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## What is Asperger's Disorder?

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Asperger's Disorder is a milder variant of Autistic Disorder. Both Asperger's Disorder and Autistic Disorder are in fact subgroups of a larger diagnostic category. This larger category is called either Autistic Spectrum Disorders, mostly in European countries, or Pervasive Developmental Disorders ("PDD"), in the United States. In Asperger's Disorder, affected individuals are characterized by social isolation and eccentric behavior in childhood. There are impairments in two-sided social interaction and non-verbal communication. Though grammatical, their speech is peculiar due to abnormalities of inflection and a repetitive pattern. Clumsiness is prominent both in their articulation and gross motor behavior. They usually have a circumscribed area of interest which usually leaves no space for more age appropriate, common interests. Some examples are cars, trains, French Literature, door knobs, hinges, cappuccino, meteorology, astronomy or history. The name "Asperger" comes from Hans Asperger, an Austrian physician who first described the syndrome in 1944. An excellent translation of Dr. Asperger's original paper is provided by Dr. Uta Frith in her [Autism and Asperger Syndrome](#).

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## What is the epidemiology of Asperger's Disorder?

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- In a total population study of children between ages 7-16 in Goteborg, Sweden, minimum prevalence of Asperger's Disorder was 36/10,000 (55/10,000 of all boys, and 15/10,000 of all girls), and the male/female ratio was 4:1.
  - The prevalence of autism has traditionally been estimated around 4-5/10,000. A recent study from United Kingdom found the prevalence of autism at 17/10,000, and the prevalence of all Autistic Spectrum Disorders (including autism) at 63/10,000.
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## What are the differences between Asperger's Disorder and 'High Functioning' (i.e. IQ > 70) Autism?

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It is believed that in Asperger's Disorder

- onset is usually later
- outcome is usually more positive

deficits are less severe  
are more prominent  
than performance IQ (in autism, the case is usually

the reverse)

- clumsiness is more frequently seen
- family history is more frequently positive
- neurological disorders are less common

## What is the biology of Asperger's Disorder?

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Despite the now widely accepted fact that biological factors are of crucial importance in the etiology of autism, so far the brain imaging studies have shown no consistent pattern, no consistent evidence of any type of lesion, and no single location of any lesion in subjects with autistic symptoms. This inconsistency in the results of various brain imaging studies has been attributed to the fact that people with autism represent a highly heterogeneous group in terms of underlying pathology. Therefore there is an ongoing effort to specify more homogenous subgroups among autistic individuals to enhance the accuracy of etiologic inquiry. This approach has been supported with the inclusion of the diagnosis 'Asperger's Disorder' in the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) of the American Psychiatric Association.

Associated medical conditions such as [fragile-X syndrome](#), [tuberous sclerosis](#), [neurofibromatosis](#), and [hypothyroidism](#) are less common in Asperger's Disorder than in classical autism. Therefore it may be expected that there are fewer major structural brain abnormalities associated with Asperger's Disorder than with autism. To our knowledge, a very small number of structural brain abnormalities have been so far associated with Asperger's Disorder, which include left frontal macrogyria, bilateral opercular polymicrogyria, and left temporal lobe damage. On the other hand brain imaging techniques like positron emission tomography ([PET](#)), and single photon emission tomography ([SPECT](#)) which provide information about the functional status of brain may be more helpful in determining the brain dysfunction in individuals with Asperger's Disorder. Detailed neuropsychological testing may support these findings providing information about the performances of individual right or left hemispheric brain regions. [The first SPECT study in a patient with Asperger's Disorder](#) was published by the host of this page and his colleagues, and found left parietooccipital hypoperfusion. Continuation of research in Asperger's Disorder with various brain imaging techniques in coordination with neuropsychological evaluation in larger samples is clearly needed in this area.

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## What are the diagnostic criteria of Asperger's Disorder?

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### DSM-IV DIAGNOSTIC CRITERIA FOR ASPERGER'S DISORDER

al interaction, as manifested by at least two of

- (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 or Schizophrenia.*

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## GILLBERG'S CRITERIA FOR ASPERGER'S DISORDER

*1.Severe impairment in reciprocal social interaction  
(at least two of the following)*

- (a) inability to interact with peers
- (b) lack of desire to interact with peers
- (c) lack of appreciation of social cues
- (d) socially and emotionally inappropriate behavior

*2.All-absorbing narrow interest  
(at least one of the following)*

- (a) exclusion of other activities

*3. Imposition of routines and interests  
(at least one of the following)*

- (a) on self, in aspects of life
- (b) on others

*4. Speech and language problems  
(at least three of the following)*

- (a) delayed development
- (b) superficially perfect expressive language
- (c) formal, pedantic language
- (d) odd prosody, peculiar voice characteristics
- (e) impairment of comprehension including misinterpretations of literal/implied meanings

*5. Non-verbal communication problems  
(at least one of the following)*

- (a) limited use of gestures
- (b) clumsy/gauche body language
- (c) limited facial expression
- (d) inappropriate expression
- (e) peculiar, stiff gaze

*6. Motor clumsiness: poor performance on neurodevelopmental examination*

*(All six criteria must be met for confirmation of diagnosis.)*

**What are the other psychological problems that can co-exist with Asperger's Disorder?**

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Asperger's Disorder may not be the only psychological condition affecting a certain individual. In fact, it is frequently together with other problems such as:

- Attention Deficit Hyperactivity Disorder (ADHD)
- Oppositional Defiant Disorder (ODD)
- Depression (Major Depressive Disorder or Adjustment Disorder with Depressed Mood)
- Bipolar Disorder
- Generalized Anxiety Disorder
- Obsessive Compulsive Disorder

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### ***Attention Deficit Hyperactivity Disorder (ADHD)***

Attention Deficit Hyperactivity Disorder presents with difficulty in focusing (inattention), hyperactivity and impulsiveness. Almost 60-70 % of children with Pervasive Developmental

Disorders) have severe enough inattention, hyperactivity  
tic criteria for ADHD. Technically, if a child is diagnosed  
: Disorder, Asperger's Disorder, PDD-NOS or others), a  
separate ADHD diagnosis cannot be made. However, I believe that it is important to recognize  
the presence of co-existing ADHD since this syndrome can respond to medication treatment,  
unlike the core PDD symptoms. When ADHD co-exists with Asperger's Disorder, anger may  
easily turn to aggression because of the individual's impulsiveness. Methylphenidate (Ritalin,  
Concerta, Metadate, Focalin), dextroamphetamine (Dexedrine, Adderall), atomoxetine  
(Strattera), bupropion (Wellbutrin) or tricyclic an **What is the treatment of Asperger's  
Disorder?**

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There is no specific treatment or "cure" for Asperger's Disorder. All the  
interventions outlined below are mainly symptomatic and/or rehabilitational.

### *Psychosocial Interventions*

- Individual psychotherapy to help the individual to process the feelings  
aroused by being socially handicapped
- Parent education and training
- Behavioral modification
- Social skills training
- Educational interventions

### *Psychopharmacological Interventions*

- For hyperactivity, inattention and impulsivity: Psychostimulants  
(methylphenidate, dextroamphetamine, metamphetamine), clonidine,  
Tricyclic Antidepressants (desipramine, nortriptyline), Strattera  
(atomoxetine)
- For irritability and aggression: Mood Stabilizers (valproate, carbamazepine,  
lithium), Beta Blockers (nadolol, propranolol), clonidine, naltrexone,  
Neuroleptics (risperidone, olanzapine, quetiapine, ziprasidone, haloperidol)
- For preoccupations, rituals and compulsions: SSRIs (fluvoxamine, fluoxetine,  
paroxetine), Tricyclic Antidepressants (clomipramine)
- For anxiety: SSRIs (sertraline, fluoxetine), Tricyclic Antidepressants  
(imipramine, clomipramine, nortriptyline)

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tidepressants (imipramine, nortriptyline and others) may be beneficial

for more information go to [www.aspergers.com](http://www.aspergers.com)  
or contact the Autism Association