

# A Guide to Developmental Disorders

## Part 4

### Pervasive Developmental Disorders

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## **1.Introduction**

The term Pervasive Developmental Disorders was first used in the 1980s to describe a class of disorders. This class of disorders has in common the following characteristics: impairments in social interaction, imaginative activity, verbal and nonverbal communication skills, and a limited number of interests and activities that tend to be repetitive

The causes of autism and PDD are unknown. Currently, researchers are investigating areas such as brain development, structure, genetic factors and biochemical imbalance in the brain as possible causes. **These disorders are not caused by psychological factors.**

Apart from traditional medical help several alternate therapies are also available, though have not been documented properly. These are also mentioned here.

## **2. Pervasive developmental disorders (PDD)**

These are also called autism spectrum disorders. All types of PDD are neurological disorders that can be identified are usually evident by age 3.

The manual used by physicians and mental health professionals as a guide to diagnosing disorders is the **Diagnostic and Statistical Manual of Mental Disorders (DSM)**. The DSM was last revised in 1994 and is known as DSM-IV.

In this latest revision, known as the DSM-IV, five disorders are identified under the category of Pervasive Developmental Disorders:

1. **Autistic Disorder**
2. **Rett's Disorder**
3. **Childhood Disintegrative Disorder**
4. **Asperger's Disorder**

**5. Pervasive Developmental Disorder Not Otherwise Specified, or PDDNOS. ( it is also called by some people Multiplex Developmental Disorder (MDD)).**

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### **3.General Diagnosis**

Pervasive developmental disorders are usually identified by the age of 3 years. A child psychiatrist or other mental health professional usually makes the diagnosis of any of the PDD following a comprehensive medical and psychiatric evaluation.

It is important to diagnose PDD early and accurately as some PDD put children at risk for developing other mental disorders (i.e., depression, attention-deficit/hyperactivity disorder, obsessive-compulsive disorder, and schizophrenia).

There are no blood tests or brain tests (EEG, CAT scan, MRI, PET scan) that conclusively identify the presence of autism. However, the doctor may recommend blood tests or brain tests/scans to rule out the presence of other conditions.

Some doctors, however, are hesitant to diagnose very young children with a specific type of PDD, such as Autistic Disorder, and therefore only use the general category label of PDD.

This approach contributes to the confusion about the term, because the term PDD actually refers to a *category* of disorders and is not a diagnostic label. The appropriate diagnostic label to be used is PDDNOS--Pervasive Developmental Disorder Not Otherwise Specified--not PDD (the umbrella category under which PDDNOS is found).

PDDNOS is also called by some people MDD ( Multiple Development Disorders ) or MSDD Multi System Development Disorders, they all basically mean the same thing.

PDD or MDD symptoms emerge in earliest childhood, often in the first years of life, and persist throughout development. Diagnostic criteria for PDD / MDD include:

1. Impaired social behavior/sensitivity, similar to that seen in autism, such as:
  - Social disinterest
  - Detachment, avoidance of others, or withdrawal
  - Impaired peer relations
  - Highly ambivalent attachments
  - Limited capacity for empathy or understanding what others are thinking or feeling

- Delay or lack of spoken language
- 2. Affective symptoms, including:
  - Impaired regulation of feelings
  - Intense, inappropriate anxiety
  - Recurrent panic
  - Emotional lability, without obvious cause
- 3. Thought disorder symptoms, such as:
  - Sudden, irrational intrusions on normal thoughts
  - Magical thinking
  - Confusion between reality and fantasy
  - Delusions such as paranoid thoughts or fantasies of special powers

Children who show evidence of symptoms from ALL THREE of these categories may be classified as having PDD/MDD.

Children with autism or PDD vary widely in abilities, intelligence, and behaviors. Some children do not speak; others have language that often includes repeated phrases or conversations. Children with more advanced language skills tend to use a small range of topics and have difficulty with abstract concepts. Repetitive play skills, a limited range of interests, and impaired social skills are generally evident as well. Unusual responses to sensory information—for example, loud noises, lights, certain textures of food or fabrics—are also common.

#### **Prevention of pervasive developmental disorders:**

Preventive measures to reduce the incidence or severity of any type of PDD are not known at this time. However, it is believed that the level of severity can be improved with early treatment.

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## **4. The Five PDD disorders**

### **4.a. Autism**

Autistic Disorder, sometimes referred to as early infantile Autism or childhood Autism, is four times more common in boys than in girls. Children with Autistic Disorder have a moderate to severe range of communication, socialization, and behavior problems. Many children with Autism also have mental retardation

The symptoms of autism may include:

- does not socially interact well with others, including parents
  - shows a lack of interest in, or rejection of, physical contact. Parents describe autistic infants as "unaffectionate." Autistic infants and children are not comforted by physical contact.
  - avoids making eye contact with others, including parents
  - fails to develop friends or interact with other children
- does not communicate well with others
  - is delayed or does not develop language
  - once language is developed, does not use language to communicate with others
  - has echolalia (repeats words or phrases repeatedly, like an echo)
- demonstrates repetitive behaviors
  - has repetitive motor movements (such as rocking and hand or finger flapping)
- is preoccupied, usually with lights, moving objects, or parts of objects
- does not like noise
- has rituals
- requires routines

**Autism Society of America**, 7910 Woodmont Avenue, Suite 300, Bethesda, MD 20814.  
Telephone: 1-800-328-8476. Web: [www.autism-society.org](http://www.autism-society.org)  
Autism Coalition: [www.autismcoalition.com/](http://www.autismcoalition.com/)

Autism Patient Center: [www.patientcenters.com/autism/](http://www.patientcenters.com/autism/)

Autism-PDD Resources Network: [www.autism-pdd.net/](http://www.autism-pdd.net/)

Division TEACCH: [www.teacch.com/](http://www.teacch.com/)

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## **4.2 Rett's Disorder.**

Rett's Disorder, also known as Rett Syndrome, is diagnosed primarily in females. In children with Rett's Disorder, development proceeds in an apparently normal

fashion over the first 6 to 18 months at which point parents notice a change in their child's behavior and some regression or loss of abilities, especially in gross motor skills such as walking and moving. This is followed by an obvious loss in abilities such as speech, reasoning, and hand use.

The repetition of certain meaningless gestures or movements is an important clue to diagnosing Rett's Disorder; these gestures typically consist of constant hand-wringing or hand-washing (Moeschler, Gibbs, & Graham 1990).

The symptoms of Rett's disorder may include:

- normal pregnancy, birth, and newborn growth and development
- normal growth and development during the first 5 to 18 months of life
- normal head circumference at birth

Following a period of normal development of at least five months, all of the following changes occur:

- size of the child's head does not grow as much as it should between the ages of 5 and 48 months
- loss of previously learned useful hand skills (such as reaching for and grasping an object) and the development of stereotyped hand movements that are not useful to the child, such as hand wringing
- loss of socially engaging behaviors, such as smiles and eye contact (however, these behaviors may be re-developed later)
- loss of coordinated walking or body movements
- Expressive (ability to verbally express thoughts) and receptive (the ability to understand and use language that is heard or seen) language skills become impaired and severe psychomotor retardation develops

**International Rett Syndrome Association**, 9121 Piscataway Road, Clinton, MD 20735.

Telephone: 1-800-818-RETT; (301) 856-3334.

Web: [www.rettsyndrome.org](http://www.rettsyndrome.org)

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#### **4.c. Childhood Disintegrative Disorder.**

Childhood Disintegrative Disorder, or **Heller's syndrome** is an extremely rare disorder, is a clearly apparent regression in multiple areas of functioning (such as

the ability to move, bladder and bowel control, and social and language skills) following a period of at least 2 years of apparently normal development. By definition, Childhood Disintegrative Disorder can *only* be diagnosed if the symptoms are preceded by *at least* 2 years of normal development and the onset of decline is prior to age 10

### **Diagnostic Criteria for Childhood Disintegrative Disorder**

A. Apparently normal development for at least the first 2 years after birth as manifested by the presence of age-appropriate verbal and nonverbal communication, social relationships, play, and adaptive behavior.

B. Clinically significant loss of previously acquired skills (before age 10 years) in at least two of the following areas:

- (1) expressive or receptive language
- (2) social skills or adaptive behavior
- (3) bowel or bladder control
- (4) play
- (5) motor skills

C. Abnormalities of functioning in at least two of the following areas:

- (1) qualitative impairment in social interaction (e.g., impairment in nonverbal behaviors, failure to develop peer relationships, lack of social or emotional reciprocity)
- (2) qualitative impairments in communication (e.g., delay or lack of spoken language, inability to initiate or sustain a conversation, stereotyped and repetitive use of language, lack of varied make-believe play)
- (3) restricted, repetitive, and stereotyped patterns of behavior, interests, and activities, including motor stereotypes and mannerisms

D. The disturbance is not better accounted for by another specific Pervasive Developmental Disorder or by Schizophrenia. (APA, 1994, pp. 74-75)

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The symptoms of childhood disintegrative disorder may include:

- at least two years, and usually up to four years, of normal development including speech, social interactions and relationships, and play and adaptive behavior
- over a short period of time (a few months), severe loss of functioning in social, communication, and behavioral skills occurs. Without any obvious illness or cause, children experiencing disintegrative disorder become anxious, irritable, negative, and disobedient with frequent temper tantrums and outbursts for no apparent reason. These children have a complete loss of speech and language, understanding of language, and a decrease in thinking (cognitive) skills.

#### **4. d. Asperger's Disorder.**

Asperger's Disorder, also referred to as Asperger's or Asperger's Syndrome, is a developmental disorder characterized by a lack of social skills; difficulty with social relationships; poor coordination and poor concentration; and a restricted range of interests, but normal intelligence and adequate language skills in the areas of vocabulary and grammar.

Asperger's Disorder appears to have a somewhat later onset than Autistic Disorder, or at least is recognized later. An individual with Asperger's Disorder does not possess a significant delay in language development; however, he or she may have difficulty understanding the subtleties used in conversation, such as irony and humor.

Also, while many individuals with autism have mental retardation, a person with Asperger's possesses an average to above average intelligence (Autism Society of America, 1995). Asperger's is sometimes incorrectly referred to as "high-functioning autism."

The symptoms of Asperger's disorder may include:

- normal development of speech, self-help skills, thinking skills (cognitive development), and curiosity about their environment
- difficulty with social interactions such as making friends, sharing ideas, sharing pleasures or accomplishments, facial expressions (smiles), or eye contact with others
- repetitive and stereotyped patterns of behavior or play such as strange routines or rituals (hand or finger flapping, collecting strange objects such as lint)
- capable of originality and creativity focused on isolated areas of interest

#### **4.e. Pervasive Developmental Disorder Not Otherwise Specified.(PDDNOS)**



Children with PDDNOS either (a) do not fully meet the criteria of symptoms clinicians use to diagnose any of the four specific types of PDD above, and/or (b) do not have the *degree* of impairment described in any of the above four PDD specific types.

According to the DSM-IV, this category should be used "when there is a severe and pervasive impairment in the development of social interaction or verbal and nonverbal communication skills, or when stereotyped behavior, interests, and activities are present, but the criteria are not met for a specific Pervasive Developmental Disorder, Schizophrenia, Schizotypal Personality Disorder, or Avoidant Personality Disorder" (American Psychiatric Association, 1994, pp. 77-78).

## **5.The Cause of PDDNOS**

Both behavioral and biological studies have generated sufficient evidence to suggest that PDDNOS is caused by a neurological abnormality--problems with the nervous system. However, no specific cause or causes have been identified.

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## **6.The Symptoms and Signs of PDDNOS**

Generally, children are 3 to 4 years old before they exhibit enough symptoms for parents to seek a diagnosis. There is no set pattern of symptoms and signs in children with PDDNOS. It is important to realize that a very wide range of diversity is seen in children with PDDNOS. All the items of behavior described in this section are common in these children, but a single child *seldom* shows all the features at one time. In other words, all children with PDDNOS do not have the same degree or intensity of the disorder. PDDNOS can be mild, with the child exhibiting a few symptoms while in the school or neighborhood environment. Other children may have a more severe form of PDDNOS and have difficulties in all areas of their lives. Because of the possibility that PDDNOS and Autistic Disorder are on a continuum, many clinical features described in the following section are very similar to those being described in the literature for Autistic Disorder.

### **6.a. Deficits in Social Behavior**

Some infants with PDDNOS tend to avoid eye contact and demonstrate little interest in the human voice. They do not usually put up their arms to be picked up in the way that typical children do. They may seem indifferent to affection and seldom show facial responsiveness. As a result, parents often think the child is deaf. In children with fewer delays, lack of social responsiveness may not be

obvious until well into the second or third year of life.

The majority do not show normal separation or stranger anxiety. These children may approach a stranger almost as readily as they do their parents. Many such children show a lack of interest in being with or playing with other children. They may even actively avoid other children.

In middle childhood, such children may develop a greater awareness or attachment to parents and other familiar adults. However, social difficulties continue.

As these children grow older, they may become affectionate and friendly with their parents and siblings. However, they still have difficulty understanding the complexity of social relationships.

### **6.b. Impairment in Nonverbal Communication**

In early childhood, children with PDDNOS may develop the concrete gesture of pulling adults by the hand to the object that is wanted. They often do this without the typical accompanying facial expression. They seldom nod or shake their heads to substitute for or to accompany speech. Children with PDDNOS generally do not participate in games that involve imitation. They are less likely than typical children to copy their parents' activity.

### **6.c. Impairment in Speech Development**

Many infants with PDDNOS do not babble, or may begin to babble in their first year but then stop. When the child develops speech, he or she often exhibits abnormalities.

Echolalia (seemingly meaningless repetition of words or phrases) may be the only kind of speech some children acquire. Though echolalic speech might be produced quite accurately, the child may have limited comprehension of the meaning. In the past, it was thought that echolalia had no real function. More recent studies have found that echolalia can serve several functions, such as self-stimulation (when a child says words or phrases repeatedly without a communicative purpose--just because it feels good); as a step between a child being nonverbal and verbal; or as a way to communicate (Prizant & Rydell, 1993). Other children develop the appropriate use of phrases copied from others. This is often accompanied by pronoun reversal in the early stages of language development. For instance, when the child is asked "How are you?" he or she may answer "You are fine."

The actual production of speech may be impaired. The child's speech may be like that of a robot, characterized by a monotonous, flat delivery with little change in pitch, change of emphasis, or emotional expression.

## **7. Unusual Patterns of Behavior**

The unusual responses of children with PDDNOS to the environment take several forms.

### **7.a Resistance to change**

Many children are upset by changes in the familiar environment. Even a minor change of everyday routine may lead to tantrums. Some children line up toys or objects and become very distressed if these are disturbed. Efforts to teach new activities may be resisted.

### **7.b. Compulsive behaviors**

Ritualistic or compulsive behaviors usually involve rigid routines (e.g., insistence on eating particular foods) or repetitive acts, such as hand flapping or finger mannerisms (e.g., twisting, flicking movements of hands and fingers carried out near the face). Some children develop preoccupations; they may spend a great deal of time memorizing weather information, state capitals, or birth dates of family members.

### **7.c. Abnormal attachments and behaviors**

Some children develop intense attachments to odd objects, such as pipe cleaners, batteries, or film canisters. Some children may have a preoccupation with certain features of favored objects, such as their texture, taste, smell, or shape.

### **7.d. Unusual responses to sensory experiences**

Many children may seem underresponsive or overresponsive to sensory stimuli. Thus, they may be suspected of being deaf or visually impaired. It is common for such young children to be referred for hearing and vision tests. Some children avoid gentle physical contact, yet react with pleasure to rough-and-tumble games. Some children carry food preferences to extremes, with favored foods eaten to excess. Some children limit their diet to a small selection, while others are hearty eaters who do not seem to know when they are full.

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## **8. Disturbance of Movement**

The typical motor milestones (e.g., throwing, catching, kicking) may be delayed but are often within the normal range. Young children with PDDNOS usually have difficulty with imitation skills, such as clapping hands. Many such children are very overactive, yet tend to become less overactive in adolescence. Children with PDDNOS may exhibit characteristics such as grimacing, hand flapping or twisting, toe walking, lunging, jumping, darting or pacing, body rocking and swaying, or head rolling or banging. In some cases the behaviors appear only from time to time; in other cases they are present continuously.

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## **9. Intelligence and Cognitive Deficits**

Generally, children with PDDNOS do very well on tests requiring manipulative or visual skills or immediate memory, while they do poorly on tasks demanding symbolic or abstract thought and sequential logic. The process of learning and thinking in these children is impaired, most particularly in the capacity for imitation, comprehension of spoken words and gestures, flexibility, inventiveness, learning and applying rules, and using acquired information. Yet, a small number of children with PDDNOS show excellent rote memories and special skills in music, mechanics, mathematics, and reading.

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## **10. Diagnosing PDDNOS**

Currently, no objective biological test, such as a blood test or an X-ray examination, can confirm a child's PDDNOS diagnosis. Diagnosing PDDNOS is complicated and much like putting together a jigsaw puzzle that does not have a clear border and picture.

Therefore, it is reasonable to say that, when a PDDNOS diagnosis is made, it reflects the clinician's best guess. Obtaining an accurate diagnosis requires an assessment conducted by a well-trained professional who specializes in developmental disorders, usually a child psychiatrist, developmental pediatrician,

pediatric neurologist, developmental pediatrician, child psychologist, developmental psychologist, or neuropsychologist.

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## **11. PDDNOS Assessment**

The purpose of PDDNOS assessment is twofold: to gather information to formulate an accurate diagnosis and to provide information that will form the basis of an appropriate intervention plan for the individual child and family. Assessment of PDDNOS usually includes the following elements:

### **11.a. Medical assessment**

The medical evaluation should include a thorough birth, developmental, medical, and family history, and a full physical and neurological examination. Not all children with PDDNOS require laboratory tests such as a chromosome study, including a test for Fragile X, an EEG (which measures the brain's electrical activity), or a brain scan such as MRI (an X-ray that gives a picture of the brain's anatomy). The primary care physician determines if these are needed. Although the cause of PDDNOS is generally unknown, the physician may discuss some medical conditions that do not cause PDDNOS but tend to be found in such children--for example, seizure disorder. Associated conditions can cause or worsen a child's problems.

### **11.b. Behavior rating scales**

Checklists of possible problems should be completed by parents or caretakers familiar with the child. Many diagnosticians use the checklist for autism. However, no scale has yet been developed specifically to determine the diagnosis of PDDNOS.

### **11.c. Psychological assessment**

The psychologist uses standardized instruments to evaluate the child's cognitive, social, emotional, behavioral, and adaptive functioning. It points to the special areas which are showing delays.

### **11.d. Educational assessment**

Both formal assessment (such as the use of standardized tests) and informal assessment (such as direct observation and interviewing the parents) should be used to evaluate the child on the following points:

- Pre academic skills (e.g., shape and letter naming),
- Academic skills (e.g., reading and arithmetic),
- Daily living skills (e.g., toileting, dressing, eating), and
- Learning style and problem-solving approaches.

### **11.e. Communication assessment**

Formal testing, observational assessment, and interviewing the child's parents are all useful strategies for assessing communication skills. It is important to assess a range of communication skills, including the child's interest in communication, why (for what purpose) the child communicates, the content and context of the communication, how the child communicates (including facial expression, posture, gestures, etc.), and how well the child understands when others communicate with him or her. Assessment results should be used when designing a communication program for the child. This may incorporate one or more alternative forms to spoken communication, such as sign language and/or using a communication board (i.e., pointing to pictures to express oneself).

### **11.f. Occupational assessment**

An occupational therapist may evaluate the child to determine the nature of his or her sensory integrative functioning: how the child's different senses--hearing, sight, taste, smell, touch--work together. Standardized tools are used to assess fine motor skills (such as using fingers to pick up small objects), gross motor skills (such as running and jumping), whether the child is right or left handed, and various visual skills (such as depth perception).

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### **11.g. Evaluation summary**

The professional evaluating a child will use all the information collected through these varying techniques to decide whether that child has a disability that falls under the category of PDD. Assessment and evaluation can be done through the child's local public school or a private practitioner.

Treatment of PDDNOS

On the whole, children with PDDNOS share the social and communicative disabilities found in children with Autistic Disorder. They often need services or treatments similar to those provided to children with autism.

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## **12. Traditional Methods of Therapy**

Specific treatment for PDD will be determined by your child's physician based on:

- your child's age, overall health, and medical history
- extent of the disorder
- type of disorder
- your child's tolerance for specific medications or therapies
- expectations for the course of the disorder
- your opinion or preference

Treatment plans are individualized based on each child's symptoms and the level of severity. Multidisciplinary treatment approaches are utilized as needed to address the individual needs of each child.

Treatment may include:

- speech therapy
- occupational therapy
- social skills training (to help children learn to perform activities of daily living, or ADLs, and ways to communicate and relate to others)
- behavioral therapy

Specialized behavioral and educational programs are designed to treat developmental disorders. Behavioral techniques help children learn to behave in more acceptable ways. Parents may be taught behavioral techniques to help them provide consistent rewards and set limits at home. While some children with PDD require specialized classrooms which are highly structured and provide attention to a child's specific academic needs, others are able to function in a regular classroom with less specialized attention.

Medication may be helpful in treating some symptoms of PDD, in some children. Child and adolescent mental health professionals help families identify and participate in treatment and educational programs based on an individual child's treatment and educational needs.

No one therapy or method will work for all individuals with Autistic Disorder or PDDNOS. Many professionals and families will use a range of treatments simultaneously, including behavior modification, structured educational approaches, medications, speech therapy, occupational therapy, and counseling. These treatments promote more typical social and communication behavior and minimize negative behaviors (e.g.,

hyperactivity, meaningless, repetitive behavior, self-injury, aggressiveness) that interfere with the child's functioning and learning.

There has been an increasing focus on treating preschool children with PDDNOS by working closely with family members to help the children cope with the problems encountered at home before they enter school. Many times, the earlier these children begin treatment, the better the outcome.

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### **13. Addressing behavior issues**

As children with PDDNOS struggle to make sense of the many things that are confusing to them, they do best in an organized environment where rules and expectations are clear and consistent. The child's environment needs to be very structured and predictable.

Many times a behavior problem indicates that the child is trying to communicate something--confusion, frustration or fear. Think of the child's behavior problem as a message to be decoded. Try to determine the possible cause of the behavior. Has the child's routine or schedule changed recently? Has something new been introduced that may be distressing or confusing the child? When a child's communication skills improve, behavior problems often diminish--the child now has a means of expressing what is bothering him or her, without resorting to negative behavior.

The use of positive behavioral support strategies for these children has proved effective. It is important to remember that:

1. Programs should be designed on an individual basis, because children vary greatly in their disabilities and abilities. Treatment approaches that work in certain cases may not work in others.
2. Children with PDDNOS have difficulty generalizing from one situation to another. The skills they have learned in school tend not to be transferred to the home or other settings. It is very important to be consistent in the treatment of a problem across all areas of the child's life--school, community, and home. This encourages generalization of behavior changes.
3. A home-community-based approach, which trains parents and special education teachers to carry out positive behavioral support strategies, can be instrumental in achieving maximum results.

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## **14. Appropriate educational program**

Education is the primary tool for treating PDDNOS. Many children with PDDNOS experience the greatest difficulty in school, where demands for attention and impulse control are virtual requirements for success. Behavioral difficulties can prevent some children from adapting to the classroom. However, with appropriate educational help, a child with PDDNOS can succeed in school.

The most essential ingredient of a quality educational program is a knowledgeable teacher. Other elements of a quality educational program include:

- structured, consistent, predictable classes with schedules and assignments posted and clearly explained;
- information presented visually as well as verbally;
- opportunities to interact with nondisabled peers who model appropriate language, social, and behavioral skills;
- a focus on improving a child's communications skills using tools such as communication devices;
- reduced class size and an appropriate seating arrangement to help the child with PDDNOS avoid distraction;
- modified curriculum based on the particular child's strengths and weaknesses;
- using a combination of positive behavioral supports and other educational interventions; and
- frequent and adequate communication among teachers, parents, and the primary care clinician.

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## **15. Medical treatment**

The primary aim of medical treatment of children with PDDNOS is to ensure physical and psychological health. A good preventive health care program should include regular physical checkups to monitor growth, vision, hearing, and blood pressure; immunization according to schedule; regular visits to the dentist; and attention to diet and hygiene. An effective medical treatment begins with a thorough medical assessment. The pretreatment assessment is essential for detecting existing medical conditions, such as a seizure disorder.

There is no one specific medication that helps all children with PDDNOS. Some medications have been found to be helpful, but for many children with autism or PDDNOS, medication levels need to be experimented with until the optimal combination and dosage are found. Since this differs with each child, there is no set medical treatment for children with PDDNOS but, rather, an individual medication regimen for each. Because of these complexities, in the eyes of many,

medication therapy is viewed as a treatment to be used only when other types of treatment have been unsuccessful. It is important to note that medication can be effective and necessary for conditions that may coexist in children with PDDNOS, such as attention deficit disorder or obsessive compulsive disorder.

Parents' final decision on whether to use medication as part of their child's therapy is a personal one and should be respected and supported. Medication should *always* be used in conjunction with other therapies, and its effects should be monitored through feedback from the child, parents, and teachers.

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## **16. Psychological treatment**

Counseling may be helpful to families to help them adjust to raising a child with a disability. If the child is already attending a school program, both parents and teachers need to be told of the symptoms of PDDNOS and how those symptoms may affect the child's ability to function at home, in the neighborhood, in school, and in social situations. Psychologists can also provide ongoing assessments, school consultation, case management, and behavior training. Some children also benefit from counseling from an experienced practitioner who knows about PDDNOS. Family teamwork can ease the burden on the primary home caregiver, who needs a support system.

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## **17. Other Therapies and Treatments**

While exploring the treatment options available to help children with PDDNOS, parents and others may come across several therapies that can be used in conjunction with traditional ones.

These are many different kinds from enzyme therapy, to holistic ones.

When considering one of these other therapies for a child, ask questions and carefully assess the program. It's important to ask for a written description of the program, including its length, the frequency of sessions, cost, and the rationale, philosophy, or purpose underlying the program. It's also important to investigate the credentials of the program director and staff and whether evidence exists to prove the effectiveness of the program, as well as the possible negative side effects.

Here are some alternative programs available:

**17.a. Facilitated communication**

This is a method of encouraging people with communication impairments to express themselves. By providing physical assistance, a person, called a facilitator, helps the individual to spell words using a keyboard of a typewriter or computer or other letter display. Facilitation may involve hand-over-hand support or a simple touch on the shoulder. The individual with the impairment initiates the movement while the facilitator offers physical support.

Successful reports of Facilitated Communication therapy have been published over the past few years. But they have not been supported by empirical research.

It appears that Facilitated Communication has the potential for becoming a useful technique for some children with PDDNOS, particularly those who are precocious readers and good with other forms of communication such as computer and signs, but who also are severely impaired in verbal expression skills.

**17.b. Auditory integration therapy (AIT)**

AIT uses a device that randomly selects low and high frequencies from a music source (a cassette or CD player) and then sends these sounds through headphones to the child.

There are reports about the positive effects from AIT. Some of the results that have been reported include diminished sensitivity to sounds, more spontaneous speech, more complex language development, answering questions on topic, more interaction with peers, and more appropriate social behavior.

However, significant results from a well-designed treatment study have not been available. It is still unclear how AIT works and whether people benefit from it.

**17.c. Sensory integration therapy**

Sensory integration is the nervous system's process of organizing sensory information for functional use.

It refers to a normally occurring process in the brain that allows people to put sights, sounds, touch, taste, smells, and movements together to understand and interact with the world around them.

On the basis of assessment results, an occupational therapist who has been trained

in sensory integration therapy guides an individual through activities that challenge his or her ability to respond appropriately to sensory stimulation. This type of therapy is directed toward improving how an individual's senses process stimulation and work together to respond appropriately.

As with other therapies, no conclusive research demonstrates clear progress made through sensory integration therapy, but it is used in many areas.

#### **17.d. The Lovaas method**

This method (which is a type of Applied Behavior Analysis [ABA]), developed by psychologist Ivar Lovaas at UCLA, is an intensive intervention program originally designed for preschool-aged children with autism.

It uses behavioral techniques--molding and rewarding desired behavior, and ignoring or discouraging undesirable actions--to achieve its goals. Generally, this method consists of 30 to 40 hours a week of basic language skills, behavior, and academic training. Therapy usually consists of 4 to 6 hours per day of one-on-one training, 5 to 7 days a week. Some research has shown remarkable progress in about 50% of the children receiving this therapy.

The Lovaas Method is getting wide attention, but, as with other therapies, it needs more study.

#### **17.e. Vitamin therapy**

Some anecdotal evidence has shown that Vitamin B6 and magnesium help children with autism and PDDNOS. The reasoning for this is that Vitamin B6 helps the formation of neurotransmitters, which are thought to malfunction in such children.

#### **17.f. Dietary intervention**

Some individuals with PDDNOS have been found to have food sensitivities or food allergies. For example, some foods seem to increase hyperactivity and autistic-like behavior. Eliminating these from the child's diet has been found to help decrease negative behaviors.

#### **17.g Anti-yeast therapy**

Often the progression of autism and PDDNOS involves unusual behaviors and communication problems arising around the toddler stage, when many children

are treated with antibiotics for problems such as middle ear infections. Antibiotics can upset the intestinal flora and possibly cause "yeast overgrowth."

Some parents have found that giving their child an anti-yeast medication decreases some negative behaviors.

Some preliminary study findings support this type of treatment; however, the results are not conclusive.

### **17.h Summary**

Since well-designed studies of these therapies have not been conducted, their effectiveness in treating PDDNOS is unclear.

However you can get to know more about the alternate therapies at the following links:

### **Alternate therapy Sites**

Jayna Girl web Site	<a href="http://jaynagirl.cwd-cragin.com/?Script=therapies">http://jaynagirl.cwd-cragin.com/?Script=therapies</a>
Enzyme stuff	<a href="http://www.enzymestuff.com/conditionpdd.htm#3">http://www.enzymestuff.com/conditionpdd.htm#3</a>
Healing Arts	<a href="http://www.healing-arts.org/children/">http://www.healing-arts.org/children/</a>
answers.com	<a href="http://www.answers.com/topic/autism-therapies">http://www.answers.com/topic/autism-therapies</a>
BBBAutism Support Network	<a href="http://www.bbbautism.com/vol_5_iss_1_therapies_one.htm">http://www.bbbautism.com/vol_5_iss_1_therapies_one.htm</a>
Native Remedies.com	<a href="http://www.nativeremedies.com/autism-aspergers-rett-pdd.shtml?ovchn=OTHER&amp;ovcpn=RSS&amp;ovcrn=Autism&amp;ovtac=CTX">http://www.nativeremedies.com/autism-aspergers-rett-pdd.shtml?ovchn=OTHER&amp;ovcpn=RSS&amp;ovcrn=Autism&amp;ovtac=CTX</a>
Kid Power	<a href="http://www.kid-power.org/therapies.html">http://www.kid-power.org/therapies.html</a>
Neurotherapy Centres	<a href="http://www.neurotherapycenters.com/">http://www.neurotherapycenters.com/</a>
Recovery From PDD	<a href="http://recoveryfrompdd.com/">http://recoveryfrompdd.com/</a>

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## **18. Helping Children at Home**

Parents can use many techniques and treatments to help their young child with PDDNOS at home. These techniques should be discussed with other family members and the professionals who are working with the child, so that the individuals close to the child may employ the same methods. This will help the child generalize skills learned at home to other settings, such as at school and in the community. Parents can work at improving communication skills and social skills. See the separate [NICHCY Resources on Autism and PDD](#), available online, for publications on techniques to use with children with PDDNOS.

## **21. Links**

Autism Coalition: [www.autismcoalition.com/](http://www.autismcoalition.com/)

Autism Patient Center: [www.patientcenters.com/autism/](http://www.patientcenters.com/autism/)

Autism-PDD Resources Network: [www.autism-pdd.net/](http://www.autism-pdd.net/)

Division TEACCH: [www.teacch.com/](http://www.teacch.com/)

Indiana Resource Center for Autism: [www.iidc.indiana.edu/irca/](http://www.iidc.indiana.edu/irca/)

National Institute of Child Health and Human Development:  
[www.nichd.nih.gov/publications/pubskey.cfm](http://www.nichd.nih.gov/publications/pubskey.cfm)

Medical university of South Carolina  
<http://www.muschealth.com/gs/healthtopic.aspx?action=showpage&pageid=P02561>

First Signs <http://www.firstsigns.org/index.html>

The Source [http://www.maapservices.org/MAAP\\_Sub\\_Find\\_It\\_-\\_Publications\\_Luke\\_Tsai\\_MD\\_Article.htm](http://www.maapservices.org/MAAP_Sub_Find_It_-_Publications_Luke_Tsai_MD_Article.htm)

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

**Asperger Syndrome Coalition of the United States, Inc.** (ASC-U.S.), 2020 Pennsylvania Ave., NW, Box 771, Washington, DC 20006. Telephone: 1-866-427-7747. Web: <http://www.asperger.org/>

**Autism Society of America**, 7910 Woodmont Avenue, Suite 300, Bethesda, MD 20814. Telephone: 1-800-328-8476. Web: <http://www.autism-society.org/>

**International Rett Syndrome Association**, 9121 Piscataway Road, Clinton, MD 20735. Telephone: 1-800-818-RETT; (301) 856-3334. Web: <http://www.rettsyndrome.org/>

**Autism Information Center**

Centers for Disease Control and Prevention

404-639-3534

800-311-3435

[www.cdc.gov/ncbddd/dd/ddautism.htm](http://www.cdc.gov/ncbddd/dd/ddautism.htm)

**Autism Society of America**

301-657-0881

800-328-8476

[www.autism-society.org](http://www.autism-society.org)

**Autism Treatment Network**

503-783-2710

[www.autismtreatmentnetwork.org](http://www.autismtreatmentnetwork.org)

**Cure Autism Now**

323-549-0500

888-828-8476

[www.cureautismnow.org](http://www.cureautismnow.org)

**Indiana Resource Center for Autism**

Indiana Institute on Disability & Community

812-855-6508

812-855-9396 (tty)

[www.iidc.indiana.edu/irca](http://www.iidc.indiana.edu/irca)

**MAAP Services for Autism & Asperger Syndrome**

219-662-1311

[www.asperger.org](http://www.asperger.org)

**National Alliance for Autism Research**

888-777-6227

[www.naar.org/](http://www.naar.org/)

**National Institutes of Health**

**Autism Research Network**

[www.autismresearchnetwork.org/AN/](http://www.autismresearchnetwork.org/AN/)

**O.A.S.I.S. Online Asperger Syndrome Information and Support**

[www.aspergersyndrome.org/](http://www.aspergersyndrome.org/)

**Professional Development in Autism Center**

206-543-4011

<http://depts.washington.edu/pdacent/>

**Yale Child Study Center**

**Yale Social Learning Disabilities Project**  
[www.autism.fm](http://www.autism.fm)

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