| Wandering | "Does your child wander without purpose, such as walking around aimlessly without a clear goal?" | Aimless wandering can be a sign of lack of goal-directed behavior, a potential autism indicator. |

Total Score:

* 0-3 Failures (Low Risk): Monitor development and consider rescreening in 6 months.
* 4-7 Failures (Medium Risk): Follow-up interview with the parent/caregiver and consider further assessment for autism.
* 8+ Failures (High Risk): Referral for a full evaluation by a developmental pediatrician or psychologist.

Key Differences in Age Ranges:

1. 16–30 months:
   * At this stage, autism signs are often less clear, and some behaviors (like joint attention or social engagement) may still be developing.
   * Not all of the behaviors listed as questions may be considered red flags yet for every child. Some children might be showing early signs but still fall within typical development.
   * Fewer critical items were marked because not all behaviors at this early stage necessarily need immediate follow-up. The goal here is to monitor and observe over time, looking for patterns of concern.
2. 31 months to 5 years:
   * By this age, language development, social skills, and behavioral patterns are usually much more defined.
   * Children are expected to engage in more complex social interactions (like pretend play and empathy) and develop clearer communication.
   * Any failure to meet these milestones becomes critical, because it could indicate delayed development or signs of autism.
   * Therefore, every question in the 31–5-year range is marked critical because any issue in these areas often requires immediate follow-up for possible referral to a specialist for further evaluation.

Why Are All Items Critical Here?

* The 31–5-year range represents a stage where children should have mastered many key developmental milestones:
  + Social engagement (eye contact, empathy)
  + Language and communication (responding to name, using words, and imitation)
  + Behavioral flexibility (tolerance for changes in routine)
  + Pretend play and joint attention are expected by this age.

Delays or difficulties in these areas are more concerning now because autism is often identified around this stage, and early intervention can have a significant impact on development.

Next step: Diagnosis

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | |  | | --- | | **Diagnostic Tool** | |  |  | | --- | |  | | Purpose | |  | | --- | | Structure |  |  | | --- | |  | | | How AI Can Be Integrated | | --- |  |  | | --- | |  | |
| |  | | --- | | 1. ADOS-2 (Autism Diagnostic Observation Schedule) |  |  | | --- | |  | | |  | | --- | | Direct observation of social and communication behaviors to diagnose autism |  |  | | --- | |  | | |  | | --- | | 5 Modules based on age and language ability (Toddler to Adult). |  |  | | --- | |  | | |  | | --- | | AI can analyze video recordings of a child’s behavior, score based on ADOS-2 criteria, and generate a diagnostic report. |  |  | | --- | |  | |
| |  | | --- | | 2. ADI-R (Autism Diagnostic Interview – Revised) |  |  | | --- | |  | | |  | | --- | | Parent interview to assess developmental history and current behaviors |  |  | | --- | |  | | |  | | --- | | 93 yes/no questions about social interaction, communication, and repetitive behaviors. |  |  | | --- | |  | | |  | | --- | | AI can administer the interview digitally, score responses, and generate an autism risk assessment based on the child’s history. |  |  | | --- | |  | |
| |  | | --- | | 3. CARS (Childhood Autism Rating Scale) |  |  | | --- | |  | | |  | | --- | | Assess severity of autism symptoms using observational ratings |  |  | | --- | |  | | |  | | --- | | 15 items on social interactions, communication, and repetitive behaviors, rated 1-4. |  |  | | --- | |  | | |  | | --- | | AI can observe video footage and rate behaviors against CARS criteria, automatically calculating a severity score. |  |  | | --- | |  | |
| |  | | --- | | 4. Sensory Profile (SP-2) |  |  | | --- | |  | | |  | | --- | | Assess sensory processing issues common in children with autism |  |  | | --- | |  | | |  | | --- | | Subscales measuring sensory sensitivities, sensory seeking, and sensory avoidance. |  |  | | --- | |  | | |  | | --- | | AI can automate sensory questionnaires, score responses, and identify sensory sensitivities that suggest autism. |  |  | | --- | |  | |
| |  | | --- | | 5. WPPSI (Wechsler Preschool and Primary Scale of Intelligence) |  |  | | --- | |  | | |  | | --- | | Assessing cognitive abilities in young children |  |  | | --- | |  | | |  | | --- | | Measures verbal comprehension, working memory, perceptual reasoning, and processing speed. |  |  | | --- | |  | | |  | | --- | | AI could administer cognitive tasks and assess performance against age-related expectations, identifying delays. |  |  | | --- | |  | |
| |  | | --- | | 6. Vineland Adaptive Behavior Scales |  |  | | --- | |  | | |  | | --- | | Assess adaptive behavior (skills for daily life) in children with disabilities |  |  | | --- | |  | | |  | | --- | | Measures communication, daily living skills, socialization, and motor skills. |  |  | | --- | |  | | |  | | --- | | AI can assess adaptive behaviors through tasks and interactions, score them, and recommend interventions. |  |  | | --- | |  | |
| |  | | --- | | 7. SCQ (Social Communication Questionnaire) |  |  | | --- | |  | | |  | | --- | | Assess social communication deficits in children 4 years and older |  |  | | --- | |  | | |  | | --- | | 40 yes/no questions focusing on social interaction, communication, and repetitive behaviors. |  |  | | --- | |  | | |  | | --- | | AI can automate the questionnaire, calculate scores, and generate a risk report for autism. |  |  | | --- | |  | |
| |  | | --- | | 8. CAST (Childhood Autism Spectrum Test) |  |  | | --- | |  | | |  | | --- | | Screen for early signs of autism in children aged 4-11 years |  |  | | --- | |  | | |  | | --- | | 37 yes/no questions on social engagement, communication, and repetitive behaviors. |  |  | | --- | |  | | |  | | --- | | AI can score the responses and produce a risk assessment for autism. |  |  | | --- | |  | |
| |  | | --- | | 9. IQ Tests (WISC, Stanford-Binet) |  |  | | --- | |  | | |  | | --- | | Measure cognitive ability to distinguish autism from other developmental disorders |  |  | | --- | |  | | |  | | --- | | Tests verbal reasoning, working memory, processing speed, and perceptual reasoning. |  |  | | --- | |  | | AI can **administer** cognitive tasks, assess performance, and flag significant **cognitive delays**. |

My own opinion:

While digital tools and AI-based support systems can enhance autism screening, the presence of trained practitioners remains essential in the diagnostic process. Gold standard tools like ADOS-2 and ADI-R require structured interactions and direct observations that involve interpreting subtle behaviors such as tone of voice, facial expressions, body language, and emotional responsiveness — all of which demand professional insight and clinical experience. Diagnosis must also adhere to ethical and regulatory standards defined by international frameworks like the DSM-5-TR or ICD-11, which require licensed professionals for responsible implementation. Practitioners also bring cultural sensitivity to the process, adapting their assessments to the societal norms and expectations of each region. Additionally, interviews with parents or caregivers often include subjective and emotional content that benefits from therapeutic rapport and interpretation by mental health experts. In short, human clinicians ensure the depth, ethics, and contextual accuracy needed for a valid autism diagnosis.