

Helping children with autism:

Evidence-based assessment and treatment
– a guide for health professionals



Contents

What is autism spectrum disorder (ASD)?	2
Features of ASD	4
An interdisciplinary approach	6
The role of psychologists	8
The role of speech pathologists	14
The role of occupational therapists	22
Pathways to assessment and intervention	28
How to find a psychologist, speech pathologist, or occupational therapist	30
Where to go for further information and support	31
Directory of autism associations	33



About this booklet

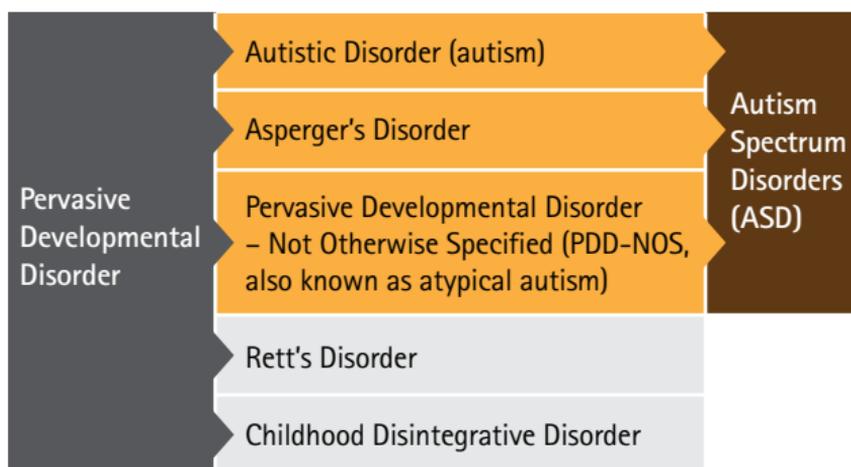
This booklet provides information for health professionals about the assessment and treatment of children with autism spectrum disorder (ASD). It includes an overview of ASD, information about the allied health professionals involved in assessment, diagnosis, and treatment of ASD, and the steps to take when seeking assessment and treatment through the Australian Government's *Helping Children with Autism* package.

What is autism spectrum disorder (ASD)?

Autism spectrum disorder is a lifelong neuro-developmental disability that is part of the broader category called Pervasive Developmental Disorders. These disorders are:

- Autistic Disorder (autism)
- Asperger's Disorder
- Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS, also known as atypical autism)
- Rett's Disorder
- Childhood Disintegrative Disorder

The term 'autism spectrum disorder' (ASD) is an umbrella term now commonly used to describe Autistic Disorder, Asperger's Disorder and Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS). Please refer to the table below.





Two publications guide the diagnosis of ASD: the DSM-IV-TR - Diagnostic and Statistical Manual of Mental Disorders, and ICD -10 – International Statistical Classification of Diseases and Related Health Problems.

ASD is the focus of this booklet. Since Rett's Disorder and Childhood Disintegrative Disorder are rare, they are not discussed here. Nonetheless, they are also eligible for services under the Australian Government's *Helping Children with Autism* package.

Features of ASD

ASD is characterised by impairments in three areas of development and functioning. These areas, referred to as the 'triad of impairments', are:

- social interaction;
- verbal and nonverbal communication; and
- restricted and repetitive interests, behaviours, and routines.

These impairments are usually present before the age of three and features can vary markedly. The child's age and level of intellectual functioning also impacts on the behavioural presentation. However, almost all children with ASD exhibit some of the following features:

- difficulty with the eye contact;
- difficulty with the use and understanding of gestures;
- difficulty sharing interests with others;
- difficulties with, or no, verbal language;
- echolalia (i.e., repetition of words spoken to them);
- delayed development of receptive and expressive language;
- sensory sensitivities;
- motor impairments;
- difficulty with, or absence of, symbolic or imaginative play;
- unusual preoccupations;
- stereotyped behaviours;
- narrow and intense interests;

- a preference for routines;
- impaired social skills; and
- difficulty understanding emotions in self and others.

Children with Asperger's Disorder differ from children with Autistic Disorder in that they may not present with significant delays in the development of intelligence and language before the age of three. However, they do have significant impairments that are often more evident when interacting with other children than when interacting with adults.

Children with PDD-NOS also have impaired social skills similar to those found in children with Autistic Disorder and Asperger's Disorder, but are significantly impaired only in communication or behaviours. They may or may not have cognitive impairment.

Intellectual disability varies for children with ASD. The majority of children with Autistic Disorder have low general intelligence (IQ < 70). Children who have ASD but no intellectual disability are often referred to as having high-functioning autism. Around 10 percent of children with ASD demonstrate high intelligence, with this sometimes occurring in a particular area such as maths, art, music, or computer studies.

Research suggests that ASD affects at least 1 in 160 children, with Autistic Disorder being the most common. ASD is more commonly diagnosed in boys than in girls — at a rate of about four to one.

An interdisciplinary approach

The daily experiences of children with ASD can vary greatly. Some require high levels of support, lifelong care, and supervision, while others — particularly those within the normal range of intellectual functioning — can learn to function independently.

There is no known cure for ASD. However, there is now significant evidence to indicate that early intervention and support based on developmental, behavioural, and educational principles makes a significant difference to the long-term outcomes for children with ASD. This is especially so when the child's family is involved. Research currently indicates that the earlier the intervention is implemented, the more effective the outcome. Therefore, the early identification and treatment of ASD is crucial to the lives of children and families.

The assessment and treatment of children with ASD involves a team of professionals that includes medical specialists (paediatricians and child psychiatrists) and allied health professionals (psychologists, speech pathologists, and occupational therapists). Each professional plays an important but different role in the assessment and differential diagnosis of ASD.



Most referring medical practitioners are familiar with the roles of medical specialists. Therefore, this booklet will focus on the roles and contributions of psychologists, speech pathologists, and occupational therapists in the assessment and treatment of children with ASD. As will become clear, these allied health professionals have specific training and expertise, and they are able to make unique contributions to benefit children with ASD and their families.

Research shows that the best outcomes for children with ASD are achieved when health and education professionals work collaboratively using a team approach to provide high standards of interventions that include support for parents and carers.

The role of psychologists

A registered psychologist has completed a minimum of six years of professional training. This training includes the completion of a four-year Australian Psychology Accreditation Council (APAC) endorsed university degree followed by an APAC endorsed postgraduate degree or two years of supervised professional training. Through postgraduate and further training, some psychologists choose to specialise in assessing the intellectual, social, and behavioural functioning of children, and in diagnosing and treating ASD. A list of psychologists specialising in ASD can be found on the Australian Psychological Society website.



Psychologists work with other health professionals including general practitioners, paediatricians, and psychiatrists to identify and treat childhood disorders such as ASD.

Psychologists use a range of assessment processes to determine whether individual children meet the criteria for ASD, whether a different diagnosis is appropriate, or whether difficulties of a more general nature are present. The information gathered from assessments is used by psychologists to make recommendations for individually-designed intervention programs that meet the specific needs of each child.

When should a child see a psychologist?

Professionals who are concerned about a child's intellectual, behavioural, social, and/or communication abilities should refer the child for assessment by a psychologist. This will provide information about whether the child is developing at an appropriate level for his or her age. For example, a child should be referred for assessment by a psychologist if he or she is exhibiting unusual levels of fear, stress, or anxiety; has difficulty socialising; is experiencing difficulties with learning; or is engaging in unusual behaviours.

What does assessment of a child by a psychologist involve?

A psychologist's assessment of a child for ASD involves interviewing significant people in the child's life. These people usually include parents, other carers, and teachers. The psychologist would also observe the child, often in different settings, and administer formal assessments. Depending on the situation, tests of intelligence and of adaptive behaviour may also be administered.

Areas that the psychologist will look at as part of this process include:

- how the child responds emotionally to physical contact;
- how the child responds to his or her name;
- use of eye contact, gestures, and facial expressions;
- evidence of unusual levels of fear, distress, or anxiety;
- evidence of stereotypical or repetitive body movements or mannerisms;
- the child's ability to communicate wants and needs;
- unusual or intense interest in topics, particularly in relation to activities and the child's play;
- abnormal or repetitive use of language;
- the child's capacity for self expression and to reason and problem solve;

- the quality of the child’s interactions with adults and other children;
- the child’s ability to cope with everyday situations – for example a change in routine.

Formal assessment

Formal assessment may involve the administration of instruments that have particular relevance to the diagnosis of ASD, including:

- The Child Autism Rating Scale (CARS),
- Autism Detection in Early Childhood (ADEC),
- The Social Communication Questionnaire (SCQ),
- The Autism Diagnostic Observation Schedule (ADOS), and
- The Autism Diagnostic Interview — Revised (ADI-R)

In addition, psychologists often administer more general tests to gather information about the child’s developmental level and intellectual functioning. These tests include the:

- Psychoeducational Profile (PEP),
- Mullen Scales of Early Learning,
- Weschler Pre-school and Primary Scale of Intelligence (WPPSI),
- Wechsler Intelligence Scale for Children (WISC),
- Universal Nonverbal Intelligence Test, and
- Stanford-Binet Intelligence Test.

Psychologists also administer scales of adaptive functioning, such as the Vineland Adaptive Behaviour Scales.

Formal assessment provides the psychologist with a more comprehensive understanding of children's difficulties, their intellectual abilities, and how they cope in everyday situations.

The psychologist considers the information collected during the assessment to determine if the child meets the criteria for Autistic Disorder, Asperger's Disorder, or PDD-NOS — or whether a different diagnosis or further assessment is warranted.

What kind of treatments do psychologists provide?

The information collected during the assessment also assists the psychologist to develop a treatment plan that is tailored to the child's needs.

Intervention by a psychologist is important for children with ASD. Psychologists use a range of techniques including behavioural strategies, skills training, and emotional regulation to help children with ASD cope better in their everyday lives.

Psychologists:

- use behavioural interventions to reduce specific behaviours that are undesirable, while simultaneously promoting new behaviours and skills that are desirable;

- provide social skill development using behavioural strategies and interventions such as social/behavioural scripts, role-plays, and social stories to:
 - improve interaction and communication skills including making eye contact, using appropriate greetings, developing listening and turn-taking skills;
 - develop children’s awareness of their difficulties and emotions, and to increase understanding of social cues and conventional behaviour;
- work with parents, other carers, and professionals such as teachers to provide them with strategies to assist the child function better in the home, school, and other environments;
- help children with ASD to manage their anxiety levels. Because children with ASD have difficulty understanding their environment and the behaviour of others, they are at risk of developing anxiety disorders. Psychologists work with children who have ASD, as well as with their families and other carers, to teach them how ASD-related anxiety can be monitored and reduced;
- assist children throughout development ,as children with ASD often experience difficulties with transitions such the first year of school or entry into adolescence.

The role of speech pathologists

Speech pathologists are tertiary educated professionals who have completed a minimum four year undergraduate degree or two year graduate-entry masters degree. Speech pathology courses provide extensive training in the areas of child development, disordered and delayed speech, and language development. These include social communication and interaction skills, and appropriate remediation and intervention. When seeking the involvement of speech pathologists to provide assessment and treatment for children with ASD it is important to seek practitioners who have appropriate skills and expertise . The Speech Pathology Australia website provides a list of members who have a special interest in working with children who have developmental disorders such as ASD.



The speech pathologist plays an integral role in the assessment and treatment of children with an ASD, and reports the assessment results and clinical information to other members of the interdisciplinary team. The speech pathologist has expertise in the areas of social communication, speech and language development, learning and cognitive abilities, and play skills.

As a member of the interdisciplinary team, the speech pathologist uses developmental and social interactive interventions in the child's natural environment. These interventions are supported by the implementation of visual aids and strategies to enhance the child's communication, social, behavioural, and play skills in all facets of his or her life.

When should a child see a speech pathologist?

Referral to a speech pathologist is appropriate when a parent, teacher, or other professional is concerned because a child is demonstrating any of the following difficulties:

- delayed onset or delayed development of speech and language;
- regression or loss of communication skills;
- problems with understanding spoken language;
- frustration and challenging behaviours resulting from communication difficulties;

- difficulty with conversation, forming relationships, and socialising with peers, family members, and others; and
- learning difficulties.

Speech pathologists are specialists who are able to identify whether a child's language and communication development is delayed or different from that of other children, and whether it shows signs typical of ASD.

What does assessment of a child by a speech pathologist involve?

The speech pathologist will interview the parents and observe how the child interacts with family members and other people in different contexts such as at home, preschool, or school. Adequate hearing is crucial to the development of speech and language. If the child's hearing has not been formally assessed by an audiologist, a referral should be arranged for this assessment.

The type of assessment and the tools required to assess the child will vary greatly depending on the age and skills of the individual child. The assessment usually incorporates examining the areas of speech, receptive and expressive language, and pragmatics (social communication).



Developmental assessments and observation of play and interaction are used by the speech pathologist to assess verbal and non-verbal early communication skills such as:

- Joint attention – whether the child uses eye gaze for directing another person’s attention to objects and events for the purpose of sharing.
- Gestures – whether the child uses gestures to communicate, or understands common gestures, for example, putting arms up to indicate a desire to be picked up, or responding to the wave ‘bye bye’.
- Pointing – does the child use pointing to indicate when he or she wants to have things or wants to show things of interest?
- Vocalisation – does the child use sounds, words or word combinations? If not, what other ways does the child use to convey a message?
- Echolalia – does the child repeat language he or she has heard for no apparent reason?
- Receptive language – does the child respond to his or her name? Does the child demonstrate age-appropriate comprehension?

- Pragmatic use of language - can the child use language for a variety of reasons, for example, requesting, greeting, asking for help, and protesting?
- Initiation – does the child initiate interactions with people, either verbal, non-verbal or social?
- Play - is the child developing age-appropriate play? Is the play pretend or imaginative, repetitive, or in some way unusual?

When a child has developed speech and language, developmental checklists and formal language tests may be used to determine whether the child's receptive and expressive language and articulation is age-appropriate, delayed, or disordered. Speech pathologists use tests such as:

- The Clinical Evaluation of Language Fundamentals – 4 (CELF - 4);
- The Preschool CELF - P2;
- Rosetti Infant-Toddler Language Scale; and
- Preschool Language Scales - 4 (PLS - 4).



Pragmatic language is assessed in a variety of ways including parent and teacher reports and the completion of profiles and questionnaires; observations of the child in a range of different environments, and through the use of formal pragmatic language tests such as:

- The Children’s Communication Checklist -2 (CCC – 2),
- The Test of Problem Solving – 3 (TOPS-3), and
- The Test of Pragmatic Language – 2 (TOPL - 2).

Additional assessment may investigate whether the child:

- Understands inference
- Understands humour, and double meanings
- Interprets other people’s language literally.
- Uses pedantic or “adult-like” language
- Demonstrates unusual prosodic features such as monotonic vocalisation, an unusual accent, or poor volume control.

The information gained from the speech pathology assessment will be considered in conjunction with information from the other members of the multi-disciplinary team to determine whether a child is given a diagnosis of ASD.

What kind of treatments do speech pathologists provide?

The speech pathologist will use information from the multi-disciplinary assessment to establish goals and plan an individualised communication program for the child. Because ASD is complex, therapy needs to address a number of different areas and will vary, depending on the child's current skills. Areas of therapy may include the development of:

- alternative communication systems for the child who isn't talking e.g., use of photos, pictures, or signing;
- vocabulary, syntax, semantics, and articulation for the child who is verbal;
- receptive language skills;
- play skills;
- use and understanding of body language and facial expression;
- conversation skills – initiation, turn taking, topic choice and maintenance;
- social skills;

- prosodic features such as intonation, volume and tone of voice;
- higher level language skills, such as inference, humour, and sarcasm; and/or
- the use of visual aids such as timetables, schedules, behavioural scripts, and social stories to assist the child with organisation and to cope with change and transitions.

Speech pathology sessions can be delivered in a variety of ways including individual therapy, working in small groups, and working within a preschool or classroom setting. Speech pathologists also work in home-based programs to educate parents about effective communication strategies in everyday situations, and incorporate predictable routines and motivating activities that help a child with the generalisation of skills.

The role of occupational therapists

Occupational therapists are tertiary educated health professionals who have completed a minimum four year undergraduate degree or two year graduate-entry masters degree. Their training includes knowledge about health conditions and child development. Occupational therapists can assist children to engage in school, play, and self-care occupations and to participate in their life roles with their families at home, school, and in the community. It is important to seek a practitioner who has the skills and expertise to provide assessment and treatment for children with ASD. The OT Australia website provides a list of members who have a special interest in working with children who have developmental disorders such as ASD.



Occupational therapists (OTs) are child- and family-focused. They assist children to manage the sensory sensitivities, as well as the behavioural and coordination difficulties, that often accompany ASD. OTs also help children to overcome challenges they may have with daily activities.

OTs use children's everyday activities as the focus of intervention and are expert at modifying activities and environments to better suit a child's needs.

When should a child see an occupational therapist?

Referral to an OT is appropriate if a child has difficulties with play, managing transitions, self-care, or school-work tasks such as concentrating and writing, or has sensory and coordination difficulties.

OTs specialise in enhancing children's development and skill acquisition and, when necessary, designing support programs that allow children to use their skills and strengths optimally.

What does assessment of a child by an occupational therapist involve?

The OT will talk with the parents or carers, the child (if appropriate), and other professionals about a child's strengths, weaknesses, likes, dislikes, and behaviour. OTs use their knowledge of children's activities, and their sensorimotor, cognitive, language and social-emotional development as the basis for understanding the challenges a child faces, and the abilities he or she possesses. An OT will use both formal and informal assessments to identify the nature of the child's difficulties.

Occupational therapy assessment may identify problems in one or more of the activities that the child undertakes at home, at school, in the playground, or in the community.

Formal assessment

Formal assessment may include use of:

- developmental assessments such as the Bayley Scales, the Batelle Developmental Inventory, the Carolina Curriculum, and the Hawaii Early Learning Profile (HELP);
- motor assessments such as the Peabody Developmental Motor Scales;
- sensory measures such as the Sensory Profile; or
- measures for evaluating performance of everyday activities, such as the Canadian Occupational Performance Measure.

What kind of treatments do occupational therapists provide?

The aim of an occupational therapy session is to improve a child's ability to perform a wide range of play, self-care, social, and school-related activities to maximise the child's skills for living. The OT will consider the physical, social, and cultural circumstances of each child before developing a treatment plan that is tailored to the child's development and needs.

The OT will work collaboratively with the child and parents to identify goals for intervention and develop a plan of action with short-term objectives that they can work on together. As part of this process the OT might provide more structure for, or modify, the activities that the child finds difficult — for instance, dressing, playing with other children, or coping with change. Over time, the OT will also work with the child and family to assist the child to learn new ways of doing things and developing new skills.

Occupational therapy sessions for a young child might involve:

- developing play skills that include social interaction, sharing, and taking turns;
- modelling and support for parents who are learning to interact and play with their child;
- teaching self-care activities like toileting, bathing, and feeding;

- engaging in activities to improve the child's fine and gross motor skills;
- behaviour management such as learning to sit and wait; and
- strategies and interventions that address sensory difficulties.

For a school-aged child, an occupational therapy session might involve additional activities such as active movement, role-plays, stress reduction techniques, handwriting practice, or participation in a social skills group with other children. As the child gets older, these activities might expand to include organising and managing friendships, interests, and responsibilities.

OTs make use of visual strategies such as visual timetables, social stories, and visual cue-cards. They may teach the child self-management or self-regulation strategies to cope with challenges such as personal organisation, social skills, or sensory sensitivity. For instance, the OT may work with the child and the teacher to modify classroom expectations to allow new ways for a child to demonstrate knowledge despite such things as poor handwriting and difficulties with personal organisation.



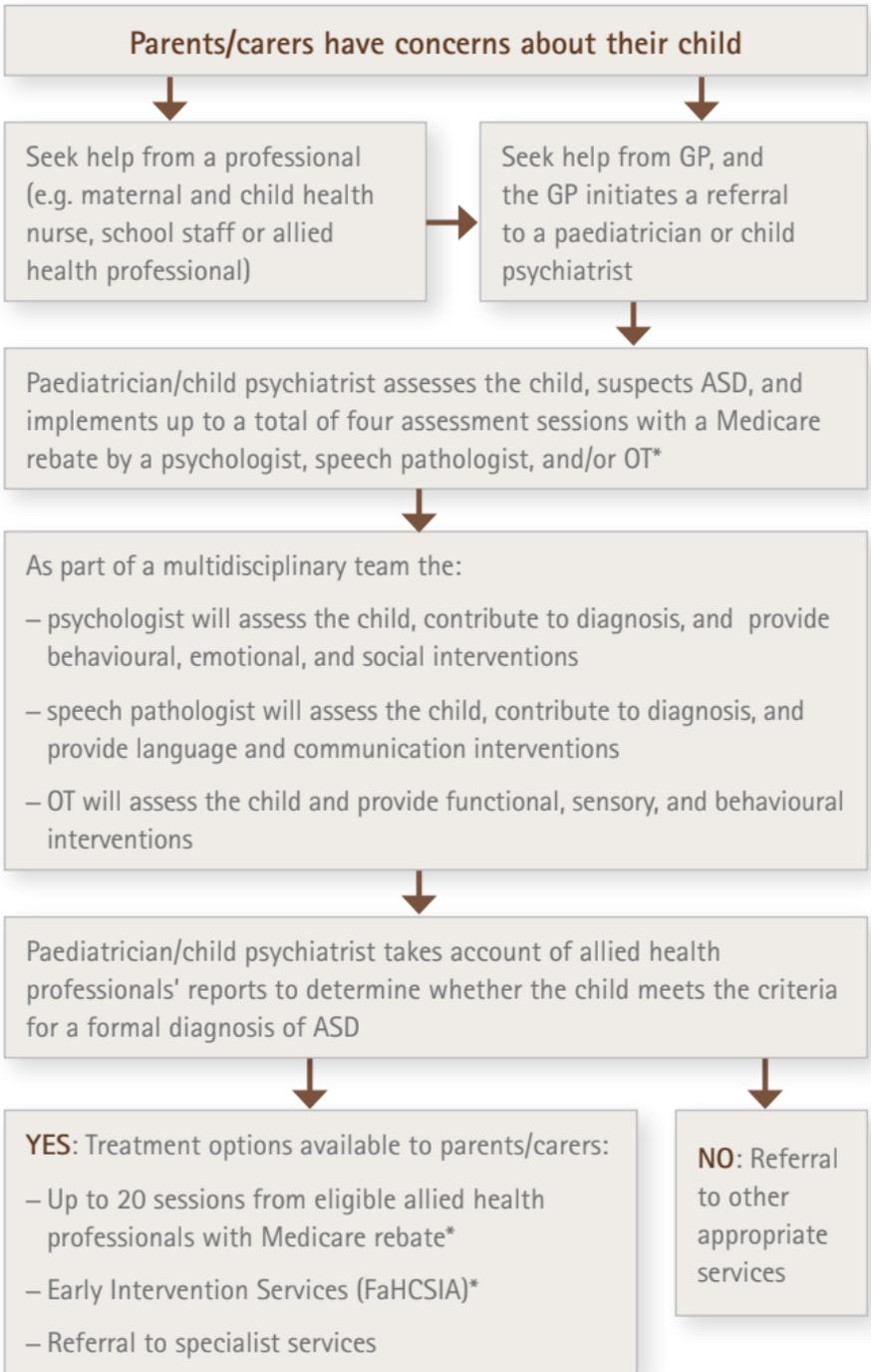
In summary, OTs are skilled in a variety of types of intervention:

- promoting and maximising a child's occupation performance, health, well-being, and participation;
- assisting a child to develop new skills;
- ensuring new skills are maintained and built upon;
- modifying the environment or activity to ensure a child can participate in meaningful ways; and
- implementing steps to prevent the development of behaviours or performance that would diminish a child's strengths or abilities in the long term.

Pathways to assessment and intervention

Under the Australian Government's *Helping Children with Autism* package, Medicare rebates have been introduced for the assessment of children who may have ASD and for treatment once a diagnosis of ASD has been made. These rebates are for services provided by psychologists, speech pathologists, and occupational therapists on referral from a paediatrician or child psychiatrist. Funding is also available for early intervention services through the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA). A typical pathway to access these services is shown on the next page.

Other pathways to access services for children with ASD also exist. These include specialist services such as child development units, other government and non-government funded services. For more information on other services contact the autism association in your state.



* Refer to relevant Australian Government websites for eligibility criteria for the *Helping Children with Autism* package.

How to find a psychologist, speech pathologist, or occupational therapist

The following resources can direct you to psychologists, speech pathologists, and occupational therapists who practise in the area of ASD.

Australian Psychological Society

Autism and PDD Identified Practitioner List

www.psychology.org.au/prac_resources/medicare/autism_list

You can also call on 1800 333 497.

Speech Pathology Australia

www.speechpathologyaustralia.org.au

You can also call on (03) 9642 4899.

The Australian Association of Occupational Therapists

www.ausot.com.au

You can also call on (03) 9415 2900.

Where to go for further information and support

Department of Health and Ageing ***Helping Children with Autism***

www.health.gov.au

Select “autism” in the “Information by health topic” search box.

More detailed information on the components of the Australian Government’s *Helping Children with Autism* package can be viewed at this page.

FaHCSIA Early Intervention Services

www.fahcsia.gov.au

Type in “autism” in the search box at the top right hand corner of the home page.

FaHCSIA offers a number of programs to assist children and families of children with ASD as part of the *Helping Children with Autism* package. These include a national program of workshops that deliver flexible and targeted support for families and carers, plus playgroups and Early Learning and Care Centres for children with ASD across Australia.

Where to go for further information
and support? *continued*

Raising Children Network

www.raisingchildren.net.au

Select the option “Helping Children with Autism”
on the home page,

As part of the *Helping Children with Autism*
package, the Australian Government provides
this comprehensive online resource about ASD to
support parents, families, carers, and professionals.
Parents and carers can visit this site to learn more
about ASD, explore the service pathfinder, read a
guide to therapies, and interact in a parents’ forum.

Directory of autism associations

ACT

Autism Asperger ACT

<http://www.autismaspergeract.com.au/>

Ph: (02) 6290 1984

NSW

Autism Spectrum Australia (ASPECT)

<http://www.autismspectrum.org.au/>

Ph: (02) 8977 8300

NT

Autism NT

<http://www.autismnt.com.au/>

Ph: (08) 8948 4424

QLD

Autism Queensland

<http://www.autismqld.com.au/>

Ph: (07) 3273 0000

SA

Autism SA

<http://www.autismsa.org.au/>

Ph: 1300 AUTISM (1300 288 476)

TAS

Autism Tasmania

<http://www.autismtas.org.au/>

Ph: (03) 6423 2288

VIC

Autism Victoria

<http://www.autismvictoria.org.au/>

Ph: (03) 9657 1605 or 1300 308699

WA

Autism Association of Western Australia

<http://www.autism.org.au/>

Ph: (08) 9489 8900

Helping children with autism:

A guide for health professionals
on evidence-based assessment and treatment



This booklet has been developed with funding from the
Australian Government Department of Health and Ageing.