



A technical aid packet on

Autism Spectrum Disorders and Schools

The Center is co-directed by Howard Adelman and Linda Taylor
and operates under the auspices of the School Mental Health Project, Dept. of Psychology, UCLA.
Center for Mental Health in Schools, Box 951563, Los Angeles, CA 90095-1563
Phone: (310) 825-3634; Toll free: (866) 846-4843; Fax: (310) 206-5895; E-mail: smhp@ucla.edu

Permission to reproduce this document is granted. Please cite source as the Center for Mental Health in Schools at UCLA.

Please reference this document as follows: Center for Mental Health in Schools at UCLA. (2008). *Autism Spectrum Disorders and Schools. A technical aid packet*. Los Angeles, CA: Author.

Copies may be downloaded from: <http://smhp.psych.ucla.edu>

If needed, copies may be ordered from:

Center for Mental Health in Schools

UCLA Dept. of Psychology

P.O. Box 951563

Los Angeles, CA 90095-1563

The Center encourages widespread sharing of all resources.

Preface

This Technical Assistance packet is designed to provide those working in schools with a brief set of resources for understanding *Autism Spectrum Disorders* and what is done to treat them – with a special emphasis on the role of the school. There is a particular interest in this topic at this time because of the increasing number of youngsters being labeled, revived speculation about cause, and ongoing controversy about best practices and what the mental health focus should be.

One major concern has been the implications for special education. With increased diagnoses comes enhanced competition for sparse resources and concerns about the ability of schools to be in compliance with special education mandates.

This packet provides introductory information, highlights controversies and concerns, and outlines best practices and available resources.

From: *Autism Spectrum Disorders (Pervasive Developmental Disorders)* – a detailed booklet that describes symptoms, causes, and treatments, with information on getting help and coping.

Published in 2004 by the **National Institute for Mental Health (NIMH)**

Not until the middle of the twentieth century was there a name for a disorder that now appears to affect an estimated one of every five hundred children, a disorder that causes disruption in families and unfulfilled lives for many children. In 1943 Dr. Leo Kanner of the Johns Hopkins Hospital studied a group of 11 children and introduced the label *early infantile* autism into the English language. At the same time a German scientist, Dr. Hans Asperger, described a milder form of the disorder that became known as Asperger syndrome. Thus these two disorders were described and are today listed in the *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR* (fourth edition, text revision)¹ as two of the five pervasive developmental disorders (PDD), more often referred to today as autism spectrum disorders (ASD). All these disorders are characterized by varying degrees of impairment in communication skills, social interactions, and restricted, repetitive and stereotyped patterns of behavior.

The autism spectrum disorders can often be reliably detected by the age of 3 years, and in some cases as early as 18 months.² Studies suggest that many children eventually may be accurately identified by the age of 1 year or even younger. The appearance of any of the warning signs of ASD is reason to have a child evaluated by a professional specializing in these disorders.

Parents are usually the first to notice unusual behaviors in their child. In some cases, the baby seemed "different" from birth, unresponsive to people or focusing intently on one item for long periods of time. The first signs of an ASD can also appear in children who seem to have been developing normally. When an engaging, babbling toddler suddenly becomes silent, withdrawn, self-abusive, or indifferent to social overtures, something is wrong. Research has shown that parents are usually correct about noticing developmental problems, although they may not realize the specific nature or degree of the problem.

The pervasive developmental disorders, or autism spectrum disorders, range from a severe form, called autistic disorder, to a milder form, Asperger syndrome. If a child has symptoms of either of these disorders, but does not meet the specific criteria for either, the diagnosis is called pervasive developmental disorder not otherwise specified (PDD-NOS). Other rare, very severe disorders that are included in the autism spectrum disorders are Rett syndrome and childhood disintegrative disorder.

1. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders: DSM-IV-TR (fourth edition, text revision)*. Washington DC: American Psychiatric Association, 2000.

2. Filipek PA, Accardo PJ, Baranek GT, Cook Jr. EH, Dawson G, Gordon B, Gravel JS, Johnson CP, Kellen RJ, Levy SE, Minshew NJ, Prizant BM, Rapin I, Rogers SJ, Stone WL, Teplin S, Tuchman RF, Volkmar FR. The screening and diagnosis of autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 1999; 29(2): 439-484.

Addendum (February 2007)

This addendum to the booklet Autism Spectrum Disorders (<http://www.nimh.nih.gov/health/publications/autism/complete-publications.shtml>) was prepared to clarify information contained in the booklet; and to provide update information on the prevalence of autism spectrum disorders.

Prevalence

In 2007 - the most recent government survey on the rate of autism - the Centers for Disease Control (CDC) found that the rate is higher than the rates found from studies conducted in the United States during the 1980s and early 1990s (survey based on data from 2000 and 2002). The CDC survey assigned a diagnosis of autism spectrum disorder based on health and school records of 8 year olds in 14 communities throughout the U.S. Debate continues about whether this represents a true increase in the prevalence of autism. Changes in the criteria used to diagnose autism, along with increased recognition of the disorder by professionals and the public may all be contributing factors. Nonetheless, the CDC report confirms other recent epidemiologic studies documenting that more children are being diagnosed with an ASD than ever before.

Data from an earlier report of the CDC's Atlanta-based program found the rate of autism spectrum disorder was 3.4 per 1,000 for children 3 to 10 years of age. Summarizing this and several other major studies on autism prevalence, CDC estimates that 2-6 per 1,000 (from 1 in 500 to 1 in 150) children have an ASD. The risk is 3-4 times higher in males than females. Compared to the prevalence of other childhood conditions, this rate is lower than the rate of mental retardation (9.7 per 1,000 children) but higher than the rates for cerebral palsy (2.8 per 1,000 children), hearing loss (1.1 per 1,000 children), and vision impariment (0.9 per 1,000 children). The CDC notes that these studies do not provide a national estimate.

For additional data, please visit the autism section of the CDC Web site.
<http://www.cdc.gov/ncbddd/autism/>

CONTENTS

I. Introduction	1
<i>A. How are Autism Spectrum Disorders Defined?</i>	1
<i>B. What Causes Autism? Summary of Theories on Causes</i>	5
<i>C. How is Autism Diagnosed?</i>	7
II. Treatment	13
<i>A. About Treatment Options</i>	14
<i>B. How to Seek Treatment for a Child with Autism</i>	16
<i>C. Examples of Treatments Used</i>	18
<i>D. About Treatment Efficacy and Research</i>	20
III. The School's Role	23
<i>A. Educating Children with Autism</i>	24
<i>B. About the Schools Role</i>	26
<i>C. Strategies for Classroom Inclusion of Autistic Individuals</i>	28
IV. Additional Resources	32
<i>A. Web Resources</i>	33
<i>B. Agencies</i>	37
<i>C. Our Center's Quick Find</i>	39
<i>D. References</i>	45

I. Introduction

A. How are Autism Spectrum Disorders Defined?

According to the National Institute of Mental Health (NIMH):
(<http://www.nimh.nih.gov/Publicat/autism.cfm>)

Autism Spectrum Disorders (ASD), also known as Pervasive Developmental Disorders (PDDs), cause severe and pervasive impairment in thinking, feeling, language, and the ability to relate to others. These disorders are usually first diagnosed in early childhood and range from a severe form, called autistic disorder, through pervasive development disorder not otherwise specified (PDD-NOS), to a much milder form, Asperger syndrome. They also include two rare disorders, Rett syndrome and childhood disintegrative disorder.

The autism spectrum disorders are more common in the pediatric population than are some better known disorders such as diabetes, spinal bifida, or Down syndrome. Prevalence studies have been done in several states and also in the United Kingdom, Europe, and Asia. Prevalence estimates range from 2 to 6 per 1,000 children. This wide range of prevalence points to a need for earlier and more accurate screening for the symptoms of ASD. The earlier the disorder is diagnosed, the sooner the child can be helped through treatment interventions. Pediatricians, family physicians, daycare providers, teachers, and parents may initially dismiss signs of ASD, optimistically thinking the child is just a little slow and will "catch up." Although early intervention has a dramatic impact on reducing symptoms and increasing a child's ability to grow and learn new skills, it is estimated that *only 50 percent of children are diagnosed before kindergarten.*

As Defined by the American Psychiatric Association –

(http://www.psych.org/public_info/child.cfm)

Children with autism, which strikes as many as five out of every 10,000 children, have a dramatically impaired ability to communicate and interact with others. The level of activity and range of interests of these children are also extremely limited. Autism is generally apparent by the time the child is 2½ years old. It is three times more common in boys than in girls.

As infants, children with autism don't cuddle and may even stiffen and resist affection. Many don't look at their caregivers and may react to all adults with the same indifference. On the other hand, some cling tenaciously to a specific individual. In either case, children with autism fail to develop normal relationships with anyone - not even their parents.

As they grow, these children also fail to develop friendships and generally prefer to play alone. Children with autism cannot communicate well because they never learn to talk, they don't understand what is said to them, or they speak a language all their own. Sometimes they may repeatedly say phrases or words they have heard in conversation or on television. Some also go through repetitive body movements such as twisting or flapping their hands and arms or banging their heads. Some children become preoccupied with parts of objects, or they may become extremely attached to an unusual object such as a piece of string or a rubber band. They become distressed when any part of their environment is changed. Likewise, these children insist on following rigid routines in precise detail.

As Defined by the Autism Society of America:

(<http://www.autism-society.org/>)

Autism is a severely incapacitating lifelong developmental disability that typically appears during the first three years of life. It occurs in approximately one out of every 250 births and is four times more common in boys than girls. It has been found throughout the world in families of all racial, ethnic and social backgrounds. No known factors in the psychological environment of a child have been shown to cause autism.

The symptoms are caused by physical disorders of the brain. They include:

- >Disturbances in the rate of appearance of physical, social and language skills.
- >Abnormal responses to sensations. Any one or a combination of senses or responses are affected: sight, hearing, touch, pain, balance, smell, taste, the way a child holds his body.
- >Speech and language are absent or delayed while specific thinking capabilities might be present.
- >Abnormal ways of relating to people, objects and events.

Autism occurs by itself or in association with other disorders which affect the function of the brain such as viral infections, metabolic disturbances, and epilepsy. It is important to distinguish autism from retardation or mental disorders since diagnostic confusion may result in referral to inappropriate and ineffective treatment techniques. The severe form of the syndrome may include extreme self-injurious, repetitive, highly unusual and aggressive behavior. Special educational programs using behavioral methods have proven to be the most helpful treatment.

Autism is treatable – Early diagnosis and intervention are vital to the future development of the child.

Diagnostic Features of Autism Spectrum Disorders from the DSM-IV:*

1. Autistic Disorder

The essential features of Autistic Disorder are the presence of markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests. Manifestations of the disorder vary greatly depending on the developmental level and chronological age of the individual.

2. Rett's Disorder

The essential feature of Rett's Disorder is the development of multiple specific deficits following a period of normal functioning after birth. Individuals have an apparently normal prenatal and perinatal period with normal psychomotor development through the first 5 months of life. Head circumference at birth is also within normal limits. Between ages 5 and 48 months, head growth decelerates. There is a loss of previously acquired purposeful hand skills between ages 5 and 30 months, with the subsequent development of characteristic stereotyped hand movements resembling hand-wringing or hand washing. Interest in the social environment diminishes in the first few years after the onset of the disorder, although social interaction may often develop later in the course. Problems develop in the coordination of gait or trunk movements. There is also severe impairment in expressive and receptive language development, with severe psychomotor retardation.

3. Childhood Disintegrative Disorder

The essential feature of Childhood Disintegrative Disorder is a marked regression in multiple areas of functioning following a period of at least 2 years of apparently normal development. Apparently normal development is reflected in ageappropriate verbal and nonverbal communication, social relationships, play, and adaptive behavior. After the first 2 years of life (but before age 10 years), the child has a clinically significant loss of previously acquired skills in at least two of the following areas: expressive or receptive language, social skills or adaptive behavior, bowel or bladder control, play, or motor skills. Individuals with this disorder exhibit the social and communicative deficits and behavioral features generally observed in Autistic Disorder. There is qualitative impairment in social interaction and in communication, and restricted, repetitive, and stereotyped patterns of behavior, interests, and activities. The disturbance is not better accounted for by another specific Pervasive Developmental Disorder or by Schizophrenia. This condition has also been termed *Heller's syndrome*, *dementia infantilis*, or *disintegrative psychosis*.

4. Asperger's Disorder

The essential features of Asperger's Disorder are severe and sustained impairment in social interaction and the development of restricted, repetitive patterns of behavior, interests, and activities. The disturbance must cause clinically significant impairment in social, occupational, or other important areas of functioning. In contrast to Autistic Disorder, there are no clinically significant delays in language (e.g., single words are used by age 2 years, communicative phrases are used by age 3 years). In addition, there are no clinically significant delays in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction), and curiosity about the environment in childhood. The diagnosis is not given if the criteria are met for any other specific Pervasive Developmental Disorder or for Schizophrenia.

*American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). DC: Author.

NOTE: For our purposes here, it will suffice to focus on Autism (and at times Asperger's Syndrome) as the basis for offering some basic info about Autism Spectrum Disorders.

***Definition of Autism as included in federal legislation for special education
(the Individuals with Disabilities Education Act -- IDEA)***

Children with Autism are eligible for special education resources under IDEA because they are defined as "Disabled." The term *child with a disability* means a child evaluated in accordance with federal regulations as having mental retardation, a hearing impairment including deafness, a speech or language impairment, a visual impairment including blindness, serious emotional disturbance (hereafter referred to as emotional disturbance), an orthopedic impairment, autism, traumatic brain injury, an other health impairment, a specific learning disability, deaf-blindness, or multiple disabilities, and who, by reason thereof, needs special education and related services.

In this context, *Autism* is defined as a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term does not apply if a child's educational performance is adversely affected primarily because the child has an emotional disturbance.

While the characteristics of "autism" are generally evident before age three, a child who manifests characteristics of the category "autism" after age three still can be evaluated as having autism, if the criteria in the above definition are satisfied.

From the Individual's with Disabilities Education Act (IDEA)

http://www.pattan.k12.pa.us/federalregister/html/Sec.300.7_Child%20with_a_disability.html

*B. What Causes Autism?
Summary of Theories on Causes*

Category	Name	Theory	Criticisms
Psycho-Biological Models - From: Volkmar et al., 2004	“Theory of Mind (ToM)” Models Baron-Cohen (1995)	Defines the social dysfunction in autism as the result of disruptions in processes leading to the acquisition of the capacity for conceiving of other people’s and one’s own mind.	the ToM hypothesis has been criticized in terms of the lack of specificity to autism, a degree of association between ToM skills and more general verbal and cognitive levels, and the notion that the successful teaching of ToM skills does not necessarily lead to advancement in real-life social competence.
	“Central Coherence” Models Frith (1989)	The ‘WeakCentralCoherence’ hypothesis (WCC), delineates an internal social world that is piecemeal and disjointed, lacking the overall lcoherence that defines social context and meaning.	The WCC hypothesis has been questioned on the basis of some conflictual experimental findings, and the as yet limited number of perceptual and cognitive domains studied from the WCC perspective that would evaluate more directly its implications for social processing.
	“Executive Function” Models Ozonoff (1997)	The Executive Dysfunction hypothesis (ED), defines general learning in autism as a process characterized by perseveration and poor self-regulation, which include difficulties with change, reduced forward planning, and ineffective problem-solving skills that lack in coordinated reasoning and ongoing adjustment to feedback.	The ED hypothesis has been criticized in terms of the lack of specificity to autism, possible social confounds involved in task administration, the overly encompassing range of neuropsychological phenomena involved, and its yet unproven relationship to degree of social disability.
Biomedical -From: NIMH	Immunological http://www.nih.gov/publicat/autism.cfm	Specific Vaccinations (Measels, Rubella) have been linked to incidence of ASDs	Research finds little evidence for a causal link.
Neuro-developmental -From: NIMH	“Growth Disregulation” hypothesis http://www.nih.gov/publicat/autism.cfm	The anatomical abnormalities seen in autism are caused by genetic defects in brain growth factors. It is possible that sudden, rapid head growth in an infant may be an early warning signal that will lead to early diagnosis and effective biological intervention or possible prevention of autism.	Awaiting further research...

Research on the Biological Basis of Autism Spectrum Disorders

From The National Institute of Mental Health

<http://www.nimh.nih.gov/healthinformation/autismmenu.cfm>

In the past few years, there has been public interest in a theory that suggested a link between the use of thimerosal, a mercury-based preservative used in the measles-mumps-rubella (MMR) vaccine, and autism. Although mercury is no longer found in childhood vaccines in the United States, some parents still have concerns about vaccinations. Many well-done, large-scale studies have now been done that have failed to show a link between thimerosal and autism. A panel from the Institute of Medicine is now examining these studies, including a large Danish study that concluded that there was no causal relationship between childhood vaccination using thimerosal-containing vaccines and the development of an autism spectrum disorder, and a U.S. study looking at exposure to mercury, lead, and other heavy metals.

Because of its relative inaccessibility, scientists have only recently been able to study the brain systematically. But with the emergence of new brain imaging tools – computerized tomography (CT), positron emission tomography (PET), single photon emission computed tomography (SPECT), and magnetic resonance imaging (MRI), study of the structure and the functioning of the brain can be done. With the aid of modern technology and the new availability of both normal and autism tissue samples to do postmortem studies, researchers will be able to learn much through comparative studies.

Postmortem and MRI studies have shown that many major brain structures are implicated in autism. This includes the cerebellum, cerebral cortex, limbic system, corpus callosum, basal ganglia, and brain stem. Other research is focusing on the role of neurotransmitters such as serotonin, dopamine, and epinephrine.

Research into the causes of autism spectrum disorders is being fueled by other recent developments. Evidence points to genetic factors playing a prominent role in the causes for ASD. Twin and family studies have suggested an underlying genetic vulnerability to ASD. To further research in this field, the Autism Genetic Resource Exchange, a project initiated by the Cure Autism Now Foundation, and aided by an NIMH grant, is recruiting genetic samples from several hundred families. Each family with more than one member diagnosed with ASD is given a 2-hour, in-home screening. With a large number of DNA samples, it is hoped that the most important genes will be found. This will enable scientists to learn what the culprit genes do and how they can go wrong.

Another exciting development is the Autism Tissue Program (<http://www.brainbank.org>), supported by the Autism Society of America Foundation, the Medical Investigation of Neurodevelopmental Disorders (M.I.N.D.) Institute at the University of California, Davis, and the National Alliance for Autism Research. The program is aided by a grant to the Harvard Brain and Tissue Resource Center (<http://www.brainbank.mclean.org>), funded by the National Institute of Mental Health (NIMH) and the National Institute of Neurological Disorders and Stroke (NINDS). Studies of the postmortem brain with imaging methods will help us learn why some brains are large, how the limbic system develops, and how the brain changes as it ages. Tissue samples can be stained and will show which neurotransmitters are being made in the cells and how they are transported and released to other cells. By focusing on specific brain regions and neurotransmitters, it will become easier to identify susceptibility genes.

Recent neuroimaging studies have shown that a contributing cause for autism may be abnormal brain development beginning in the infant's first months. This "growth dysregulation hypothesis" holds that the anatomical abnormalities seen in autism are caused by genetic defects in brain growth factors. It is possible that sudden, rapid head growth in an infant may be an early warning signal that will lead to early diagnosis and effective biological intervention or possible prevention of autism.

C. How is Autism Diagnosed

-From The National Institute of Mental Health
<http://www.nimh.nih.gov/healthinformation/autismmenu.cfm>

The following was prepared to inform parents.

Although there are many concerns about labeling a young child with an ASD (Autism Spectrum Disorder), the earlier the diagnosis of ASD is made, the earlier needed interventions can begin. Evidence over the last 15 years indicates that intensive early intervention in *optimal educational settings for at least 2 years during the preschool years* results in improved outcomes in most young children with ASD.

In evaluating a child, clinicians rely on behavioral characteristics to make a diagnosis. Some of the characteristic behaviors of ASD may be apparent in the first few months of a child's life, or they may appear at any time during the early years. For the diagnosis, problems in at least one of the areas of communication, socialization, or restricted behavior must be present before the age of 3. The diagnosis requires a two-stage process. The first stage involves developmental screening during "well child" check-ups; the second stage entails a comprehensive evaluation by a multidisciplinary team.

Screening

A "well child" check-up should include a developmental screening test. If your child's pediatrician does not routinely check your child with such a test, ask that it be done. Your own observations and concerns about your child's development will be essential in helping to screen your child. Reviewing family videotapes, photos, and baby albums can help parents remember when each behavior was first noticed and when the child reached certain developmental milestones.

Some screening instruments rely solely on parent responses to a questionnaire, and some rely on a combination of parent report and observation. Key items on these instruments that appear to differentiate children with autism from other groups before the age of 2 include pointing and pretend play. Screening instruments do not provide individual diagnosis but serve to assess the need for referral for possible diagnosis of ASD. These screening methods may not identify children with mild ASD, such as those with high-functioning autism or Asperger syndrome

If, following the screening process or during a routine "well child" check-up, your child's doctor sees any of the possible indicators of ASD, further evaluation is indicated.

Comprehensive Diagnostic Evaluation

The second stage of diagnosis must be comprehensive in order to accurately rule in or rule out an ASD or other developmental problem. This evaluation may be done by a multidisciplinary team that includes a psychologist, a neurologist, a psychiatrist, a speech therapist, or other professionals who diagnose children with ASD.

Customarily, an expert diagnostic team has the responsibility of thoroughly evaluating the child, assessing the child's unique strengths and weaknesses, and determining a formal diagnosis. The team will then meet with the parents to explain the results of the evaluation.

Although parents may have been aware that something was not "quite right" with their child, when the diagnosis is given, it is a devastating blow. At such a time, it is hard to stay focused on asking questions. But while members of the evaluation team are together is the best opportunity the parents will have to ask questions and get recommendations on what further steps they should take for their child. Learning as much as possible at this meeting is very important, but it is helpful to leave this meeting with the name or names of professionals who can be contacted if the parents have further questions.

Other Diagnostic Tools

(<http://www.nimh.nih.gov/Publicat/autism.cfm>)

Because ASD's are complex disorders and may involve other neurological or genetic problems, a comprehensive evaluation should entail neurologic and genetic assessment, along with in-depth cognitive and language testing. In addition, measures developed specifically for diagnosing autism are often used. These include the Autism Diagnosis Interview-Revised (ADI-R) and the Autism Diagnostic Observation Schedule (ADOS-G). The ADI-R is a structured interview that contains over 100 items and is conducted with a caregiver. It consists of four main factors – the child's communication, social interaction, repetitive behaviors, and age-of-onset symptoms. The ADOS-G is an observational measure used to "press" for socio-communicative behaviors that are often delayed, abnormal, or absent in children with ASD.

Still another instrument often used by professionals is the Childhood Autism Rating Scale (CARS). It aids in evaluating the child's body movements, adaptation to change, listening response, verbal communication, and relationship to people. It is suitable for use with children over 2 years of age. The examiner observes the child and also obtains relevant information from the parents. The child's behavior is rated on a scale based on deviation from the typical behavior of children of the same age.

Two other tests that should be used to assess any child with a developmental delay are a formal audiologic hearing evaluation and a lead screening. Although some hearing loss can co-occur with ASD, some children with ASD may be incorrectly thought to have such a loss. In addition, if the child has suffered from an ear infection, transient hearing loss can occur. Lead screening is essential for children who remain for a long period of time in the oral-motor stage in which they put any and everything into their mouths. Children with an autistic disorder usually have elevated blood lead levels.

The following is from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM IV):

DIAGNOSTIC CRITERIA FOR 299.00 AUTISTIC DISORDER

A. A total of six (or more) items from (1), (2), and (3), with at least two from (1), and one each from (2) and (3)

(1) qualitative impairment in social interaction, as manifested by at least two of the following:

- a) marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction
- b) failure to develop peer relationships appropriate to developmental level
- c) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people, (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
- d) lack of social or emotional reciprocity (note: in the description, it gives the following as examples: not actively participating in simple social play or games, preferring solitary activities, or involving others in activities only as tools or "mechanical" aids)

(2) qualitative impairments in communication as manifested by at least one of the following:

- a) delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
- b) in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
- c) stereotyped and repetitive use of language or idiosyncratic language
- d) lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(3) restricted repetitive and stereotyped patterns of behavior, interests and activities, as manifested by at least two of the following:

- a) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
- b) apparently inflexible adherence to specific, nonfunctional routines or rituals
- c) stereotyped and repetitive motor mannerisms (e.g hand or finger flapping or twisting, or complex whole-body movements)
- d) persistent preoccupation with parts of objects

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years:

- (1) social interaction**
- (2) language as used in social communication**
- (3) symbolic or imaginative play**

C. The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder

The following is from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM IV):

DIAGNOSTIC CRITERIA FOR 299.80 ASPERGER'S DISORDER

A. Qualitative impairment in social interaction, as manifested by at least two of the following:

- (1) marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction
- (2) failure to develop peer relationships appropriate to developmental level
- (3) a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
- (4) lack of social or emotional reciprocity

B. Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:

- (1) encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
- (2) apparently inflexible adherence to specific, nonfunctional routines or rituals
- (3) stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole-body movements)
- (4) persistent, preoccupation with parts of objects

C. The disturbance causes clinically significant impairment in social, occupational, or other important areas of functioning.

D. There is no clinically significant general delay in language (e.g., single words used by age 2 years, communicative phrases used by age 3 years).

E. There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior (other than in social interaction), and curiosity about the environment in childhood.

F. Criteria are not met for another specific Pervasive Developmental Disorder of Schizophrenia.

Some Common Screening/Diagnostic Tools

Type	Purpose	Name
Screening	Social-Communicative Ability	Checklist of Autism in Toddlers (CHAT),
		Checklist for Autism in Toddlers (M-CHAT)
		Screening Tool for Autism in Two-Year-Olds (STAT),
	General Developmental Delay	Audiologic hearing evaluation
		Social Communication Questionnaire (SCQ)
	Possible Prevalence of ASDs	Autism Spectrum Screening Questionnaire (ASSQ)
		Australian Scale for Asperger's Syndrome
		Childhood Asperger Syndrome Test (CAST)
		Lead screening (with an autistic disorder usually have elevated blood lead levels)
Diagnosis	Formal Diagnosis of ASDs	Autism Diagnosis Interview-Revised (ADI-R) -Contains over 100 items and is conducted with a caregiver. It consists of four main factors—the child's communication, social interaction, repetitive behaviors, and age-of-onset symptoms.
		Diagnostic Observation Schedule (ADOS-G) -An observational measure used to "press" for socio-communicative behaviors that are often delayed, abnormal, or absent in children with ASD.
		Childhood Autism Rating Scale (CARS). -aids in evaluating the child's body movements, adaptation to change, listening response, verbal communication, and relationship to people. It is suitable for use with children over 2 years of age
		Diagnostic and Statistical Manual of Mental Disorders , Fourth Edition. (DSM-IV).

An excerpt from:

Mental Health in the United States: Parental Report of Diagnosed Autism in Children Aged 4–17 years — United States, 2003–2004

(<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5517a3.htm>)

Autism is a lifelong neurodevelopmental disorder characterized by early onset of impairments in social interaction and communication and unusual, stereotyped behaviors. Autism (i.e., autistic disorder) often is classified with two related, although less severe, developmental disorders: Asperger disorder and pervasive developmental disorder--not otherwise specified. These three constitute the autism spectrum disorders (ASDs). Diagnosis of ASDs is based exclusively on developmental pattern and behavioral observation.

Two population-based studies conducted by CDC in selected U.S. locations reported ASD prevalence of 3.4 and 6.7 per 1,000 children, respectively (1,2). CDC also conducts two nationally representative surveys, the National Health Interview Survey (NHIS) and the National Survey of Children's Health (NSCH), in which parents are asked whether their child ever received a diagnosis of autism.

Because of similarities in methodology used by the two surveys, CDC analyzed 2003--2004 data from NHIS and data from the first-ever NSCH (collected during January 2003--July 2004) to 1) estimate the population-based prevalence of parental report of diagnosed autism in the United States and 2) assess parental reporting of child social, emotional, and behavioral strengths and difficulties and special-health care needs among children with and without reported autism.

This report describes the results of that analysis, which indicated that the prevalence of parent-reported diagnosis of autism was 5.7 per 1,000 children in NHIS and 5.5 per 1,000 children in NSCH. Prevalence estimates in the two studies were similar across age, sex, and racial/ethnic populations. The consistency in estimates between the two surveys suggests high reliability for parental report of autism.

These estimates suggest that, as of 2003--2004, autism had been diagnosed in at least 300,000 U.S. children aged 4--17 years. In addition, parental reports of autism were associated with reported social, emotional, and behavioral symptoms and specialized needs. Thus, these surveys might be useful to assess health, education, and social service needs of children with autism.

II. Treatment

A. About Treatment Options

B. How to Seek Treatment for a Child with Autism

C. Examples of Treatments Used

D. About Treatment Efficacy and Research

A. About Treatment Options

From: *Autism Spectrum Disorders (Pervasive Developmental Disorders)* – a detailed booklet that describes symptoms, causes, and treatments, with information on getting help and coping. Published in 2004 by the **National Institute for Mental Health (NIMH)**

There is no single best treatment package for all children with ASD. One point that most professionals agree on is that early intervention is important; another is that most individuals with ASD respond well to highly structured, specialized programs.

Before you make decisions on your child's treatment, you will want to gather information about the various options available. Learn as much as you can, look at all the options, and make your decision on your child's treatment based on your child's needs. You may want to visit public schools in your area to see the type of program they offer to special needs children.

Guidelines used by the Autism Society of America include the following questions parents can ask about potential treatments:

- Will the treatment result in harm to my child?
- How will failure of the treatment affect my child and family?
- Has the treatment been validated scientifically?
- Are there assessment procedures specified?
- How will the treatment be integrated into my child's current program? Do not become so infatuated with a given treatment that functional curriculum, vocational life, and social skills are ignored.

The National Institute of Mental Health suggests a list of questions parents can ask when planning for their child:

- How successful has the program been for other children?
- How many children have gone on to placement in a regular school and how have they performed?
- Do staff members have training and experience in working with children and adolescents with autism?
- How are activities planned and organized?
- Are there predictable daily schedules and routines?
- How much individual attention will my child receive?
- How is progress measured? Will my child's behavior be closely observed and recorded?
- Will my child be given tasks and rewards that are personally motivating?
- Is the environment designed to minimize distractions?
- Will the program prepare me to continue the therapy at home?
- What is the cost, time commitment, and location of the program?

(Cont.)

Among the many methods available for treatment and education of people with autism, applied behavior analysis (ABA) has become widely accepted as an effective treatment. *Mental Health: A Report of the Surgeon General* states, "Thirty years of research demonstrated the efficacy of applied behavioral methods in reducing inappropriate behavior and in increasing communication, learning, and appropriate social behavior." The basic research done by Ivar Lovaas and his colleagues at the University of California, Los Angeles, calling for an intensive, one-on-one child-teacher interaction for 40 hours a week, laid a foundation for other educators and researchers in the search for further effective early interventions to help those with ASD attain their potential. The goal of behavioral management is to reinforce desirable behaviors and reduce undesirable ones.

An effective treatment program will build on the child's interests, offer a predictable schedule, teach tasks as a series of simple steps, actively engage the child's attention in highly structured activities, and provide regular reinforcement of behavior. Parental involvement has emerged as a major factor in treatment success. Parents work with teachers and therapists to identify the behaviors to be changed and the skills to be taught. Recognizing that parents are the child's earliest teachers, more programs are beginning to train parents to continue the therapy at home.

As soon as a child's disability has been identified, instruction should begin. Effective programs will teach early communication and social interaction skills. In children younger than 3 years, appropriate interventions usually take place in the home or a child care center. These interventions target specific deficits in learning, language, imitation, attention, motivation, compliance, and initiative of interaction. Included are behavioral methods, communication, occupational and physical therapy along with social play interventions. Often the day will begin with a physical activity to help develop coordination and body awareness; children string beads, piece puzzles together, paint, and participate in other motor skills activities. At snack time the teacher encourages social interaction and models how to use language to ask for more juice. The children learn by doing. Working with the children are students, behavioral therapists, and parents who have received extensive training. In teaching the children, positive reinforcement is used.

Children older than 3 years usually have school-based, individualized, special education. The child may be in a segregated class with other autistic children or in an integrated class with children without disabilities for at least part of the day. Different localities may use differing methods but all should provide a structure that will help the children learn social skills and functional communication. In these programs, teachers often involve the parents, giving useful advice in how to help their child use the skills or behaviors learned at school when they are at home.

In elementary school, the child should receive help in any skill area that is delayed and, at the same time, be encouraged to grow in his or her areas of strength. Ideally, the curriculum should be adapted to the individual child's needs. Many schools today have an inclusion program in which the child is in a regular classroom for most of the day, with special instruction for a part of the day. This instruction should include such skills as learning how to act in social situations and in making friends. Although higher-functioning children may be able to handle academic work, they too need help to organize tasks and avoid distractions.

During middle and high school years, instruction will begin to address such practical matters as work, community living, and recreational activities. This should include work experience, using public transportation, and learning skills that will be important in community living. All through your child's school years, you will want to be an active participant in his or her education program. Collaboration between parents and educators is essential in evaluating your child's progress.

B. *How to Seek Treatment for a Child with Autism*

- From the National Institute for Mental Health (NIMH)

<http://www.nimh.nih.gov/publicat/autism.cfm#intro>

When your child has been evaluated and diagnosed with an autism spectrum disorder, you may feel inadequate to help your child develop to the fullest extent of his or her ability. As you begin to look at treatment options and at the types of aid available for a child with a disability, you will find out that there is help for you. It is going to be difficult to learn and remember everything you need to know about the resources that will be most helpful. *Write down everything.* If you keep a notebook, you will have a foolproof method of recalling information. Keep a record of the doctors' reports and the evaluation your child has been given so that his or her eligibility for special programs will be documented. Learn everything you can about special programs for your child; the more you know, the more effectively you can advocate.

For every child eligible for special programs, each state guarantees special education and related services. The Individuals with Disabilities Education Act (IDEA) is a Federally mandated program that assures a free and appropriate public education for children with diagnosed learning deficits. Usually children are placed in public schools and the school district pays for all necessary services. These will include, as needed, services by a speech therapist, occupational therapist, school psychologist, social worker, school nurse, or aide.

By law, the public schools must prepare and carry out a set of instruction goals, or specific skills, for every child in a special education program. The list of skills is known as the child's Individualized Education Program (IEP). The IEP is an agreement between the school and the family on the child's goals. When your child's IEP is developed, you will be asked to attend the meeting. There will be several people at this meeting, including a special education teacher, a representative of the public schools who is knowledgeable about the program, other individuals invited by the school or by you (you may want to bring a relative, a child care provider, or a supportive close friend who knows your child well). Parents play an important part in creating the program, as they know their child and his or her needs best. Once your child's IEP is developed, a meeting is scheduled once a year to review your child's progress and to make any alterations to reflect his or her changing needs.

If your child is under 3 years of age and has special needs, he or she should be eligible for an early intervention program; this program is available in every state. Each state decides which agency will be the lead agency in the early intervention program. The early intervention services are provided by workers qualified to care for toddlers with disabilities and are usually in the child's home or a place familiar to the child. The services provided are written into an Individualized Family Service Plan (IFSP) that is reviewed at least once every 6 months. The plan will describe services that will be provided to the child, but will also describe services for parents to help them in daily activities with their child and for siblings to help them adjust to having a brother or sister with ASD.

What to do if your child was just diagnosed with an ASD

-From Autism Resources (<http://www.autism-resources.com>)

Some Things To Do

- Make certain that the determination that your child is autistic was made or verified by a professional who has experience with autistics.
- Talk to other parents of autistic children (see paragraph below on organizations).

Books

Michael Powers's *Children With Autism: A Parent's Guide* has a good reputation, but there are some newer books aimed at parents. Another book with a good reputation is Elizabeth K. Gerlach's *Autism Treatment Guide* from Four Leaf Press. There are a number of books describing parents' experiences with autism and though some may be slanted a particular kind of treatment, probably all have value in allowing you to share the experience of other parents. Catherine Maurice's *Let Me Hear Your Voice* is one example.

Treatment & programs

Every treatment for autism has its detractors and none has proven to benefit every case. Thus, the task of judging the effectiveness of potential treatments will ultimately fall on you--to a larger extent than you will feel qualified to make. If the professional to whom you take your child strongly recommends some program or treatment, know that there are others who will recommend some other just as strongly. Note that many programs are made up from parts of several methods.

Organizations

In the USA, the national society is the Autism Society of America (ASA). It has local and state chapters, so it may help you to find a local support group. Another organization of value is the Autism Research Institute (ARI), which includes publications.

Things to watch out for

- Miracle cures and people who tell you that their way is your child's only hope.
- People who think your child's autism is an emotional disturbance or is your fault.
- Teachers, therapists, social workers, etc. working from outdated information.

C. Examples of Treatments Used

-Excerpted from Autism Resources

(www.autism-resources.com/autismfaq-trea.html)

Below are listed some approaches used in treating Autistic Spectrum Disorders (ASDs). This list is not exhaustive, and some of the approaches cited are controversial. The table is simply meant to be illustrative of the variety of interventions in use. *No endorsement is intended.*

<i>Treatment Category</i>	<i>Treatment</i>	<i>Treatment Description</i>
<i>Biomedical:</i> usually medical or dietary approaches to treatment.	Eliminating dietary gluten/casein	Gluten intolerance is generally indicated by loose stools and/or a craving for bread and pasta. Eliminating Dietary Gluten seems to reduce autistic spectrum symptoms in some children
	Dimethylglycine (DMG)	Bernard Rimland pursued this line of investigation. Suggestions are that it sometimes helps autistics with speech & with their attention span. DMG does not require a prescription in the US, being considered a food supplement.
	Fenfluramine	Decreases blood serotonin concentrations. Some autistics have abnormally high blood serotonin concentrations. Some success was reported by Dr. Edward R. Ritvo.
	Desipramine, Anafranil (cloripramine)	Tricyclic antidepressants that may relieve some symptoms of autism.
	SRRRI "Selective Serotonin Reuptake Inhibitor"	A class of psychoactive drugs that includes Prozac, Zoloft, Luvox, and Paxil (paroxetine), part of a larger class of such drugs that also includes non-selective serotonin reuptake inhibitors. Serotonin is a brain chemical released by neurons and "reuptaken" by neurons.
	Risperdol (risperidone)	Anti-dopamine agent which also works against serotonin. A neuroleptic.
<i>Biomedical:</i> usually medical or dietary approaches to treatment.	Tegretol	Drug used to prevent seizures, also sometimes used for autistic symptoms.
<i>Biomedical:</i> usually medical or dietary approaches to treatment.	Intravenous Gamma Globulin (IVIgG)	A treatment for autism based upon theory that autism can be caused by an autoimmune condition in the brain. The treatment is generally confined to patients who show a positive response to Myelin Basic Protein, a protein component of brain myelin.
<i>Neurosensory:</i> Approaches focused on the neurological or sensory deficiencies expressed by those with ASDs.	Doman-Delacatto	brain stimulation activities for brain-injured children developed by Glenn Doman and Carl Delacatto. It involves cross-patterning, patterning and sensory exercises developed to enhance memory and processing.

	Irlen Lenses	Developed to treat dyslexia and other learning disabilities, the use of coloured lenses to treat the visual processing difficulties of people with autism is relatively new (1994). It has been popularized by Donna Williams (author of <i>Nobody Nowhere</i> and <i>Somebody Somewhere</i>).
	Auditory Integration Training (AIT)	A method of changing a person's sensitivity to sound at different frequencies. It was originally developed to combat the onset of some kinds of deafness, but was tried on an autistic child and cured her. Since then it has not produced any cures, but has been credited with success in reducing some of the symptoms of some children. In particular, some autistic children show a strong aversion to some sounds, and with Auditory Integration Training have lost their aversion and exhibited other reductions in the symptoms of autism. There are two methods of AIT, the Tomatis and the Berrard. They are different enough that they should perhaps be considered different therapies.
	Tomatis Method	A kind of AIT developed by Alfred Tomatis. Over several weeks, the person listens to classical music with the low frequencies filtered out. Over time, voices (also filtered) are introduced, then the missing frequencies. Treatment requires weeks, typically 2 hours of listening a day.
Neurosensory: Approaches focused on the neurological or sensory deficiencies expressed by those with ASDs.	Sensory Integration Therapy (SIT)	A method of helping people who are hypersensitive to the 5 senses by overwhelming them with sensory experiences, e.g. swing them, roll them, get them jumping and spinning. Usually provided by occupational therapists who have learned the method.
Behavioral/Psychological: Therapy or learning trial based approaches.	Behavioral Therapy (Lovaas Method)	(also "Lovaas Method", "Behavioral Intervention", "Applied Behavioral Analysis" (ABA), "Discrete Trial Training" (DTT)). Use of behavior modification (a.k.a. operant conditioning) which was originally developed by Behavioral Psychology outside the purview of autism. Lovaas and other psychologists adapted it as a therapy/educational method for autistic children, and it is his adaptation which is known as <i>The Lovaas Method</i> or DTT.
	Natural Language Paradigm (NLP) or Pivotal Response Training (PRT)	Another behavior intervention, with differences. A source of information on it is Koegel & Koegel's book.
	Social skills training and social stories	Teaching verbal individuals many of the unwritten social rules and body language signals that people use in social interaction and conversation. "Social stories" help illustrate these social rules in a variety of situations and appropriate responses. Social stories and "scripting" are also used with nonverbal individuals to teach appropriate responses and prepare the individual for transitions. They may be in the form of photographs or pictures.

D. About Treatment Efficacy and Research

Both psychosocial and pharmacological interventions can improve the behavioral and cognitive functioning of individuals with ASDs.⁴² The increasing use of psychotropic medications to treat symptoms of autism and other childhood-onset psychiatric disorders has spotlighted an urgent need for more studies of such drugs in children. To meet this need, NIMH established a network of Research Units on Pediatric Psychopharmacology (RUPPs) in 1997 that combined expertise in psychopharmacology and psychiatry at several research sites. The network was expanded to include psychosocial interventions with the funding of additional network projects called the RUPP-PI (Research Units on Pediatric Psychopharmacology and Psychosocial Interventions) network. The RUPP and RUPP-PI networks are intended to become a national resource that will expedite clinical trials in children.^{43,44,45} They include five groups specifically funded to evaluate treatments for autism. Studies are examining dose range and regimen of medications, and their mechanisms of action, safety, efficacy, and effects on cognition, behavior, and development. The RUPP network is nearing completion of a study examining the efficacy of methylphenidate for treating hyperactivity and impulsivity in children and adolescents with a variety of behavioral disorders. In one recent study, risperidone, one of a newer class of anti-psychotic medications, was successful and well tolerated for the treatment of serious behavioral disturbance in children with autism aged 5-17.⁴⁶

The RUPP-PI network has launched a multi-site study investigating the effect of combined parent training and medication treatment on disruptive behavior in children with autism spectrum disorders. The study will test whether adding a program to teach parents behavior management techniques to a regimen of risperidone will add to treatment response and/or maintain treatment effects after discontinuation of the medication.^{47,48,49}

Among other studies of psychosocial treatments in autism, two NIMH-funded research teams are evaluating parent training interventions that are tailored to the particular characteristics of the child and family. The investigators have demonstrated that an individualized approach enhances the effectiveness of their Pivotal Response Model, and that this, in turn, leads to positive changes in parents' confidence and feelings of empowerment.^{50,51,52} The investigators are continuing their line of research on interventions development with a study investigating the efficacy of visual augmentation strategies for teaching communication skills to nonverbal children with autism.^{53,54,55}

The NIH Autism Coordinating Committee (NIH/ACC) coordinates efforts of NIMH, NICHD, NINDS, NIDCD, and NIEHS to facilitate research on interventions for individuals with autism and autism spectrum disorders. In November 2000, six grants were funded in response to an RFA (Request for Applications)⁵⁶ for innovative methods and feasibility studies. These projects included behavioral and pharmacological treatments and are nearing completion. The STAART Centers funded in 2002 and 2003 (described above) include eight treatment projects that are in development or underway. Foci of the intervention projects include efficacy of early interventions, efficacy of treatments for social deficits, efficacy trials for pharmacotherapy, and understanding the variability of response to treatments. Through these and other initiatives, the Institutes hope to encourage multi-disciplinary partnerships to develop and improve treatments for individuals with autism spectrum disorders.

42. Bristol MM, Cohen DJ, Costello EJ, Denckla M, Eckberg TJ, Kallen R, Kraemer HC, Lord C, Maurer R, McIlvane WJ, Minshew N, Sigman M, Spence MA. State of the science in autism: report to the National Institutes Health. *Journal of Autism and Developmental Disorders*, 1996; 26(2): 121-54.
43. Greenhill LL, Vitiello B, Abikoff H, Levine J, March JS, Riddle MA, Capasso L, Cooper TB, Davies M, Fisher P, Findling RL, Fried J, Labellarte MJ, McCracken JT, McMahon D, Robinson J, Skrobala A, Scahill L, Varipatis E, Walkup JT, Zito JM. Developing methodologies for monitoring long-term safety of psychotropic medications in children: Report on the NIMH conference, September 25, 2000. *Journal of the American Academy of Child & Adolescent Psychiatry*, 2003; 42(6): 625-26.
44. McDougle CJ, Scahill L, McCracken JT, Aman MG, Tierney E, Arnold E, Freeman BJ, Marin A, McGough JJ, Cronin P, Posey DJ, Riddle MA, Ritz L, Swiezy NB, Vitiello B, Bolkmar FR, Botolato NA, Walson P. Research Units on Pediatric Psychopharmacology (RUPP) Autism Network: Background and rationale for an initial controlled study of risperidone, *Child & Adolescent Psychiatric Clinics of North America*, 2000; 9(1): 201-24.
45. Arnold LE, Aman MG, Martin A, Collier-Crespin A, Vitiello B, Tierney E, Asarnow R, Bell-Bradshaw F, Freeman BJ, Gates-Ulanet P, Klin A, McCracken JT, McDougle CJ, McGough JJ, Posey DJ, Scahill L, Swiezy NB, Ritz L, Volkmar F. Assessment in multisite randomized clinical trials of patients with autistic disorder: The Autism RUPP Network. *Journal of Autism & Developmental Disorders*, 2000; 30(2): 99-111.
46. McCracken JT, McGough J, Shah B, Cronin P, Hong D, Aman MG, Arnold E, Lindsay R, Nash P, Hollway J, McDougle CJ, Posey D, Swiezy N, Kohn A, Scahill L, Martin A, Koenig K, Volkmar F, Carroll D, Lancor A, Tierney E, Ghuman J, Gonzalez NM, Grados M, Vitiello B, Ritz L, Davies M, Robinson J, McMahon D. Risperidone in children with autism and serious behavioral problems. *New England Journal of Medicine*, 2002; 347(5): 314-21.
47. Aman, M. The OSU RUPP-PI Project. Grant No. U10MH66768. In progress.
48. McDougle, C. RUPP-PI at Indiana University School of Medicine. Grant No. U10MH66766. In progress.
49. Scahill, L. RUPP-PI Program at Yale University. Grant No. U10MH66764. In progress.
50. Koegel LK, Koegel RL, Jarrower JK, Carter CM. Pivotal response intervention I: Overview of approach. *Journal of the Association for the Severely Handicapped*, 1999; 24: 174-85.
51. Koegel LK, Koegel RL, Shoshan Y, McNeerney E. Pivotal response intervention II: Preliminary long-term outcome data. *Journal of the Association for Persons with Severe Handicaps*, 1999; 24:186-98.
52. Koegel RL, Brookman L, Koegel LK. Autism: Pivotal response intervention and parent empowerment. *Trends in Evidence-Based Neuropsychiatry*, 2003; 5(1): 53-61.
53. Koegel R. Research in autism: Parent intervention. Grant No. R10MH28210-22. In progress.
54. Schreibman L. Research in autism: Parent Intervention. Grant No. R10MH39434-14. In progress.
55. Whalen C, Schreibman L. Joint attention training for children with autism using behaviour modification procedures. *The Journal of Child Psychology and Psychiatry*, 2003; 44, 456-468.
56. Development of innovative treatment approaches to autism. <http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-01-010.html>

The Children's Health Act of 2000

The Children's Health Act of 2000 was responsible for the creation of the Interagency Autism Coordinating Committee (IACC), a committee that includes the directors of five NIH institutes – the National Institute of Mental Health, the National Institute of Neurological Disorders and Stroke, the National Institute on Deafness and Other Communication Disorders (NIDCD), the National Institute of Child Health and Human Development (NICHD), and the National Institute of Environmental Health Sciences (NIEHS) – as well as representatives from the Health Resource Services Administration, the National Center on Birth Defects and Developmental Disabilities (a part of the Centers for Disease Control), the Agency for Toxic Substances and Disease Registry, the Substance Abuse and Mental Health Services Administration, the Administration on Developmental Disabilities, the Centers for Medicare and Medicaid Services, the U.S. Food and Drug Administration, and the U.S. Department of Education. The Committee, instructed by the Congress to develop a 10-year agenda for autism research, introduced the plan, dubbed a "matrix" or a "roadmap," at the first Autism Summit Conference in November 2003. The roadmap indicates priorities for research for years 1 to 3, years 4 to 6, and years 7 to 10.

The five NIH institutes of the IACC have established the Studies to Advance Autism Research and Treatment (STAART) Network, composed of eight network centers. They will conduct research in the fields of developmental neurobiology, genetics, and psychopharmacology. Each center is pursuing its own particular mix of studies, but there also will be multi-site clinical trials within the STAART network.

The STAART centers are located at the following sites:

- University of North Carolina, Chapel Hill
- Yale University, Connecticut
- University of Washington, Seattle
- University of California, Los Angeles
- Mount Sinai Medical School, New York
- Kennedy Krieger Institute, Maryland
- Boston University, Massachusetts
- University of Rochester, New York

A data coordination center will analyze the data generated by both the STAART network and the Collaborative Programs of Excellence in Autism (CPEA). This latter program, funded by the NICHD and the NIDCD Network on the Neurobiology and Genetics of Autism, consists of 10 sites. The CPEA is at present studying the world's largest group of well-diagnosed individuals with autism characterized by genetic and developmental profiles.

The CPEA centers are located at:

- Boston University, Massachusetts
- University of California, Davis
- University of California, Irvine
- University of California, Los Angeles
- Yale University, Connecticut
- University of Washington, Seattle
- University of Rochester, New York
- University of Texas, Houston
- University of Pittsburgh, Pennsylvania
- University of Utah, Salt Lake City

The NIEHS has programs at:

- Center for Childhood Neurotoxicology and Assessment, University of Medicine & Dentistry, New Jersey
- The Center for the Study of Environmental Factors in the Etiology of Autism, University of California, Davis

III. The School's Role

A. Educating Children with Autism

B. About the School's Role

*C. Strategies for Classroom Inclusion of
Autistic Individuals*

A. Educating Children with Autism

“Children with autism are challenged by the most essential human behaviors. They have difficulty interacting with other people-often failing to see people as people rather than simply objects in their environment. They cannot easily communicate ideas and feelings, have great trouble imagining what others think or feel, and in some cases spend their lives speechless. They frequently find it hard to make friends or even bond with family members. Their behavior can seem bizarre.

Education is the primary form of treatment for this mysterious condition. This means that we place important responsibilities on schools, teachers and children's parents, as well as the other professionals who work with children with autism. With the passage of the Individuals with Disabilities Education Act of 1975, we accepted responsibility for educating children who face special challenges like autism. While we have since amassed a substantial body of research, researchers have not adequately communicated with one another, and their findings have not been integrated into a proven curriculum”

Committee on Educational Interventions for Children with Autism, National Research Council (2001)

Because children with autism present educators with one of their most difficult challenges, in 2001, the National Academy of Sciences published a book prepared by the Committee on Educational Interventions for Children with Autism, National Research Council entitled: *Educating Children with Autism*.

“Through a comprehensive examination of the scientific knowledge underlying educational practices, programs, and strategies, *Educating Children with Autism* presents valuable information for parents, administrators, advocates, researchers, and policy makers.

The work outlines an interdisciplinary approach to education for children with autism. The committee explores what makes education effective for the child with autism and identifies specific characteristics of programs that work. Recommendations are offered for choosing educational content and strategies, introducing interaction with other children, and other key areas.

This book examines some fundamental issues, including:

- How children's specific diagnoses should affect educational assessment and planning
- How we can support the families of children with autism
- Features of effective instructional and comprehensive programs and strategies
- How we can better prepare teachers, school staffs, professionals, and parents to educate children with autism
- What policies at the federal, state, and local levels will best ensure appropriate education, examining strategies and resources needed to address the rights of children with autism to appropriate education.

B. *About the School's Role*

[Excerpted from "Best practices for designing and delivering effective programs for individuals with autism spectrum disorders -- recommendations of the collaborative work group on autistic spectrum disorders". Sponsored by the California Departments of Education and Developmental Services. July 1997.]

In California, all pupils, including those with autism, require access to the school district's core curriculum. Children with autism require disability-specific adaptations and modifications to access the district's core curriculum. Curriculum modifications, along with age-level expectations and IEP goals and objectives, form the basis for effective program planning.

Curriculum

Programs that appear to result in growth in areas such as social engagement, language, coping, and reduction of difficult behaviors have the following characteristics:

- Applied behavioral analysis is usually needed to assist a child to gain skills and reduce negative or undesirable behaviors.
- An individualized approach is used to select a developmentally appropriate method and level of program.
- The curriculum is organized around normal developmental expectations.
- A highly structured and neatly organized, controlled environment is used.
- Data are recorded to monitor progress and to troubleshoot.
- A formalized assessment of skills (cognitive, language, socialization, adaptive behavior, fine and gross motor, and play) is conducted at regular intervals.
- Generalization and maintenance of skills are built into the program.
- Mainstreaming opportunities with typically developing peers are built into the program.
- Parent training and family support are used.
- Education about options for intervention is provided.
- Training is culturally acceptable to individual families.
- Collaboration of all team members is used.
- Related services are included (i.e., speech, occupational therapy, adapted physical therapy, and/or augmentative communication).
- Ongoing teacher/therapist training is included. Consider what new and experienced personnel need to know.
- Transitional support is provided when the child leaves one program and moves to the next.

Environment

Environmental influences on individuals with ASD are of great importance. The school must make a conscious effort to carefully analyze the student and his or her environment as an ongoing component of the instructional process. The team and teacher should take the following physical environmental considerations into account when implementing the IEP/IFSP:

- Physical layout of the classroom with visually clear areas and boundaries;
- Selected work areas that best lend themselves to that being taught (e.g., reading may need to be taught in an area that uses natural light if high frequency sounds distract the individual);
- Boundaries needed by the student (e.g., reading may need to be taught consistently on a designated carpet);
- Specific schedules that allow the student to anticipate and predict activities;
- Individual work systems that convey:
 - What work is to be done
 - How much work is to be done
 - How the student will know when he/she is finished
 - What happens after the work is completed
- Visual organization of instruction to allow the individual to use the visual learning modality, which is often stronger than auditory; and
- Routines that allow the student to carry out the task in a systematic and consistent manner.

Plan Implementation

In planning appropriate educational and intervention programs that meet the unique needs of students with ASD, it is vital to use information and assessment data from many reliable resources. The assessment will yield current levels of functioning. Although all domains need to be considered, the unique profile of the individual with ASD calls for emphasis in the areas of communication skills, social-emotional, behavioral, and sensory regulation.

C. Strategies for Classroom Inclusion of Autistic Individuals

From: Harrower, J. K., Dunlap, G. (2001). Including children with autism in general education classrooms. Behavior Modification, 25, 762-784.

As has been widely noted, autism is a highly heterogeneous disability with regard to level of functioning (G. Dunlap & Bunton-Pierce, 1999; Gillberg, 1999; Koegel, Valdez-Menchaca, Koegel, & Harrower, 2001). Thus, the level and intensity of supports required for a given student with autism will depend largely on the characteristics of the student's functioning (Harrower & Dunlap, 2001).

<i>Category</i>	<i>Specific Techniques</i>	<i>Performance</i>
<p>Antecedent Procedures: By modifying discriminative stimuli for both appropriate and inappropriate behavior, antecedent procedures can be designed to prevent and reduce challenging behavior.</p>	<p>Priming Techniques: Priming consists of previewing information or activities that a child is likely to have difficulties with before the child actually engages in that activity (Wilde, Koegel, & Koegel, 1992).</p>	<p>Priming has been shown to be effective in increasing the initiations of social interaction with typical peers (Zanolli, Daggett, & Adams, 1996).</p>
	<p>Prompt Delivery: Using various prompting strategies is important in facilitating the inclusion of students with autism...they may not respond to traditional instructions delivered in general education classrooms.</p>	<p>Prompting strategies have been documented to improve outcomes for students with autism in inclusive classrooms (Taylor and Levin, 1998; Sainato, Strain, Lefebvre, and Rapp, 1987).</p>
	<p>Picture Schedules Picture schedules are often used as a strategy increasing predictability and as an alternative to verbal and written instruction.</p>	<p>Studies on the usage of Picture Schedules have shown encouraging results (Hall, McClannahan, and Krantz, 1995).</p>
<p>Delayed Contingencies: Instruction using delayed or unpredictable contingencies can facilitate the generalization of behavior in the absence of direct supervision</p>	<p>No Specific Techniques Distinguished</p>	<p>Studies on the usage of delayed contingencies to increase appropriate behavior without supervision (G. Dunlap & Johnson, 1985; G. Dunlap, Koegel, et al., 1987).</p>

<p>Self-Management Strategies: Self-management consists of teaching the student to (a) discriminate between appropriate and inappropriate behaviors, (b) evaluate her or his own behavior, (c) monitor her or his behavior over time, and (d) reinforce her or his behavior when pre-specified criteria are met.</p>	<p>No Specific Techniques Distinguished</p>	<p>Self-management has been documented to be an effective strategy for a variety of target behaviors. (Koegel, Harrower, & Koegel, 1999). Also, self-management has been suggested as an ideal intervention for children with disabilities participating in full inclusion classroom settings (Reid, 1996).</p>
<p>Peer-Mediated Interventions: Utilizing typical peers to support the academic functioning of students with autism has the potential to reduce the need for continuous one-on-one adult attention, thus</p>	<p><i>Peer Tutoring</i> Peer tutoring consists of pairing two students together to work on any instructional strategy, with one student providing assistance, instruction, and feedback to the other (DuPaul & Eckert, 1998).</p>	<p>Peer tutoring strategies have been shown to be effective in producing increases in on-task behavior, math performance, and social interactions for children with disabilities in inclusive classrooms (DuPaul & Henningson, 1993; Locke & Fuchs, 1995).</p>
	<p><i>Utilizing Peer Supports</i> The goal of this strategy is similar to that of peer tutoring but with the focus being on improving the social interaction skills of students with autism.</p>	<p>Research on utilizing peer supports has demonstrated that it can increase positive social interaction and increase spontaneous peer-interactions (Odom, Hoysen, Jamieson, and Strain, 1985; Brady, Shores, McEvoy, Ellis, & Fox, 1987).</p>
	<p><i>Cooperative Learning</i> Teaching handicapped children in inclusive, cooperative groups with non-handicapped children.</p>	<p>A number of studies have demonstrated that teaching social and academic skills to children with autism in cooperative groups in integrated settings results in increased frequency, duration, and quality of social interactions (Kamps et al., 1992; Kohler et al., 1995).</p>

<p>Multi-Component Interventions: Some intervention strategies have made use of multiple research based techniques to facilitate the educational inclusion of students with autism.</p>	<p>No Specific Techniques Distinguished</p>	<p>Multicomponent intervention has been found to dramatically increase reciprocal interactions and target student initiated interactions for students with significant physical and intellectual challenges and sensory impairments (Hunt, Alwell, Farron-Davis, and Goetz, 1996; Hunt, Farron-Davis, Wrenn, Hirose-Hatae, & Goetz, 1997)</p>
<p>Pretask Sequencing This antecedent procedure involves preceding a difficult request with a rapid series of short, easy requests and reinforcing compliance with these easy requests.</p>	<p>No Specific Techniques Distinguished</p>	<p>By preceding a difficult task with a series of short and easy tasks that have a high probability of being followed, a child will achieve repeated success and build momentum for improved responding through obtaining repeated reinforcement (Mace et al., 1988; Singer et al., 1987)</p>
<p>Pivotal Response Training and Naturalistic Teaching Strategies: incidental teaching approaches and PRT focus on using conditions of natural language teaching interactions such that (a) stimulus items are functional and varied, (b) natural reinforcers are employed, (c) communicative attempts are reinforced, and (d) trials are conducted within a natural interchange (Koegel, Koegel, Harrower, & Carter, 1999; McGee, Morrier, & Daly, 1999).</p>	<p>No Specific Techniques Distinguished</p>	<p>Both incidental teaching and PRT have been used with peer-mediated strategies and documented as successful multi-component intervention strategies that can be used for facilitating the inclusion of children with autism in general education classrooms (McGee, Almeida, Sulzer-Azaroff, & Feldman, 1992; Pierce & Schreibman, 1995, 1997; Thorp, Stahmer, & Schreibman, 1995)</p>

Peer Initiation Strategies for Students with Autism

<http://www.teachervision.fen.com/autism/teaching-methods/8203.html>

Excerpted from *Social Skills for Students with Autism*

With these strategies, socially competent peers are taught how to initiate and encourage social interactions with children with autism in natural settings.

Peer-mediated social interaction procedures have been used for a number of years, initially with withdrawn preschool children, but also with more severely involved children with autism and mental disabilities. Socially competent peers are taught to initiate social interactions with children with autism. They are subsequently paired in natural settings for social activities. The most direct outcome of these procedures has been an increase in positive social responses by children with autism. This outcome is important because of the strong, positive association between social responses and peer acceptance.

A number of modifications to peer initiation techniques appear to increase the effectiveness of these procedures for individuals with autism. Sasso and Rude found that **teaching high-status peers to interact with students with autism increased the number of positive social interactions**. Moreover, untrained peers in the same setting also increased their social interactions with the students with autism. The result was modest, yet consistent increases in the response rate, initiation, and length of interactions of participants with autism.

Another modification of peer-initiated interventions involves the use of triads composed of two peers and one child with autism. The rationale for such an arrangement is that there is typically a level of ““dead time”” within a dyadic pairing due to the often limited communication skills of children with autism.

IV. Additional Resources

A. Web Resources

B. Agencies

C. Our Center's Quick Find

D. References

A. Web Resources

Autism.com

<http://www.autism.com>

This site has compiled a massive list of links to resources about various aspects of Autism. Education, advocacy, placement, and general information links are made easily accessible.

Autisminfo.com

<http://www.autisminfo.com>

This site has numerous resources spanning a broad range of issues relevant to Autism. This site includes information on parenting, booklists, catalogues, conferences, dieting, and many other topics.

Autistics.org

<http://autistics.org>

“The purpose of the autistics.org is to connect autistic people with the services we need to live whole and happy lives. The immediate goal of autistics.org is to build a global database of information and resources by and for persons on the autistic spectrum.” This site incorporates recent new on advocacy issues, an information library, web links, and discussion forums.

Autismteachingtools.com

<http://www.autismteachingtools.com>

This site provides “practical information and teaching tips for working with your special learners”. Their goal is to “have a source of material for reference when attempting to teach a specific cognitive concept or skill.”

AutismWeb

<http://www.autismweb.com/education.htm>

AutismWeb provides resources and descriptions of education techniques to parent, educators, and professionals. While their list of techniques is limited, they offer in providing a great deal of description about warning signs of Autism, as well as information about books, recent news, and conferences for educators and professionals.

Autism and Abuse

<http://www.scn.org/autistics/>

Information and cautionary advice to individuals “on the Spectrum” (those with autistic spectrum disorders) about abuses that can occur within relationships. Focuses on the reasons for abuse, the contexts that it is most likely to occur, and what to do when abuse occurs.

Autism Conferences

<http://www.network54.com/forum/58400>

“This message board is a public posting of autism related conferences.”

Autism Online

<http://www.autisonline.org/index.html>

Autism Online provides educational materials (primarily teaching aides) to educators working with children suffering from Autism. In addition to materials the also offer books and videos covering various topics in 7 different languages.

Autism Resources

<http://www.autism-resources.com>

This site offers information and links about Asperger’s and Autistic Syndroms. Aside from links, book information, and advice, the site has a very thorough list of the current popular treatments of Autistic spectrum disorders, how the work, and which research team advocates its use.

Autism Today

<http://www.autismtoday.com>

This is a large and diverse site offering information about the disorder, expert advice, products, health information, and the latest news on treatments.

Autism/PDD- Search

<http://www.autism-pdd.net/search.htm>

Though Autism/PDD is usually more geared toward research and parent interface, the site features a massive search engine that locates educational resources by state.

Best Practices for Designing and Delivering Effective Programs for Individuals with Autistic Spectrum Disorders

<http://www.feat.org/LinkClick.aspx?fileticket=u6pwKw%2BLV38%3D&tabid=78&mid=413>

“The purpose of this document is to define and clarify issues in providing appropriate and effective interventions for individuals with autism and autism-related disorders.” Issues covered include, assessment, intelligence testing, service planning, parental involvement, ethical and professional considerations, and others.

Beyond Autism

<http://trainland.tripod.com>

“Beyond Autism is a site by a parent that has "been there, done that, and still doing it". This autism site contains over 2,700 working links to other resources and is a comprehensive source of information for those of you just starting out - to help you move "beyond" the label of autism - somehow we all have to do that no matter how difficult it is... I have included many links on teaching methodologies, education and "special" education resources, IEP information, augmentative and communication assistance with assistive technology information, disability legal information, sensory dysfunction issues, specialized catalogs, and behavior problems.”

Brookes

<http://www.pbrookes.com>

This site offers curricula and an occasional seminar series on educational topics including teaching students with autism.

Early Learning Site

<http://aba.insightcommerce.net>

Early Learning Site provides digitized flash cards for educators of special needs children, primarily those with autism spectrum disorders. Currently, early intervention curriculums are popular and seen to be effective. This site provides a wide variety of flash cards, which are central to this intervention, in CD-ROM format.

Inspiration Software, inc.

<http://www.inspiration.com/index.cfm/home.cfm>

“Inspiration Software®, Inc. is recognized as the leader in visual thinking and learning. We develop and publish innovative software tools that inspire learners of all ages to brainstorm, organize, plan and create. With more than 10 million users worldwide, our award-winning software is revolutionizing visual learning in education—inspiring students to develop strong thinking and organizational skills and improve their academic performance.” This company is also a leading developer of educational aides for handicapped and disabled students.

Institute of Education Studies - Autism Spectrum Disorders Research Grants Program

<http://ies.ed.gov/funding/pdf/2007324.pdf>

The purpose of the Autism Spectrum Disorders Research Grants Program is to contribute to the improvement of cognitive, communicative, academic, social, and behavioral outcomes of children identified with autism spectrum disorder (ASD) in preschool through middle school.

Neurodiversity.com

<http://www.neurodiversity.com>

This site celebrates the diversity of the human mind by showcasing famous divergent thinkers.

Oops...Wrong Planet! Syndrome- Autism Spectrum Resources

<http://www.isn.net/~jypsy/>

This page is operated and updated by a family, three of whom are “on the spectrum”. It offers collections of art, papers, anecdotes, and links predominantly for people with Autistic spectrum disorders. These links incorporate information on “the spectrum”, advocacy sites, web rings, and ways to find out about other individuals with spectrum disorders and what they have accomplished in spite of their disability.

Polyoxo.com

<http://www.polyoxo.com>

This site provides a variety of teaching tools, techniques, and philosophies for educators and parents of children with autism or other pervasive developmental disorders (PDDs).

Questia

<http://www.questia.com/Index.jsp>

Questia is an enormous book and article database with over 50,000 books and 399,000 articles at its disposal. They offer dozens of articles and books on the subject of “teaching students with Autism”.

Resources in Autism Education (RAE)

<http://www.autismmed.com/>

“RAE is an organization committed to providing the highest quality behavioral intervention services to children diagnosed with Autism and related Pervasive Developmental Disorders.”

Room 5

<http://room5ideas.com/>

Compiled by a teacher, this page delineates strategies for teaching students with autism taken from a variety of sources and experience.

SEN Teacher Resources

<http://www.senteacher.org>

“Resources, freeware downloads, links and documents for those involved in the education of pupils with learning difficulties, autism and other special educational needs. Some of the materials may also be of use to teachers and parents of primary aged children. All material is free for educational use...”

Teach-Nology

http://www.teach-nology.com/teachers/special_ed/disabilities/autism

Teach-Nology hosts a list of resources to organizations built around helping educators work more fluidly and efficiently with autistic children.

The Autism Link Page

<http://transmil.tripod.com/intro.htm>

This site is a massive weblink database for resources on autism. Membership is not required and individuals can log on to post their own links.

The National Academies Press

Educating Children with Autism (2001) - http://www.nap.edu/catalog.php?record_id=10017

Autism and the Environment: Challenge and Opportunities for Research, Workshop Proceedings - http://www.nap.edu/catalog.php?record_id=11946

Immunization Safety Review: Vaccines and Autism (2004) - http://www.nap.edu/catalog.php?record_id=11946

The National Academies Press (NAP) was created by the National Academies to publish the reports issued by the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine, and the National Research Council, all operating under a charter granted by the Congress of the

United States. The NAP publishes more than 200 books a year on a wide range of topics in science, engineering, and health, capturing the most authoritative views on important issues in science and health policy.

National Autistic Society (Surrey Branch)

<http://www.mugsy.org>

This site offers information, links, descriptions of Autism, as well as links to online articles and talks. They also feature a bookstore and new archives centered around autism.

United States Government Accountability Office - Federal Autism Activities - Funding for Research Has Increased, but Agencies Need to Resolve Surveillance Challenges

<http://www.gao.gov/new.items/d06700.pdf>

Federal agencies support services for people with autism primarily through broader disability programs, and some services may not always be available to meet the needs of this population. Education and HHS's Administration for Children and Families support services for children with autism through education programs for children with disabilities. However, many people with autism may not be able to obtain services under these Medicaid programs because they do not meet eligibility rules or because states limit enrollment.

Wrightslaw

<http://www.wrightslaw.com/info/autism.index.htm>

Wrightslaw is a very thorough general information site that offers descriptions of various treatments, tips from experience, links to published online documents about autism, advocacy information, legal issues of disabilities, and more.

B. Agencies

Americans with Disabilities Act

<http://www.ada.gov>

Provides information about the rights of Americans with disabilities, laws against discrimination, and contact for those that have been discriminated against.

Autism Research Institute

<http://www.autism.com/ari>

The Autism Research Institute (ARI), a non-profit organization, was established in 1967. ARI is primarily devoted to conducting research, and to disseminating the results of research, on the causes of autism and on methods of preventing, diagnosing and treating autism and other severe behavioral disorders of childhood. We provide information based on research to parents and professionals throughout the world.

Autism Society of America

<http://www.autism-society.org>

“ASA is dedicated to increasing public awareness about autism and the day-to-day issues faced by individuals with autism, their families and the professionals with whom they interact. The Society and its chapters share a common mission of providing information and education, supporting research and advocating for programs and services for the autism population.”

Autism Speaks

<http://www.autismspeaks.org/>

Autism Speaks is dedicated to increasing awareness of autism spectrum disorders, to funding research into the causes, prevention and treatments for autism, and to advocating for the needs of individuals with autism and their families. It was founded in February 2005 by Suzanne and Bob Wright, the grandparents of a child with autism. Bob Wright is Vice Chairman, General Electric, and served as chief executive officer of NBC for more than twenty years.

Center for the Study of Autism

<http://autism.org>

This Portland (OR) based research center provides information about autism to parents and professionals, and conducts research on the efficacy of various therapeutic interventions. The site also incorporates anecdotes about successful treatments.

Continuing Education Programs of America

<http://www.cepauniversity.com/>

“...Continuing Education Programs of America (CEPA) is one of the leading developers and organizers of Continuing Education Activities for those in the fields of Occupational Therapy, Physical Therapy, Speech/Language Pathology, Special Education, Psychology, Nursing and other related helping professions. The focus of these programs is to provide "practical state-of-the-art information" that can be applied immediately to a clinical problem when returning to one's place of employment.”

Division Teacch: Treatment and Education of Autism and Related Communication Handicapped Children

<http://www.teacch.com>

Division Teacch is run through the University of North Carolina: Chapel Hill. It provides information on autism, suggestions on educational approaches, and training opportunities.

The Doug Flutie, Jr. Foundation.

<http://www.flutiefoundation.org/Grants-Applying-For-Grants.asp>

The Doug Flutie, jr. Foundation grant making program has three priorities: “(1) assist financially disadvantaged families who need assistance in caring for their children with autism (through nonprofit autism organizations), (2) fund research into the causes and consequences of childhood autism, and (3) sever as a clearing house and communication center for new programs and services developed for individuals with autism.

Labosh Publishing

<http://www.laboshpublishing.com/index.html>

This publishing company distributes booklets for parents of autistic children that teach everything from how to take a child with autism to the grocery store to what sensory issues a child with autism may encounter on any given ride at a Florida theme park. Their textbooks build necessary language skills as they teach academics to children with autism through photos and hands-on activities. Topics covered include mathematics, geography, science, and social studies and utilize at least 15 different learning activities like those commonly found on an Individualized Education Program (IEP). Everything is included to give a child with autism education in basic academics.

Maternal and Child Health Library - Knowledge Path: Autism Spectrum Disorders

http://www.mchlibrary.info/knowledgepaths/kp_autism.html

This knowledge path about autism spectrum disorders (ASD) has been compiled by the Maternal and Child Health Library at Georgetown University. It offers a selection of current, high-quality resources about ASD identification and intervention, and it includes resources about biomedical research into the causes of ASD; resources that address the communication, education, and vocational challenges of autism; and resources about autism's impact on family life. Separate sections identify resources about autism and environmental health research as well as those that address concerns about vaccines. This knowledge path for health professionals, educators, researchers, policymakers, and families will be updated periodically.

National Autistic Society (Surrey Branch)

<http://www.mugsy.org>

This site offers information, links, descriptions of Autism, as well as links to online articles and talks. They also feature a bookstore and new archives centered around autism.

NIMH- the National Institute of Mental Health

<http://www.nimh.nih.gov/healthinformation/autismmenu.cfm>

The National Institute of Mental Health offers comprehensive information about the disorder and includes in-depth technical accounts about the causes, symptomology, and treatment. It also makes available information about local agencies equipt to help families and individuals with autism. As NIMH is a research institution, the site provides list of ongoing and government funded research into various aspects of autism.

C. Our Center's Quick Find

On the following pages is the Quick Find on Autism from our Center's Online Clearinghouse. By going to our website and clicking on this topic, you have ready access to additional documents and resources, as well as reference to additional publications available through the library.

Quick Find On-line Clearinghouse

<http://smhp.psych.ucla.edu/qf/autism.htm>

TOPIC: Educating Children with Autism

The following reflects our most recent response for technical assistance related to this topic. This list represents a sample of information to get you started and is not meant to be exhaustive. (Note: Clicking on the following links causes a new window to be opened. To return to this window, close the newly opened one).

Center Developed Documents, Resources, and Tools

Note: This Quick Find is the first Center developed resource on this topic. A few other Center resources relevant to addressing psychosocial & mental health problems in schools include:

Center Reports

- [Youngsters' Mental Health and Psychosocial Problems: What are the Data? \(Center Report\)](#)

Continuing Education Modules

- [Addressing Barriers to Learning: New Directions for Mental Health in Schools \(Continuing Education Module\)](#)

Introductory Packets

- [Affect and Mood Problems related to School Aged Youth \(Introductory Packet\)](#)
- [Anxiety, Fears, Phobias, and Related Problems: Intervention and Resources for School Aged Youth \(Introductory Packet\)](#)
- [Assessing to Address Barriers to Learning \(Introductory Packet\)](#)
- [Conduct and Behavior Problems \(Introductory Packet\)](#)
- [Early Development and Learning from the Perspective of Addressing Barriers \(Introductory Packet\)](#)
- [Learning Problems and Learning Disabilities \(Introductory Packet\)](#)

Resource Aid Packet

- [Student Psychotropic Medication: The School's Role \(Resource Aid Packet\)](#)
- [Screening/Assessing Students: Indicators and Tools \(Resource Aid Packet\)](#)

Technical Aid Packets

- [Autism Spectrum Disorders and Schools \(Technical Aid Packet\)](#)

Other Relevant Documents, Resources, and Tools on the Internet

- [A Guide to Disability Rights Laws](#)
- [Advocates for Children's Short Guide to Autism Spectrum Disorders](#)
- [Asperger and Autism Information by MAAP Services](#)
- [Asperger's Disorder: Handout for Teachers and Parents](#)
- [Asperger's Disorder Homepage](#)
- [Asperger's Syndrome and Anxiety](#)

- [Asperger Support Network](#)
- [Asperger Syndrome: A Guide for Secondary School Principals](#)
- [Autism and Asperger Research Report](#)
- [Autism: A Medical Primer](#)
- [Autism in the Classroom](#)
- [Autism Research Institute](#)
- [Autism Spectrum Disorders \(Pervasive Developmental Disorders\)](#)
- [Autism Spectrum Disorders Research at the National Institute of Mental Health](#)
- [Best Practices for Designing and Delivering Effective Programs for Individuals with Autistic Spectrum Disorders](#)
- [Children and Adolescents with Autism](#)
- [Current Interventions in Autism - A Brief Analysis](#)
- [Educating Children with Autism](#)
- [Educating Students with Autism: Are There Differences in Placement?](#)
- [Evaluation of a Methodology for a Collaborative Multiple Source Surveillance Network for Autism Spectrum Disorders](#)
- [Evidence-Based Assessment of Autism Spectrum Disorders in Children and Adolescents](#)
- [Federal Autism Activities](#)
- [General and Special Education Resources](#)
- ["Group Ideas" for preschoolers and Primary Classrooms Including students with Autism: Structuring for Success](#)
- [High Functioning Autism](#)
- [Implementing the Children's Health Act of 2000](#)
- [Including Students with Disabilities in General Education Classrooms](#)
- [Inclusion for Children with Autism: The TEACCH Position](#)
- [Is It Autism?](#)
- [Knowledge Path: Autism spectrum disorders](#)
- [Learning Styles and Autism](#)
- [Management of Children with Autism Spectrum Disorders](#)
- [The OASIS Asperger Syndrome Guide for Teachers Letter of Introduction](#)
- [Online Asperger Syndrome Information and Support](#)
- [An Opportunity to Achieve Real Change for Californians with Autism Spectrum Disorders](#)
- [Pervasive Developmental Disorders \(PDD\)](#)
- [Prevalence of Autism Spectrum Disorders \(Autism and Developmental Disabilities Monitoring Network, Six Sites, United States, 2000\)](#)
- [Prevalence of Autism Spectrum Disorders \(Autism and Developmental Disabilities Monitoring Network, 14 Sites, United States, 2002\)](#)
- [Recommendations for Students with High-Functioning Autism](#)
- [Social Cognition and Its Neural Correlates in Schizophrenia and Autism \(Abstract Only\)](#)
- [Special Education for Students with Disabilities: Analysis and Recommendations](#)
- [Special Education: A Service, Not a Place](#)
- [Strategies for Teaching Students with Autistic Spectrum Disorder](#)
- [Structured Teaching: Strategies for Supporting Students with Autism](#)
- [Summary of the Practice Parameters for the Assessment and Treatment of Children and Adolescents With Anxiety Disorders](#)
- [Teaching Methodologies Information](#)
- [Teaching Students with Autism. \(ERIC Digest\)](#)
- [Teaching Students with Autism: A Resource Guide for Schools](#)
- [The M.I.N.D Institutes Press Release on the Epidemiology of Autism in California](#)
- [Tips for Teaching High Functioning People with Autism](#)
- [United State Government Accountability Office, Special Education: Children with Autism](#)

Clearinghouse Archived Materials

- [Empowerment in Transition Planning: Guidelines for Special Educators](#)
- [Medicaid Reform](#)
- [Mental, Emotional, and Behavioral Disorders in Children and Youth](#)
- [Obsessive Compulsive Disorder](#)
- [Peer-Mediated Training of Cooperative Play Between Special and Regular Class Students in Integrated Play Settings](#)
- [Self-Mutilation](#)
- [Special Education for Students with Disabilities](#)
- [The Demographics of Education and Service Delivery Systems](#)

Related Agencies and Websites

- [Autism Society of America](#)
- [Autism.com](#)
- [Autism Research Institute](#)
- [Autismteachingtools.com](#)
- [Beyond Autism](#)
- [Division Teach: Treatment and Education of Autism and Related Communication Handicapped Children](#)
- [M.I.N.D Institute](#)
- [SEN Teacher Resources](#)
- [Wrightslaw](#)

Relevant Publications That Can Be Obtained through Libraries

- **A mind apart: Understanding children with autism and asperger syndrome.** Szatmari, P. (2004). *Guilford Press*.
- **A review of educational approaches for individuals with autism.** Dempsey, I., Forman, P. (2001). *International Journal of Disability, Development & Education*. Vol. 48. pp. 103-116.
- **Asperger syndrome-practical strategies for the classroom: A teacher's guide.** Thomas, G., Whitaker, P., Barret, P., Clewley, H., Joy, H. & Potter, M. (2002). *Autism Asperger Publishing Company*.
- **Asperger syndrome: What teachers need to know.** Winter. (2003). *Jessica Kingsley Pub*.
- **Autism: The teacher's view.** Helps, S., Newsom-Davis, I. C., Callias, M. (1999). *Autism*. Vol. 3. pp.287-298.
- **Autistic psychopathy in childhood.** Asperger, H. (1991). *Autism and Asperger's Syndrome*. Cambridge ; New York : Cambridge University Press.
- **Autism spectrum disorders: Intervention and treatment for children and youth.** Simpson, R. L. (2004). *Corwin Press*.
- **Autistic spectrum disorder: Understanding the diagnosis and getting help.** Waltz (2002). *Patient-Centered Guides*.
- **Children on the autistic spectrum: Guidelines for mainstream practice.** Conner, M. (1999). *Support for Learning*. Vol. 14. pp. 80-86.
- **Children with autism: A Developmental perspective.** Sigman, M. & Capps, L. (1997). *Cambridge: Harvard University Press*.
- **Commitment to philosophy, teacher efficacy, and burnout among teachers of children with autism.** Jennett, H. K., Harris, S. L., Mesibov, G. B. (2003). *Journal of Autism & Developmental Disorders*. Vol. 33. pp. 583-593
- **Creating an educational program for young children who are blind and who have autism.**

- Jaimeson, S. (2004). *RE:view*. Vol. 35. pp. 165-177.
- Effective educational practices. Iovannone, R., Dunlap, G., Huber, H., Kincaid, D. (2003). *Focus on Autism & Other Developmental Disabilities*. Vol. 18. pp. 150-165.
 - Enabling communication in children with autism. Le Grice, B. (2003). *Behavior Change*. Vol. 20. pp. 237-238.
 - Everyday solutions: A practical guide for families of children with autism spectrum disorder. Small, M. & Kontene, L. (2003). *Autism Asperger Publishing Company*.
 - Helping children with autism learn: A guide to treatment approaches for parents and professionals. Siegel, B. (2003). *New York: Oxford University Press*.
 - How the special needs brain learns. Sousa, D. (2001). Thousand Oaks, CA: Corwin Press.
 - Inclusion of learners with autism spectrum disorders in general education settings. Simpson, R. L., de Boer-Ott, S. R., & Smith-Myles, B. (2003). *Topics in Language Disorders*. 23(2), 116-133.
 - Intervention ABCs for children with asperger syndrome. Safran, S. P., Safran, J. S. & Ellis, K. (2002). *Journal of intellectual disability research*. 46(4), 318-327.
 - Interventions to facilitate communication in autism. Kern Koegel, L. (2000). *Journal of Autism & Developmental Disorders*. Special Issue: Treatments for people with autism and other pervasive developmental disorders: Research perspectives. Vol. 30. pp. 383-391.8 (3):77084
 - Interventions to facilitate communication in autism. Rogers, S. J. (2000). *Journal of Autism & Developmental Disorders*. Special Issue: Treatments for people with autism and other pervasive developmental disorders: Research perspectives. Vol. 30. pp. 399-409. December 2003 160:2141-2147
 - More than words: Helping parents promote communication and social skills in children with autism spectrum disorder. Sussman, F. (1999). *Toronto: Hanen Centre*.
 - Multicultural perspectives on teaching students with autism. Wilder, L. K., Dyches, T. T., Obiakor, F. E., & Algozzine, B. (2004). *Focus on Autism & Other Developmental Disabilities*. 19(2), 105-113.
 - Precision teaching children with autism: Helping design effective programs. Kerr, K. P., Smyth, P., McDowell, C. (2003). *Early Child Development Care*. Vol. 173. pp. 399-410.
 - Preparing teachers in evidence-based practices for young children with autism. Lerman, D. C., Vorndran, C. M., Addison, L., & Kuhn, S. C. (2004). *School Psychology Review*, 33, 510-526.
 - Sexuality and adolescents with autism. Koller, R. A. (2000). *Sexuality & Disability*. Vol. 18. pp.125-135.
 - Teaching students with autism. Zager, D. B., Shamow, N. A., Schneider, H. C. (1999). *Autism: Identification, education, and treatment (2nd ed.)*. Zager, D. B. (Ed). Mahwah, NJ: Lawrence Erlbaum Associates.
 - Theory of mind and the Practical management of autistic behavior in the classroom environment. Columbino, Tommaso. (2004). *Theory & Psychology*, 14(5), 725-737
 - Transitions for young children with autism from preschool to kindergarten. Forest, E. J. , Horner, R. H., Lewis-Palmer, T., Todd, A. W., & McGee, G. (2004). *Journal of Positive Behavior Interventions*. 6(2), 103-112.

We hope these resources met your needs. If not, feel free to contact us for further assistance. For additional resources related to this topic, use our [search](#) page to find people, organizations, websites and documents. You may also go to our [technical assistance page](#) for more specific technical assistance requests.

If you haven't done so, you may want to contact our sister center, the [Center for School Mental Health](#) at the University of Maryland at Baltimore.

If our website has been helpful, we are pleased and encourage you to use our site or contact our Center in the future. At the same time, you can do your own technical assistance with "[The fine Art of Fishing](#)" which we have developed as an aid for do-it-yourself technical assistance.

D. References to Books, Chapters, Articles, Reports, & Other Printed Resources

- Anderson, S. R., Jablonski, A. L., Knapp, V. M., & Thomeer, M. L. (2007). *Self-Help Skills for People With Autism: A Systematic Teaching Approach*. Bethesda, MD: Woodbine House.
- Bertrand, J., Mars, A., Boyle, C., Bove, F., Yeargin-Allsopp, M., & Decoufle, P. (2001). Prevalence of autism in a United States population: the Brick Township, New Jersey, investigation. *Pediatrics* 2001; 108: 1155-61.
- Dumont-Mathieu, T., Fein, D. (2005). Screening for autism in young children: The Modified Checklist for Autism in Toddlers (M-CHAT) and other measures. *Mental Retardation and Developmental Disabilities Research Reviews*. 11(3): 253-262.
- Exkorn, K.S. (2005). *Autism sourcebook: Everything you need to know about diagnosis, treatment, coping, and healing*. New York: Regan Books.
- Ghaziuddin, M. (2005). *Mental health aspects of autism and Asperger syndrome*. Philadelphia, PA: Jessica Kingsley Publishers.
- Sigman, M., Spence, S. J., Wang A. T. (2006). Autism from Developmental and Neuropsychological Perspectives. *Annual Review of Clinical Psychology*. 5: 327-355.
- Volkmar, F., Chawarska, K., Klin, A. (2005). Autism in Infancy and Early Childhood. *Annual Review of Psychology*. 56: 315-336.
- Wiseman, N.D. (2006). *Could it be autism? A parent's guide to the first signs and next steps*. New York: NY: Broadway Books.
- Yeargin-Allsop, M., Rice, C., Karapurkar, T., Doenberg, N., Boyle, C., & Murphy, C. (2003). Prevalence of autism in a US metropolitan area. *JAMA* 2003; 289: 49-55.