

Clinical Review: Max Verstappen

Assessment, Formulation and Intervention
Processes

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School of Psychology

Master in Clinical Psychology

Child Clinical Psychology

Kingswood, New South Wales, October 2025

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Contents

I FORMULATION

1 FORMULATION	2
1.1 Referral Context and Preliminary Diagnostic Framework	2
1.2 Autism Spectrum Disorder: Provisional Diagnostic Analysis	2
1.2.1 Social Communication and Interaction Dynamics	2
1.2.2 Restricted and Repetitive Behaviour Dynamics	3
1.3 Intellectual Developmental Disorder: Differential Diagnostic Considerations . .	3
1.3.1 Cognitive Functioning Assessment Requirements	3
1.3.2 Adaptive Functioning Evaluation Needs	4
1.4 Predisposing Factors and Developmental Risk	4
1.4.1 Biological and Genetic Considerations	4
1.4.2 Environmental, Epigenetic and Psychosocial Factors	5
1.4.3 Cultural Context and Systemic Considerations	5
1.5 Protective Factors and Developmental Resources	5

II ASSESSMENT

2 ASSESSMENT	8
2.1 Multidisciplinary Assessment Rationale	8
2.2 Developmental History and Clinical Interview	8
2.2.1 Structured Interview Framework	8
2.2.2 Cultural Responsiveness in Assessment	9
2.3 Autism-Specific Diagnostic Assessment	9
2.3.1 Structured Observational Assessment	9
2.3.2 Cultural Validity Considerations	10
2.4 Cognitive and Intellectual Assessment	10

2.4.1	Comprehensive Cognitive Evaluation	10
2.4.2	Cognitive Profile Analysis	10
2.5	Adaptive Behaviour Assessment	11
2.6	Sensory Processing Evaluation	11
2.7	Assessment Timeline and Integration	12
 III INTERVENTION		
3	INTERVENTION	14
3.1	Contemporary Intervention Landscape	14
3.2	Focused Intervention Approaches	14
3.3	Naturalistic Developmental Behavioral Intervention	15
3.3.1	Theoretical Framework and Core Principles	15
3.3.2	Rationale for Max’s Profile	15
3.3.3	Implementation Framework	16
3.3.4	Parent Partnership and Cultural Integration	16
3.4	Dosage, Monitoring, and Expected Outcomes	17
3.4.1	Intervention Intensity	17
3.4.2	Progress Monitoring	17
3.4.3	Outcome Expectations	17
3.5	Comprehensive Support Framework	18
3.6	Synthesis and Forward Planning	18
<i>Bibliography</i>		20

PART I

FORMULATION

FORMULATION

1.1 Referral Context and Preliminary Diagnostic Framework

The referral information for Max, a 5-year-old child of Aboriginal Australian and Irish heritage, presents developmental concerns warranting systematic evaluation for neurodevelopmental conditions. Based on Dr. Smith's referral, two primary diagnostic considerations emerge: Autism Spectrum Disorder (ASD; F84.0) as a provisional diagnosis, and Intellectual Developmental Disorder (IDD; F70.0-F79.0) as a differential diagnosis requiring further clarification.

These diagnostic considerations reflect provisional formulations based on available referral information rather than definitive conclusions. The assessment process described in subsequent sections will enable systematic evaluation of these hypotheses through comprehensive data collection, structured observation, and standardized measurement instruments. This approach acknowledges that diagnostic clarity emerges progressively through systematic inquiry rather than through initial impression alone.

1.2 Autism Spectrum Disorder: Provisional Diagnostic Analysis

1.2.1 Social Communication and Interaction Dynamics

Max's presentation suggests he may meet criteria for ASD under Criterion A (persistent deficits in social communication and social interaction across multiple contexts), though comprehensive assessment remains necessary for diagnostic confirmation. Several concerning features appear documented in the referral information, each requiring systematic evaluation through standardized assessment procedures.

Regarding deficits in social-emotional reciprocity, Max demonstrates lack of shared enjoyment, failure to seek comfort when hurt, and apparent preference for solitary engagement ([American Psychiatric Association, 2022](#)). These patterns warrant careful evaluation, as research by [Elsabbagh & M. H. Johnson \(2010\)](#) suggests that joint attention and social reciprocity difficulties emerge as early indicators distinguishing autism from other developmental conditions, though interpretation requires consideration of developmental context and individual variability.

Max's nonverbal communicative behaviours appear atypical based on reported inconsistent eye contact and joint attention difficulties. These skills typically emerge by 12 months in neurotypical development, though considerable individual variation occurs even within typical developmental trajectories ([Elsabbagh & M. H. Johnson, 2010](#)). His reliance on leading his mother to

desired objects rather than conventional pointing or gestures suggests delays in protodeclarative communication, which Mundy et al. (2009) identify as a core early marker in autism, though such patterns may also reflect other developmental or environmental factors requiring systematic investigation.

1.2.2 Restricted and Repetitive Behaviour Dynamics

Regarding Criterion B (restricted, repetitive patterns of behaviour, interests, or activities), Max exhibits several characteristic features requiring systematic evaluation. His stereotyped motor behaviours, evident in repetitive lining up of vehicles and fascination with spinning wheels, appear consistent with patterns that Leekam et al. (2011) suggest occur in approximately 70% of young children later diagnosed with ASD. However, this statistic also indicates that such behaviours may not occur in a substantial minority of children with autism, and may occasionally appear in typically developing children or those with other developmental conditions.

Max's insistence on sameness manifests through rigid morning routines and significant distress when routines are disrupted, patterns consistent with research by Rodgers et al. (2012) indicating that rigidity often intensifies during preschool years in children with autism. Nevertheless, routine-seeking behaviour exists on a continuum, and some degree of preference for predictability appears in typical development, particularly during periods of stress or transition. The clinical significance of Max's routine adherence requires evaluation of its intensity, persistence, and functional impact on daily activities and family life.

His hyper-reactivity to sensory input, particularly regarding auditory stimuli, aligns with findings by Tomchek & Dunn (2007) that 69-95% of children with ASD demonstrate atypical sensory processing across multiple modalities. The wide prevalence range reported in research reflects methodological variations and the heterogeneity of sensory profiles in autism, suggesting that while sensory differences appear common, they manifest in diverse ways requiring individualized assessment and interpretation.

1.3 Intellectual Developmental Disorder: Differential Diagnostic Considerations

1.3.1 Cognitive Functioning Assessment Requirements

The differential diagnosis of IDD warrants systematic evaluation given Max's developmental history. His GMDS-ER assessment at 29.9 months yielded a General Quotient of 69, suggesting mild global developmental delay by DSM-5-TR criteria (American Psychiatric Association, 2022). However, this assessment occurred over two years ago, and research by Munson et al. (2008) indicates that cognitive profiles in young children with ASD can demonstrate instability, with some children showing improved scores following intervention while others show stable or declining trajectories.

Contemporary evaluation using age-appropriate measures becomes essential for several reasons. First, the substantial time interval since previous assessment may not reflect Max's current functioning, particularly if he has received intervention services. Second, language-based

measures may underestimate nonverbal reasoning capabilities in children with limited verbal output (Charman et al., 2011), suggesting that Max's verbal delays might artifactually depress global cognitive scores if nonverbal abilities exceed verbal capabilities. Third, profile analysis examining scatter across different cognitive domains provides more clinically useful information than global IQ scores alone (Flanagan & McGrew, 1997), enabling identification of relative strengths that might inform intervention planning.

1.3.2 Adaptive Functioning Evaluation Needs

Regarding Criterion B (deficits in adaptive functioning limiting functioning in one or more activities of daily life), Max demonstrates difficulties across conceptual, social, and practical domains requiring systematic quantification. His limited vocabulary and use of word combinations rather than sentences at age 5 suggests delays in the conceptual domain, though the relationship between receptive and expressive language abilities requires clarification. His peer interaction difficulties suggest impairments in the social domain, while his lack of toilet training indicates challenges in the practical domain (Tassé et al., 2012).

Systematic adaptive behaviour assessment using standardized instruments such as the Vineland Adaptive Behaviour Scales, Third Edition (Sparrow et al., 2016) would provide essential quantitative data regarding functioning relative to same-age peers. Such assessment enables examination of whether adaptive deficits distribute evenly across domains, suggesting global developmental delay consistent with IDD, or whether social communication deficits appear disproportionate to other adaptive areas, suggesting autism-specific social communication difficulties (Klin et al., 2007).

1.4 Predisposing Factors and Developmental Risk

1.4.1 Biological and Genetic Considerations

Max's prematurity (born at 35 weeks, 3 days) and low birth weight (2645 grams) may have contributed to neurological vulnerability, though the relationship between late preterm birth and neurodevelopmental outcomes appears complex and probabilistic rather than deterministic. Research by S. Johnson & Marlow (2011) indicates that late preterm infants demonstrate elevated rates of neurodevelopmental difficulties, particularly when combined with other risk factors, though many late preterm infants develop typically without significant difficulties.

The family history of ASD (maternal nephew) suggests genetic vulnerability, though heritability estimates vary considerably depending on methodological approaches. Tick et al. (2016) report heritability estimates ranging from 37% to over 90%, with more recent large-scale studies by Bai et al. (2019) suggesting that both genetic and environmental factors contribute substantially to autism risk. This variability in heritability estimates reflects differences in study design, population characteristics, and statistical modeling approaches rather than contradictory findings, suggesting that autism arises through complex interactions between genetic susceptibility and environmental influences.

1.4.2 Environmental, Epigenetic and Psychosocial Factors

Stephanie's postnatal depression following Max's birth potentially affected early attachment formation during critical developmental windows, though the relationship between maternal depression and child developmental outcomes appears mediated by multiple factors including depression severity, duration, treatment access, and family support. Research by [Feldman et al. \(2009\)](#) suggests that maternal depression can influence parent-infant interaction quality, though effects vary considerably and many children of depressed mothers develop typically, particularly when mothers receive effective treatment and supportive relationships buffer potential adverse effects.

1.4.3 Cultural Context and Systemic Considerations

Max's Aboriginal heritage requires respectful acknowledgment and integration into assessment and treatment planning, recognizing both the rich cultural resources that Aboriginal identity provides and the systemic barriers that Aboriginal families face in accessing developmental services. Aboriginal Australian children experience disparities in accessing developmental services, with research by [Bourke et al. \(2016\)](#) reporting that intellectual developmental disorder prevalence among Aboriginal children in Western Australia was 39 per 1,000 compared to 16 per 1,000 for non-Aboriginal children.

These differences likely reflect systemic barriers and social determinants of health rather than genetic factors, including reduced access to prenatal and pediatric care, socioeconomic disadvantage, historical trauma, and cultural barriers in mainstream service systems ([American Psychiatric Association, 2022](#)). Assessment and intervention planning must address these structural factors while respecting cultural knowledge systems and engaging Aboriginal community resources that might support Max's development.

1.5 Protective Factors and Developmental Resources

Max demonstrates several strengths suggesting resources for development that assessment and intervention planning should identify and build upon. His acquisition of some pretend play skills through speech pathology intervention indicates capacity for symbolic representation and responsiveness to targeted teaching, suggesting that structured early intervention might support continued skill development across domains.

His good sleep pattern (8pm-7am) represents a significant strength, as sleep difficulties frequently complicate neurodevelopmental presentations ([Maski et al., 2011](#)) and can exacerbate behavioral and learning challenges. Both parents' completion of TAFE diplomas indicates educational engagement and potentially enhanced capacity to understand and implement intervention recommendations, though assessment should avoid assumptions about knowledge or capability based solely on educational credentials.

Charles's active involvement in his Aboriginal community suggests access to cultural support networks that might provide both practical assistance and cultural grounding for the family.

Understanding how the family conceptualizes Max's development within Aboriginal cultural frameworks, what community resources they access or might access, and how traditional knowledge systems might inform understanding of his needs becomes essential for culturally responsive assessment and intervention planning.

PART II

ASSESSMENT

ASSESSMENT

2.1 Multidisciplinary Assessment Rationale

Comprehensive evaluation for possible ASD and IDD requires systematic integration of multiple information sources and professional perspectives, an approach reflecting both methodological necessity and ethical responsibility. The gold standard assessment for ASD involves a multidisciplinary team approach, ideally including a paediatrician, psychologist, and speech-language pathologist (Ozonoff et al., 2005), though resource constraints and geographical factors may necessitate modified approaches while maintaining assessment quality.

This collaborative model serves several functions. First, different professionals contribute specialized expertise enabling comprehensive evaluation across developmental domains that no single discipline can address adequately. Second, cross-validation of findings reduces risk of diagnostic error by enabling multiple perspectives on the same behavioural observations. Third, integrated assessment facilitates coordinated treatment planning by ensuring that all team members understand Max's profile comprehensively (Charman & Gotham, 2013).

For Max, multidisciplinary collaboration proves particularly valuable given the complexity of differentiating ASD from IDD. Research by Mefford et al. (2012) indicates that approximately 45% of individuals with autism also have intellectual developmental disorder, necessitating careful evaluation to determine whether social communication difficulties exceed what would be expected based on nonverbal cognitive abilities alone. This differential diagnosis requires integration of cognitive assessment, adaptive behaviour evaluation, and autism-specific assessment in ways that single-discipline evaluation cannot achieve adequately.

2.2 Developmental History and Clinical Interview

2.2.1 Structured Interview Framework

A comprehensive developmental interview following established frameworks such as the Autism Diagnostic Interview-Revised (ADI-R; Lord et al., 1994) provides systematic coverage of areas essential for ASD diagnosis while gathering broader developmental information relevant to IDD consideration. The ADI-R is a 93-item interview taking 1.5-3 hours, requiring intensive training for reliable administration and scoring.

The interview should explore developmental milestones across multiple domains including motor development, language acquisition, social development, play skills, and adaptive functioning.

Understanding the trajectory of development—whether skills were acquired and subsequently lost (regression), never fully acquired (developmental delay), or developed atypically from the outset—provides essential information for differential diagnosis. The timing, sequence, and pattern of skill acquisition offer insights that cross-sectional assessment cannot capture.

2.2.2 Cultural Responsiveness in Assessment

Given Max's Aboriginal heritage, the interview should explicitly address cultural considerations while avoiding assumptions about the family's cultural identification, practices, or preferences. The interview might explore the family's connection to Aboriginal community and culture, cultural practices relevant to child-rearing and development, preferences for involvement of Aboriginal Health Workers or other cultural supports, and how the family conceptualizes Max's development within cultural frameworks (Daniels & Mandell, 2014).

This exploration should be conducted with cultural humility, recognizing that families' cultural identification exists on a continuum and that individuals may identify strongly, moderately, or minimally with Aboriginal cultural heritage depending on personal history, community connection, and other factors. The goal is understanding how culture informs the family's understanding of Max's development and what cultural resources might support assessment and intervention, not imposing expectations about cultural practice or identity.

2.3 Autism-Specific Diagnostic Assessment

2.3.1 Structured Observational Assessment

The Autism Diagnostic Observation Schedule, Second Edition (ADOS-2; Lord et al., 2012) represents the gold standard observational assessment for ASD, providing standardized contexts for eliciting social communication behaviours through developmentally appropriate activities. For Max, Module 2 would likely be most appropriate, designed for children with phrase speech who are not yet verbally fluent.

The ADOS-2 includes activities designed to create opportunities for social communication, including free play, response to joint attention, demonstration task, description of a picture, storytelling, and conversation. The semi-structured format allows flexibility in following the child's interests while ensuring that specific social communication behaviors receive systematic evaluation. Trained examiners code behaviors across social affect and restricted/repetitive behavior domains, generating algorithm scores that inform diagnostic decision-making.

However, the ADOS-2 is not independently diagnostic (Charman & Gotham, 2013), a limitation sometimes misunderstood by professionals seeking definitive assessment tools. Diagnosis requires integration of ADOS-2 findings with developmental history, parent/caregiver reports, and clinical judgment informed by understanding of developmental context, cultural factors, and individual circumstances. Research by Gotham et al. (2007) indicates that the ADOS-2 demonstrates strong psychometric properties including sensitivity and specificity, though cultural considerations require acknowledgment that the instrument was developed and normed primarily on Western populations.

2.3.2 Cultural Validity Considerations

The cultural validity of autism assessment tools for Aboriginal Australian children requires careful consideration. While the behaviors assessed by the ADOS-2 (eye contact, social reciprocity, communication patterns) may have some cultural universality, their expression and interpretation can vary across cultural contexts. Aboriginal Australian cultural practices regarding eye contact, social interaction styles, and communication patterns may differ from Western norms embedded in assessment tools.

Assessment should therefore interpret ADOS-2 findings within cultural context rather than applying diagnostic algorithms mechanically. Consultation with Aboriginal health professionals, cultural advisors, or community members can provide essential perspective on whether observed behaviors reflect autism-specific difficulties or culturally normative patterns. This consultation represents not mere procedural compliance but essential methodological rigor ensuring that assessment validity extends across cultural contexts.

2.4 Cognitive and Intellectual Assessment

2.4.1 Comprehensive Cognitive Evaluation

Evaluation for IDD requires comprehensive cognitive assessment using individually administered measures providing information about intellectual functioning across multiple domains. The Wechsler Preschool and Primary Scale of Intelligence, Fourth Edition (WPPSI-IV; [Wechsler, 2012](#)) would be appropriate given Max's age, assessing intellectual functioning across Verbal Comprehension, Visual Spatial, Fluid Reasoning, Working Memory, and Processing Speed indices.

Given Max's speech delays, careful interpretation of Verbal Comprehension scores becomes essential, as language-based assessment may underestimate cognitive capabilities when verbal expression difficulties limit performance on verbally mediated tasks. The WPPSI-IV's structure enables examination of discrepancy between verbal and nonverbal abilities, potentially revealing uneven cognitive profiles common in ASD ([Charman et al., 2011](#)). If verbal abilities significantly limit valid administration of standard cognitive assessment, nonverbal intelligence measures such as the Leiter International Performance Scale, Third Edition ([Roid et al., 2013](#)) could provide alternative assessment of cognitive capabilities minimally dependent on language comprehension or expression.

2.4.2 Cognitive Profile Analysis

Research by [Munson et al. \(2008\)](#) indicates that IQ scores in ASD may demonstrate instability, particularly in early childhood, making reassessment across developmental periods essential for understanding cognitive trajectory. Some children show improved scores following intervention, while others show stable or declining trajectories, with these different patterns potentially reflecting different underlying profiles or intervention responsiveness.

Profile analysis examining scatter across subtests provides more clinically useful information

than global IQ scores alone (Flanagan & McGrew, 1997). Understanding relative strengths and weaknesses across different cognitive domains informs both diagnostic formulation and intervention planning. For example, relatively stronger visual-spatial reasoning compared to verbal comprehension might suggest specific teaching approaches leveraging visual learning strengths, while significant weakness in working memory might indicate need for instructional modifications reducing cognitive load.

2.5 Adaptive Behaviour Assessment

The Vineland Adaptive Behaviour Scales, Third Edition (Vineland-3; Sparrow et al., 2016) represents the gold standard adaptive assessment, evaluating functioning across Communication, Daily Living Skills, Socialization, and Motor Skills domains. For differential diagnosis between ASD and IDD, examining the pattern of adaptive scores can illuminate whether deficits are global (consistent with IDD) or whether social communication deficits are disproportionate to other adaptive domains (consistent with ASD; Klin et al., 2007).

The Vineland-3 includes multiple forms (Interview, Parent/Caregiver, and Teacher Rating Forms) enabling assessment across contexts and informants. Systematic comparison of parent and teacher reports can reveal whether adaptive functioning varies across settings, potentially indicating that contextual factors (structure, support, demands) influence functioning in ways relevant to intervention planning. Discrepancies between informants may also reflect different expectations or observational opportunities rather than inconsistent child functioning.

Interpretation requires understanding that adaptive behavior scores reflect not only the child's capabilities but also opportunities for skill demonstration and cultural expectations about developmental milestones. For Aboriginal Australian families, expectations about toilet training timing, independent self-care, or peer interaction may differ from mainstream norms embedded in adaptive behavior measures. Assessment should therefore interpret scores within cultural context while recognizing that adaptive functioning reflects the match between individual capabilities and environmental demands rather than decontextualized skill possession.

2.6 Sensory Processing Evaluation

Given Max's reported sensory sensitivities, the Sensory Profile-2 (Dunn, 2014) provides parent and teacher questionnaires assessing sensory processing patterns across multiple modalities including auditory, visual, tactile, taste/smell, movement, and body position. Research by Tomchek & Dunn (2007) indicates that 69-95% of children with ASD demonstrate atypical sensory processing, though the wide range reflects methodological variations and population heterogeneity rather than inconsistent findings.

Sensory assessment serves multiple purposes beyond diagnostic clarification. Understanding Max's specific sensory sensitivities and preferences informs intervention planning by identifying environmental modifications that might reduce distress, instructional approaches that accommodate sensory needs, and therapeutic activities that might improve sensory modulation.

The assessment also provides baseline data enabling monitoring of whether sensory difficulties improve with intervention or development.

2.7 Assessment Timeline and Integration

Comprehensive assessment typically requires multiple sessions distributed over several weeks, enabling observation across occasions and reducing fatigue effects that might compromise performance validity. Research by Zwaigenbaum et al. (2009) emphasizes that assessment quality improves when children are evaluated across multiple contexts and occasions, allowing for more valid conclusions about typical functioning patterns rather than performance during single encounters that may be influenced by anxiety, fatigue, or other transient factors.

The assessment sequence might proceed as follows. Initial session includes clinical interview with parents covering developmental history, current concerns, family context, and cultural factors. Second session includes cognitive assessment using WPPSI-IV or alternative measures as appropriate. Third session includes ADOS-2 administration with Max. Fourth session includes additional assessment as needed based on initial findings, potentially including play-based assessment, language sampling, or additional parent interview. Between sessions, parents complete adaptive behavior rating scales (Vineland-3) and sensory profile questionnaires, while teachers or childcare providers complete parallel forms if Max attends group care settings.

Following assessment completion, the multidisciplinary team reviews all findings systematically, considering convergent evidence across measures and informants, contextual factors influencing interpretation, cultural considerations affecting assessment validity, and the relative support for different diagnostic hypotheses. This integration process recognizes that diagnosis emerges from systematic consideration of multiple data sources rather than from any single test score or behavioral observation, with clinical judgment informed by research evidence playing essential roles in reaching conclusions that serve Max and his family well.

PART III

INTERVENTION

INTERVENTION

3.1 Contemporary Intervention Landscape

Research on ASD intervention has expanded substantially over recent decades, with multiple systematic reviews now available to guide evidence-based practice (Reichow et al., 2012; Warren et al., 2011). These reviews reveal both progress in intervention development and ongoing challenges in determining which approaches work best for which children under what circumstances. Interventions categorize into comprehensive approaches targeting broad developmental domains versus focused interventions addressing specific skills (National Research Council, 2001), with debate continuing about the relative merits of intensive comprehensive programs versus targeted interventions addressing specific skill deficits.

Early intensive behavioural intervention (EIBI) based on Applied Behaviour Analysis principles represents one major comprehensive category. Research by Reichow et al. (2012) in their Cochrane review suggests that EIBI can produce improvements in intelligence, language, and adaptive functioning, though effect sizes vary considerably across studies and response appears heterogeneous across children. Some children demonstrate substantial gains approaching typical development, while others show more modest improvements, with current research unable to predict reliably which children will respond most favorably.

Developmentally-based approaches integrating behavioral principles with relationship-focused methods include the Early Start Denver Model (ESDM). Research by Dawson et al. (2012) indicates that ESDM may produce changes in brain activity patterns alongside behavioral improvements, suggesting neuroplastic effects that extend beyond behavioral training alone. However, sample sizes in neuroimaging studies remain small, replication is needed, and the clinical significance of observed brain changes requires ongoing investigation.

3.2 Focused Intervention Approaches

Focused interventions target specific developmental domains rather than addressing all areas comprehensively. Joint attention interventions show particular promise, with research by Kasari et al. (2010) demonstrating that such interventions can improve both joint attention abilities and language outcomes. These findings suggest that targeting pivotal skills like joint attention may produce cascading effects on related developmental areas, though the mechanisms underlying such generalization require further investigation.

Communication-focused interventions including the Picture Exchange Communication System (PECS) provide alternative communication methods for children with limited verbal abilities. Research by Maglione et al. (2012) indicates PECS can increase communication initiations, though evidence for effects on spoken language development remains mixed, with some children showing emerging verbal communication while others continue relying primarily on picture exchange or other augmentative communication methods.

The heterogeneity in intervention response suggests that matching interventions to individual child profiles, developmental needs, and family priorities represents an important direction for improving outcomes. However, current evidence provides limited guidance about which specific child characteristics predict response to particular interventions, leaving clinicians to make individualized recommendations based on clinical judgment informed by available research evidence.

3.3 Naturalistic Developmental Behavioral Intervention

3.3.1 Theoretical Framework and Core Principles

For Max, naturalistic developmental behavioral intervention (NDBI) approaches represent a particularly appropriate evidence-based strategy. NDBI integrates principles from applied behavior analysis with developmental science, implemented within natural play-based contexts rather than discrete trial training formats (Schreibman et al., 2015). This integration attempts to combine the empirical rigor and systematic teaching methods of ABA with the developmental appropriateness and social engagement emphasis of developmental approaches.

The Early Start Denver Model (Rogers & Dawson, 2010) exemplifies NDBI approaches, combining ABA teaching principles with developmental relationship-based strategies. Key features include targeting developmental skills across all domains rather than focusing narrowly on behavioral compliance, teaching within playful social interactions following the child's interests rather than through pre-determined activities, and implementing intervention intensively across contexts including clinic, home, and community settings (Dawson et al., 2010).

3.3.2 Rationale for Max's Profile

Several factors suggest NDBI would be particularly suitable for Max. First, his young age falls within the developmental window where early intensive intervention demonstrates strongest effects (Rogers et al., 2012), though chronological age alone does not determine intervention appropriateness and developmental level, family factors, and service availability also merit consideration.

Second, his emerging communication abilities suggest he is positioned to benefit from intervention targeting language expansion within social contexts. The NDBI emphasis on following the child's lead and embedding teaching within play activities may be particularly appropriate for building communication skills while maintaining Max's motivation and engagement.

Third, research by Schreibman et al. (2015) indicates that NDBI approaches can be culturally

adapted more readily than highly structured ABA approaches, potentially aligning better with values emphasizing learning through observation and participation in meaningful activities. For Max's family, particularly given Aboriginal Australian cultural contexts that may emphasize learning through observation, relationship, and participation in culturally relevant activities, NDBI's naturalistic format may prove more compatible than highly structured teaching approaches.

3.3.3 Implementation Framework

NDBI implementation begins with comprehensive assessment using developmental frameworks, evaluating skills across receptive communication, expressive communication, social skills, imitation, cognition, play, fine motor, gross motor, behaviour, and independence domains (Rogers & Dawson, 2010). This assessment informs individualized goal-setting that should occur collaboratively with parents, ensuring alignment between intervention targets and family priorities while respecting cultural values about development and child-rearing.

Core intervention techniques include several systematic strategies. Following the child's lead means the interventionist joins Max's activities rather than redirecting him away from his interests, using his motivation as the foundation for teaching. Creating communication opportunities involves arranging the environment to prompt requests, such as placing preferred items visible but out of reach, or pausing during favorite activities to encourage communication for continuation. Modelling and expanding language requires responding immediately to Max's communication attempts with slightly more complex language, showing him how to elaborate his expressions while maintaining natural conversation flow.

Establishing joint activity routines creates predictable, enjoyable routines providing multiple opportunities for social engagement, communication, and learning. These might include songs with gestures, simple games with turn-taking, or daily care routines with consistent language and actions. Using positive reinforcement means Max's communication attempts and target behaviors receive immediate reinforcement through natural consequences rather than artificial rewards, maintaining intrinsic motivation while teaching new skills.

3.3.4 Parent Partnership and Cultural Integration

Parent coaching represents a critical component, enabling intensive intervention within daily routines when professional services cannot provide sufficient intensity alone. Research by Rogers et al. (2012) examining parent-delivered ESDM indicates that parents can implement strategies effectively with appropriate coaching, producing meaningful improvements in child outcomes. For Stephanie and Charles, parent coaching sessions might occur weekly initially, focusing on embedding intervention strategies within mealtimes, playtime, bedtime routines, and community outings.

Cultural integration requires respectful dialogue about how NDBI strategies align with or differ from cultural approaches to child-rearing and learning. Aboriginal Australian cultural traditions emphasizing learning through observation, storytelling, connection to country, and par-

participation in cultural activities might inform adaptation of NDBI techniques. For example, intervention might incorporate Aboriginal cultural practices, use culturally relevant materials and activities, involve extended family or community members consistent with cultural values, and occur in culturally appropriate contexts when possible.

3.4 Dosage, Monitoring, and Expected Outcomes

3.4.1 Intervention Intensity

Research on NDBI approaches suggests that 20-25 hours per week of intervention produces optimal outcomes (Dawson et al., 2010), though this intensity requires combining multiple sources including direct therapy sessions, parent-implemented intervention during daily routines, and educator-implemented strategies in childcare or preschool settings. For Max, achieving this intensity might involve structured therapy sessions, parent coaching supporting implementation across home routines, childcare provider training enabling strategy use in group settings, and community-based intervention embedding learning in natural contexts.

The feasibility of achieving recommended intensity varies across families based on practical constraints, family resources, competing demands, and service availability. Assessment should explore realistically what intensity the family can sustain, what supports might enable increased intensity, and how intervention can be structured to maximize benefit within achievable parameters rather than prescribing ideal intensity that proves impossible to implement.

3.4.2 Progress Monitoring

Progress monitoring using systematic data collection enables evaluation of whether intervention is producing expected gains and modification of approach if progress proves insufficient. This might include regular assessment using curriculum-based measures aligned with intervention goals, periodic standardized assessment tracking development across domains, systematic behavior observation documenting skill use across contexts, and parent report of skill generalization to everyday situations.

The monitoring schedule should balance obtaining sufficient data for decision-making against overburdening families with excessive assessment. Quarterly reassessment using standardized measures might occur alongside ongoing data collection during intervention sessions, with team meetings every three to six months reviewing progress and adjusting goals or strategies as needed.

3.4.3 Outcome Expectations

Research on ESDM indicates that children receiving this intervention demonstrate improvements including increased language abilities both receptive and expressive, enhanced social communication including joint attention and social engagement, reduced autism symptom severity on standardized measures, and improved cognitive functioning on IQ measures (Dawson et al., 2012). However, response to intervention varies considerably, with some children making substantial gains while others show more modest improvements (Vivanti et al., 2014).

This variability suggests the importance of avoiding overly optimistic predictions while maintaining realistic hope grounded in evidence. Max's response will depend on multiple factors including his specific profile of strengths and challenges, intervention quality and intensity, family implementation consistency, and other individual factors that current research cannot fully predict. Regular monitoring will reveal whether he is progressing as expected or whether intervention requires modification to better address his needs.

3.5 Comprehensive Support Framework

Effective intervention extends beyond specific teaching strategies to encompass comprehensive support addressing the family's needs holistically. This might include connecting families with community resources including Aboriginal health services, parent support groups, and developmental services; addressing practical barriers to intervention participation such as transportation, childcare for siblings, or financial constraints; providing emotional support to parents navigating the demands of raising a child with developmental differences; and advocating for appropriate services and supports within childcare, education, and health systems.

For Max's family, cultural support might prove particularly important, including involvement of Aboriginal health workers, connection to Aboriginal community resources, participation in cultural activities and programs, and ensuring that services demonstrate cultural competence and respect. These cultural supports serve not only the practical function of facilitating service access but also the essential function of maintaining cultural identity and connection that contribute to overall family wellbeing.

3.6 Synthesis and Forward Planning

Max's case illustrates the complexity inherent in neurodevelopmental assessment for young children presenting with concerns for autism spectrum disorder and intellectual developmental disorder. Comprehensive evaluation employing multiple assessment methods and professional perspectives will enable accurate diagnostic formulation while identifying Max's unique profile of strengths and needs (Ozonoff et al., 2005).

Evidence-based interventions such as naturalistic developmental behavioral approaches offer promise for supporting his development when implemented with appropriate intensity, cultural responsiveness, and family partnership (Rogers & Dawson, 2010). However, intervention success depends not only on choosing evidence-based approaches but also on systematic implementation, regular monitoring, family engagement, and cultural integration that respects Aboriginal identity and cultural practices while providing effective support.

The assessment and intervention planning process should proceed with humility about professional knowledge limits, recognition that families hold essential expertise about their children, respect for cultural knowledge and practices, and commitment to partnership ensuring that services align with family values and priorities. This approach recognizes that professional expertise represents one knowledge source among several, with family knowledge, cultural wisdom,

and community resources all contributing to comprehensive understanding of Max's needs and effective planning for his support.

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