

# Asperger's Disorder: A Review of Its Diagnosis and Treatment

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**Asperger's disorder is a pervasive developmental disorder that shares similar features of social impairment disorder, restricted interests, and repetitive behaviors with autistic disorder. Although both Asperger's disorder and autistic disorder persist into adulthood, autistic disorder is usually apparent before the age of 3, while Asperger's disorder usually manifests itself at preschool age. Asperger's disorder in the majority of cases is not associated with delay in language development and there is an increased likelihood to seek social interactions and to engage in activities and friendship with others. In contrast to autistic disorder, most Asperger's disorder patients have normal intellectual functioning and some have motor clumsiness.**

**A**SPERGER'S DISORDER, more commonly known as Asperger's syndrome, was first described in 1944 by the Austrian pediatrician, Hans Asperger. He described it as a developmental disorder, which he named "autistic psychopathy."<sup>1</sup> Earlier in 1943, Leo Kanner in the United States published his original account of "early infantile autism"; however, the two were unaware of each other's work.<sup>2</sup> In Asperger's original description of autistic psychopathy, the children, all of whom were male with normal intelligence, exhibited a qualitative impairment in reciprocal social interaction and behavior oddities without delays in language development.<sup>3,4</sup> Asperger also noted that these children had poor coordination with motor clumsiness, and extreme interest in memorizing all the detail of bus and train schedules of Vienna.<sup>1</sup> In Kanner's description of early infantile autism, he described a triad of (1) qualitative impairment in social interaction, (2) qualitative impairment in communication, and (3) restrictive, repetitive, and stereotyped behaviors, interests, and activities.

Following Kanner's description of early infantile

Although the etiology of Asperger's disorder is still undetermined, this article will review the assessment and treatment interventions that could improve the prognosis of this illness. The historical background, epidemiology, diagnostic features, differential diagnosis, and course and overall management/treatment of Asperger's disorder will be discussed. Despite the absence of a cure for Asperger's disorder, the awareness of its distinctive clinical features that differentiate it from autistic disorder could improve its prognosis and differentiate response to treatment and comorbid conditions.

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tile autism, clinicians became aware of a larger number of children who shared similar characteristics but did not have adequate criteria to be diagnosed with autistic disorder.<sup>2</sup> In 1979, Wing and Gould suggested the term "autistic spectrum disorder" to describe a group of children who present with the triad of impairments in two-way social interactions, communication, and imaginative activities but are not classified as autistic disorder.<sup>5</sup>

Up to that time there had been an extensive literature on child autism, but the autistic spectrum disorders had not been systematically described or studied. Then in 1981 Wing suggested that Asperger's syndrome be considered as a type of autistic spectrum disorder and described in detail its various manifestations in speech, nonverbal communication, social interactions, motor coordination, and idiosyncratic interests.<sup>6</sup> DSM-III<sup>7</sup> and DSM-III-R<sup>8</sup> were the first classification systems to specify these atypical children as being diagnosed with childhood-onset pervasive developmental disorder (PDD), and PDD "not otherwise specified."<sup>9</sup>

In 1989 the Swedish psychiatrist Christopher Gillberg described a more elaborate set of criteria to capture the uniqueness of Asperger's syndrome children.<sup>10</sup> He detailed their social impairment, speech and language peculiarities, and difficulties with nonverbal communication along with narrow interest, repetitive routines, and motor clumsiness.<sup>11</sup> In 1989 Szatmari and others also reviewed the clinical features of Asperger's syndrome and clarified the fact that it is separate from autism.<sup>9</sup> In 1990 the International Classification of Diseases (ICD-10)<sup>12</sup> and in 1994 the DSM-IV<sup>13</sup> identified

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Asperger's syndrome as being a PDD subtype with specific diagnostic criteria that are different from autistic disorder. The validity of Asperger's disorder as a different diagnostic entity has been documented through several lines of evidence, including a DSM-IV field trial.<sup>14-17</sup> Among these differences are higher verbal intelligence quotient (IQ) than performance IQ, which is often associated with a nonverbal learning disability.<sup>14</sup> This differs from autistic disorder that is not associated with mental retardation in which, typically, nonverbal skills are more likely to be higher than or equivalent to verbal skills.<sup>15</sup> Also there appears to be a higher incidence of Asperger's disorder in first-degree relatives.<sup>16</sup> In addition, there is a different pattern of comorbidity in Asperger's disorder, with a higher level of psychosis, violent behavior, and depression.<sup>17</sup>

#### EPIDEMIOLOGY

Information on the prevalence of Asperger's disorder is limited, and although it appears to be more common in males, the prevalence rate may depend on the stringency of the diagnostic criteria used for case selection.<sup>18</sup> An epidemiological study determined a prevalence of 3.6 per 1,000 children with a male-to-female ratio of 4:1.<sup>18</sup> However, when possible cases were included, the prevalence rate changed to 7.1 per 1,000 children with a male-to-female ratio of 2.3:1.<sup>19</sup> A stringent approach to the diagnosis would suggest a rate of 1 in 10,000 with an apparent 9:1 male predominance. Gillberg and Gillberg found Asperger's syndrome to be five times as common as autism.<sup>11</sup>

It is estimated that about 50% of children with Asperger's disorder reach adulthood without ever being evaluated, diagnosed, or treated.<sup>20</sup>

#### ETIOLOGY

Although the precise cause of Asperger's disorder is still undetermined, genetic, metabolic, infectious, and peripheral factors have been suggested as possible etiologies.<sup>21</sup> Available familial studies appear to show an increased frequency of Asperger's disorder among family members of individuals who have the disorder.<sup>9</sup> Right-cerebral hemisphere dysfunction, structural brain abnormalities, and disturbances in the limbic system as well as in the dopaminergic and serotonergic neurochemical systems also have been implicated as the possible etiology of Asperger's disorder.<sup>10,22,23</sup>

**Table 1. ICD-10 Research Diagnostic Criteria for Asperger's Syndrome**

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- A. A lack of any clinically significant general delay in language or cognitive development. Diagnosis requires that single words should have developed by 2 years of age or earlier and that communicative phrases be used by 3 years of age or earlier. Self-help skills, adaptive behavior, and curiosity about the environment during the first 3 years should be at a level consistent with normal intellectual development. However, motor milestones may be somewhat delayed and motor clumsiness is usual (although not necessary diagnostic feature). Isolated special skills, often related to abnormal preoccupations, are common, but are not required for diagnosis.
  - B. Qualitative impairments in reciprocal social interaction (criteria for autism).
  - C. Restricted, repetitive, and stereotyped patterns of behavior, interests, and activities (criteria for autism).
  - D. The disorder is not attributed to the other varieties of pervasive developmental disorder; schizotypal disorder; simple schizophrenia; reactive and disinhibited attachment disorder of childhood; obsessional personality disorder; obsessive-compulsive disorder.
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Reprinted from World Health Organization. Classification of Mental and Behavioural Disorders Clinical Description and Diagnostic Guidelines. Geneva, Switzerland: World Health Organization, 1992.

#### DIAGNOSTIC AND CLINICAL FEATURES

The diagnostic criteria of Asperger's syndrome as described in the ICD-10 research diagnostic criteria are summarized in Table 1,<sup>12</sup> while DSM-IV diagnostic criteria for Asperger's disorder are outlined in Table 2.<sup>13</sup> The unique characteristics of Asperger's syndrome as elaborated by Gillberg are described in Table 3.<sup>11</sup>

#### DIFFERENTIAL DIAGNOSIS

The differential diagnosis of patients with Asperger's disorder is at times complicated by the fact that it may coexist with disorders like Tourette's disorder<sup>10</sup> and other psychiatric conditions,<sup>10,24</sup> including attention deficit hyperactivity disorder (ADHD), anxiety disorders, mood disorders, learning disability, motor clumsiness, antisocial behavior, and unusual social interactions.<sup>10,20,24</sup>

Sometimes children with Asperger's disorder are first diagnosed as "aphasic" or "dysphasic" or "language-disordered" because of their difficulty processing language in the same way as normal children.<sup>3</sup>

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