Social communication therapy: what works in autism spectrum disorder?

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Abstract

Autism spectrum disorder (ASD) is a neurodevelopmental condition defined by persistent challenges in social communication and the presence of restricted, repetitive, stereotyped activities, behaviours and interests. With prevalence rising to one in 36 children in some high-income countries, identifying evidence-based interventions that support functional outcomes is a clinical priority for paediatricians. Social communication differences—including challenges with joint attention, social-emotional reciprocity, and the use of gestures—are core features that significantly influence long-term language and cognitive development. There are several evidence-based intervention models, ranging from family-mediated approaches and telehealth delivery to therapist-led structured programmes. This short article highlights some of the effective interventions available to children with autism. Evidence suggests that early, intensive support is most effective, particularly when focusing on the transition from discrete skill acquisition (capacity) to real-world functional use (performance). By understanding the diverse landscape of these programmes, clinicians can better guide families toward individualised support that maximises a child's participation in their community.

Keywords autism spectrum disorder; early intervention; language development; paediatric care; social communication

Introduction

Autism spectrum disorder (ASD) typically manifests in early childhood and is defined by the *DSM-5* as involving persistent impairments in social interaction alongside restricted, repetitive, and stereotyped patterns of behaviours, interests, or activities. The social communication differences are not merely secondary symptoms; they are core features that shape a child's development across multiple domains, including the acquisition of language, social-emotional understanding, early learning and behavioural flexibility.

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Data from the Autism and Developmental Disabilities Monitoring (ADDM) Network, highlights the growing urgency for effective interventions. The ADDM Network is an active surveillance program that provides estimates of the prevalence of ASD among children aged 8 years. In 2020, there were 11 ADDM Network sites across the United States (Arizona, Arkansas, California, Georgia, Maryland, Minnesota, Missouri, New Jersey, Tennessee, Utah, and Wisconsin). The prevalence has risen from one in 150 in 2000 to one in 36 by 2020, affecting children across all racial, ethnic, and socioeconomic groups.

What is social communication?

Social communication refers to the skills that enable individuals to engage meaningfully with others, including joint attention, eye contact, turn-taking, imitation and anticipation of social responses. These skills reflect social motivation and interpersonal understanding and are distinct from the ability to understand language and communication through speaking.

In autistic children, social communication differences may include reduced sharing of interests, difficulties interpreting emotions or intentions, limited use of gestures and facial expressions, or reliance on scripted or repetitive language. Early social communication skills, particularly joint attention, are strongly associated with later expressive language and social outcomes. Evidence indicates that children who demonstrate stronger early joint attention skills, and those who receive targeted early intervention, achieve better long-term communication outcomes.

As there is no curative treatment for autism, the primary aim of intervention is to optimise functional communication, independence and participation in everyday environments.

How do social communication difficulties present?

Children start to exhibit atypical developmental patterns as early as 12 months. The current system for recognition, assessment, support and interventions for autism depend on the knowledge and capacity of Health Visiting, Early Years Education settings and primary care. Children also present to other professionals like speech and language therapists with co-occurring receptive and expressive language delay and to audiology as children are suspected to have hearing impairment as they are not responding to their name.

There are several screening tools that are available aid early recognition. Ages and Stages Questionnaires are routinely used by Health Visiting services to identify children at high likelihood of social communication differences and refer to specialist services for early intervention and further specialist assessment. Early years education settings use Early Years Foundation Stage Developmental Profiles to track all domains of development and identify children with delays and atypical social communication development that is out of keeping with other developmental domains like cognitive development. It is critical that hearing and visual impairment are excluded by appropriate testing in any child with social communication difficulties. Hearing impairment and visual impairment may result in social communication difficulties or can be co-occurring conditions.

Children presenting with severe social communication difficulties and other typical autistic features in second year of life are

also more likely to have co-existing Global Development delay/ Early Developmental Impairment. Children with autism often present with either hyperresponsiveness or hypo-responsiveness to sensory stimuli like loud noises, bright lights, strong smells, temperature and touch. It is essential that the impact of physical and social environment on autistic children is understood and modifications made to improve their functioning and participation at home, in the community and in the educational setting.

The World Health Organization's ICF-CY: International Classification of Functioning, Disability and Health for Children and Youth (WHO ICF-CY) framework is vital in understanding how structure and function of a child's autistic brain interact with the physical and social environment to hinder or optimise the child's ability to socialise, interact, play and learn. The WHO ICF-CY framework provides the toolkit needed to identify the needs of a child with assessment and diagnostic systems like ICD or DSM providing the guidance for identification, strengths and diagnosis.

The current models of waiting for a diagnosis of autism and long waits for diagnosis result in children missing out on early needs-led evidence-based intervention for social communication problems in autism.

Autism surveillance vs autism screening

None of the current tools used for autism screening are fully fit for the purpose regarding positive predictive value, negative predictive value, ease of use, cost and reproducibility. Most of these tools are used as a one off at a fixed point in a child's developmental trajectory and often miss opportunities to recognise autistic children due to timing of the administration at fixed points. The Social Attention and Communication Surveillance – Revised (SACS-R) overcomes this drawback by emphasising social communication surveillance at routine points of interactions between children and Health Visiting teams from 13 months onwards.

The SACS-R is digitised and available as a freely downloadable smartphone App called ASDetect. (www.asdetect.org). This App also educates parents by showing them typical and atypical developmental features like eye contact to assist them to decide if their child has atypical pattern of interaction. Children identified to be at high likelihood of atypical social communication development can be provided with evidence-based manualised intervention to improve social communication without waiting for a diagnosis. This intervention is proven to provide better outcomes and reduce downstream cost for education, health and social care services.

Some commonly used screening tools are listed here:

- Ages and Stages Questionnaire
- Social Attention and Communication Surveillance – Revised
- Schedule of Growing Skills
- Social Communication Questionnaire

Assessment of social communication and autism

Even though needs led evidence-based early intervention can be provided for social communication challenges in children in isolation without waiting for a diagnosis, it is better to follow this up with a thorough specialist MDT assessment with input from a paediatrician, speech and language therapist, occupational therapist and psychologist to understand unique developmental profile, strengths and needs of the whole child to provide coordinated therapeutic input to meet all their needs.

Autism care pathways

The NHS Autism Assessment Pathway is designed to be an ethical, evidence-based, and respectful process. It is underpinned by several key principles, the most crucial being co-designed by clinicians and those who use the services, ensuring the process is transparent and accessible to everyone regardless of their background. The pathway is structured into five distinct stages that guide an individual from the moment possible traits are first noticed through to the support provided after an assessment is complete.

Stage 1: Identification and referral

The process begins when potential autistic traits are identified by the individual, their family, or professionals such as teachers and GPs. A formal referral is sought when these traits appear to have a significant impact on a person's daily life. Because seeking a referral can be a sensitive time, professionals are encouraged to have compassionate conversations, acknowledging that cultural factors or perceived stigma can sometimes cause delays in families seeking help. To make the process easier, routes into the pathway are transparent, and information about local services and waiting times are publicly available.

Stage 2: Screening and triage

Once a referral is received, the service enters the screening and triage stage to determine if a full autism assessment is appropriate. Screening involves a clinical review of the referral information to see if the person meets the service's criteria. Triage goes deeper, using questionnaires, reviews of past records, or meetings with the person and their family to understand their specific needs. The outcome of this stage might be a decision to proceed with an assessment or a referral to a different service if another condition is more likely to be the cause of the person's difficulties.

Stage 3: Pre-assessment support

The third stage of the NHS pathway focuses on pre-assessment support, addressing the gap that often occurs between the initial triage and the formal autism assessment. To ensure transparency and maintain communication, services are expected to provide regular updates on estimated waiting times, ideally at least every three months.

During this interval, the service shares practical resources and evidence-based strategies to help families manage immediate concerns, such as disrupted sleep or anxiety. Families are also signposted to local peer support networks or social prescribing link workers to help coordinate care. Crucially, that a referral for an autism assessment must not prevent a child from receiving help for other health or educational needs while they wait.

Stage 4: Autism assessment

The formal assessment is conducted by a multidisciplinary team (MDT) which typically includes professionals like paediatricians, psychiatrists, speech and language therapists, occupational therapists, nurses and psychologists.

Standard assessment is used when an autism diagnosis is probable and there are no other evident complexities. This involves a clinical interview, behavioural observations, and a review of developmental information to consider any alternative diagnosis.

Enhanced assessment is required for more complex situations where an autism diagnosis is possible, but other factors make the picture less clear. It is also used when gathering information is difficult—for instance, if parents are unavailable for interview or if the person cannot participate in a traditional clinical interview format. In addition to the basics of a standard assessment, the enhanced version uses validated assessment tools like ADOS.

The process is tailored to the individual. Regardless of whether the assessment is standard or enhanced, the final conclusion is always a clinical judgement.

Stage 5: Post-assessment support

The final stage focuses on communicating the results, acknowledging that the outcome can be a validating experience for some or unsettling for others and providing follow-up support.

For those diagnosed as autistic, the support offer typically includes individual or group psychoeducational interventions. It incorporates evidence-based psychosocial interventions for common co-occurring conditions like behaviours that challenges others, sleep problems, sensory sensitivities, anxiety and they facilitate the creation of health passports.

Establishing that a person is not autistic is equally vital for facilitating timely redirection to more appropriate care pathways. Regardless of the diagnostic outcome, all individuals receive comprehensive signposting to social care, education, or social prescribing link workers to coordinate support.

Discharge formally concludes the pathway once clinical findings are shared or initial support is delivered. A standard discharge letter is provided to everyone, summarising the service's input, the final diagnostic conclusion, and any outstanding clinical issues or risks the GP must manage. This ensures all involved professionals are fully informed of the outcome and the required next steps for the individual's long-term wellbeing.

Some commonly used assessment tools include:

- Autism Diagnostic Interview - Revised
- Autism Diagnostic Observation Schedule
- The Bayley Scales of Infant and Toddler Development
- The Griffiths Scales of Child Development

Social communication interventions

The major obstacle to the provision of tailored social communication intervention for all children in enough dose is the capacity of SALT and educational services. The current system focuses on training educational settings and parents to provide the right environment and deliver interventions under the supervision of a qualified therapist. Therapists conduct assessments, identify needs, set goals with parents, model interventions and then discharge children after an episode of care. Children can be referred again once the initial targets are met and goals are achieved.

There is a lack of capacity to provide ongoing support, monitoring of therapeutic programme and individually support children to take the next steps in achieving their social communication milestones.

Intervention delivery models

The delivery of social communication support has evolved to include various mediators, ensuring that interventions are embedded in the child's natural environment.

Therapist-led interventions

While many modern models are mediated by family or peers, direct therapist-led intervention remains a cornerstone of clinical practice. Speech and language therapists (SLTs), educational psychologists, and specialist practitioners provide high-level expertise in assessing a child's unique profile and delivering targeted sessions. Therapist-led models involve individual face-to-face sessions where the clinician works directly with the child in a school or clinic setting to address complex pragmatic needs. Therapists also serve as essential "coaches" in parent-mediated models, using their clinical expertise to guide caregivers through complex feedback processes.

Family-mediated interventions

This approach involves training parents, siblings, or peers to support the child's development. Parent-mediated interventions train caregivers as "intentional mediators" or "therapists" at home, which allows support to begin as early as possible. Peer-mediated interventions use typically developing peers to model social skills, providing the autistic child with naturalistic opportunities for interaction and independence. Similarly, sibling-mediated interventions provide a unique opportunity for reciprocal play and the generalisation of skills across the family's daily routines.

Structured intervention programmes

For pre-school children

Pre-school Autism Communication Therapy (PACT): PACT is a clinic-based programme for children aged 2—7 years that focuses on the parent—child interaction as the primary vehicle for change.

Mechanism: The programme involves fortnightly two-hour sessions over six months, followed by monthly sessions. A defining feature is video feedback. The therapist records the parent and child playing for 10 minutes and then reviews the footage with the parent to identify successful interaction moments.

Goals: Goals are set based on a hierarchy of social and communication skills, focusing on increasing the child's communication initiations and language. Parents commit to 30 minutes of daily practice at home.

Evidence: A major UK trial demonstrated that PACT significantly improved parental sensitive responsiveness and child communication initiation, though it did not significantly change overall autism symptoms. It has a moderate evidence level.

JASPER (Joint Attention, Symbolic Play, Engagement & Regulation): JASPER is a naturalistic, play-based intervention specifically designed for preschool-aged children (under age 6) with autism.

Mechanism: This intervention is delivered either individually or through parent-mediation, where a therapist or trained parent works with the child in a natural play setting. It utilizes specific

techniques such as prompting, reinforcement, and modelling to encourage interaction during play.

Goals: It focuses on the foundational "building blocks" of social communication: Joint Attention (sharing focus with others), Symbolic Play, Engagement, and Regulation.

Evidence: JASPER is classified as an established evidence-based practice. It has demonstrated moderate strength of evidence for positive effects on joint attention skills in preschool-age children, which is a critical precursor to later language development.

Pivotal Response Treatment (PRT): PRT is an established intervention for preschool children with autism that focuses on "pivotal" areas of a child's development.

Mechanism: PRT is a naturalistic approach that can be delivered individually by professionals, mediated by parents, or implemented in classroom settings. It emphasizes child choice and uses natural reinforcers (such as the child receiving the toy they communicated about) rather than arbitrary rewards.

Goals: Instead of teaching individual social skills one by one, PRT targets "pivotal" behaviours—such as motivation and self-management—that are believed to lead to widespread improvements in other social and communication areas.

Evidence: PRT shows high effectiveness in single-case studies, with over 90% of data points showing improvement. It is also being adapted for use with technology; one study found a higher percentage of "clinical responders" when PRT was combined with a social robot for role-play and conversation practice.

Early Start Denver Model (ESDM): ESDM is a comprehensive, well-established intervention for preschool children with autism.

Mechanism: This model combines the structured teaching methods of *Applied Behaviour Analysis (ABA)* with *Developmental Social Pragmatic (DSP)* approaches. It can be delivered one-on-one by professionals or implemented by parents who have received adequate training.

Goals: It targets a broad range of developmental skills, with a heavy emphasis on social reciprocity and communication within a relationship-based framework.

Evidence: ESDM is classified as a "well-established" intervention. Research indicates that the maximum treatment benefits for such early interventions occur around age 3.81 years, highlighting the importance of starting these programmes as early as possible.

For school-aged children

The Social Use of Language Programme (SULP): Developed by Wendy Rinaldi, SULP uses a multi-sensory approach to build *metacognition*—a child's knowledge of why and how social interaction works.

Structure: The programme is divided into three parts:

- **Part 1:** Basic communication skills and self/other awareness.
- **Part 2:** Applying non-verbal and verbal skills to potentially difficult situations.
- **Part 3:** Supporting students in real-life, functional interactions.

Application: Originally developed for teenagers with learning difficulties, it is now used for younger children and those on the autistic spectrum. It is delivered by SLTs, SENCOs, or educational psychologists.

Evidence: It has an indicative evidence level; while formal research is limited, it has strong face validity and is widely used in practice.

The Social Communication Intervention Project (SCIP): This is a manualised intervention designed specifically for school-age children (ranging from approximately 6 to 11 years old) who struggle with pragmatic and social communication, including those with or without an autism spectrum disorder diagnosis.

Mechanism: The programme is delivered through individual face-to-face sessions, typically consisting of up to 20 sessions. It is implemented by specialist speech and language therapists, who may work alongside supervised assistants. To be effective, the intervention requires high fidelity, meaning the therapists must strictly follow the manualised procedures.

Goals: SCIP focuses on the remediation of three core areas: semantics (word meanings), pragmatics (social use of language), and social interaction. The ultimate goal is to improve the child's conversational competence and their ability to function effectively in a classroom setting.

Evidence: Based on a single-blind randomized controlled trial (RCT), SCIP has shown significant positive effects on blind-rated conversational competence and teacher-reported classroom learning skills. While parents also report significant improvements in social communication and pragmatic functioning, these changes are rarely detected by standardized structural language assessments (such as the CELF-4). Research indicates that approximately half of the children receiving the intervention show a measurable improvement in the quality of their conversations.

Talk Boost Key Stage 2: This is a targeted intervention for 7—10-year-olds with "low-average oral language".

Mechanism: Children act as "communication detectives" in small group sessions (30 minutes, three times a week) over eight weeks.

Focus Areas: It addresses five key skills: vocabulary, active listening, narrative skills, working memory, and talking in groups.

Evidence: Results show significant improvement in teacher ratings of children's language, though more research is needed on its long-term impact on reading comprehension.

Comparison of intervention delivery formats

Format	Description	Benefits	Considerations
In situ	Delivered in person, often in the child's home or school.	Real-time coaching; high ecological validity; direct hands-on support.	Logistical barriers; travel time; limited availability in rural areas.
Telehealth	Delivered via videoconferencing, apps, or online manuals.	Comparable outcomes to in-person; increased flexibility; reaches remote areas.	Requires reliable technology; fewer opportunities for direct physical coaching.
Multimedia	Interactive software, apps, and computer-based tools.	High motivation; aligns with visual processing strengths; supports autonomy.	Uncertain generalisation to expressive communication; requires human-led follow-up.

Table 1

Pragmatic Language Intervention: This play-based model targets children aged 6–11 years.

Mechanism: It involves 10 weekly clinic sessions and 10 weekly home play-dates where the child is paired with a typically developing peer. It uses video feedback and therapist-parent discussion.

Evidence: It demonstrates improvements in non-verbal communication and overall pragmatic performance.

Capacity and performance

A critical concept in modern intervention is the distinction made by the World Health Organization's International Classification for Functioning, Disability and Health (ICF). Interventions must address both "capacity" (the discrete pragmatic knowledge a child possesses) and "performance" (how they actually use those skills in functional, real-world social contexts). Many clinic-based interventions improve capacity, but the ultimate goal is improving performance during ecologically valid interactions, such as play-dates with peers.

The importance of dosage and timing

Research consistently highlights that children aged 2.5–5 years typically make more progress in treatment programmes than older children, even when participating in lower-intensity interventions. Furthermore, "dosage"—the number of hours of intervention per week—is a significant predictor of mastery. Training parents and school staff is particularly effective because they can implement strategies at a higher dose throughout the child's daily life than a therapist can in isolated sessions.

Digital solutions

Interventions can be delivered in person (in situ) or via telehealth. In situ delivery allows for real-time modelling and feedback within the child's natural environment, supporting the generalisation of skills. However, for families facing geographical or logistical barriers, telehealth has emerged as a comparable alternative. Using videoconferencing and digital manuals, clinicians can train parents remotely, achieving similar outcomes to in-person services while offering increased flexibility.

Multimedia technologies align well with the strong visual processing abilities often seen in autistic children. These tools are effective for teaching receptive language and symbol discrimination. However, while they promote autonomy, more nuanced skills like navigating reciprocal social interactions typically require human presence, and it remains unclear if digital skills reliably generalise to real-world expressive communication.

Therapists spend a lot of time in travel, preparing supporting resources, documenting care, coding, recording outcome measures, arranging clinic appointments, managing referrals and recording activity. Digital and AI solutions can assist in reducing the non-clinical admin burden on therapists and releasing time for hands-on clinical work.

Generative AI and Large Language Models can act as "AI Therapy Assistants" to support children, parents and education staff in practising the skills identified by the therapist and tracking their progress.

A comparison of intervention delivery formats is presented in Table 1.

Conclusion

The landscape of social communication interventions for ASD is diverse, offering various pathways to support developmental growth. Evidence consistently highlights that the most effective interventions are often those initiated early, with younger children typically making more progress than their older peers. The shift toward family-mediated and peer-mediated models reflects a growing recognition of the importance of "performance" over "capacity".

While innovative technologies provide valuable tools, they should ideally complement, rather than replace, human-led interaction. Paediatricians play a vital role in navigating these options, ensuring that interventions are not only evidence-based but also tailored to the specific strengths and challenges of the individual child. ◆

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Practice points

- Prioritise early intervention: Children aged 2.5–5 years often show the most significant gains in social communication programmes
- Consider dosage: Higher-intensity treatment (more hours per week) is linked to better mastery of developmental milestones
- Embed in daily life: Use parent-mediated and school-based models to increase the "dose" of intervention beyond clinic hours
- Focus on performance: Target how skills are used in functional social contexts, not just discrete skill acquisition in the clinic
- Leverage visual strengths: Incorporate multimedia tools to support receptive language and vocabulary, provided they are paired with social practice