DSM-IV criteria were reliable and accurate in differentiating pervasive developmental disorder (PDD) from non-PDD and autism from Asperger's disorder

Mahoney WJ, Szatmari P, MacLean JE, et al. ***Reliability and accuracy of differentiating pervasive developmental disorder subtypes.*** *J Am Acad Child Adolesc Psychiatry 1998 Mar;**37**:278–85.*

Question
What is the reliability and accuracy of differentiating subtypes of pervasive developmental disorders (PDD) using *DSM-IV* criteria?

Design
In the absence of a true diagnostic standard, 2 methods were used to determine accuracy: (1) blinded comparison between the clinician's diagnosis and the consensus best estimate; and (2) accuracy of 3 raters estimated using latent class analysis.

Setting
Southern Ontario, Canada.

Patients
143 children (mean age 113 months, 76% boys) with various types of developmental disabilities and with a possible diagnosis of PDD made by a referring health professional. Children with any neurological or chromosomal condition that had known genetic implications were excluded.

Description of tests and diagnostic standard
Patients were diagnosed as PDD, PDD subtype, or non-PDD by 1 experienced physician using a clinical assessment, available clinical records, the Autism Diagnostic Interview-Revised (ADI-R) and the Autism Diagnostic Observation Schedule (ADOS). The raw data from the ADI-R, clinical notes (excluding diagnostic opinion), ADOS, IQ, Vineland Adaptive Behavior Scales standard scores, and Austism Behavior Checklist were independently assessed by 3 experienced raters, each of whom made a separate, blind diagnosis according to *DSM-IV* criteria (criteria for Asperger's disorder were modified; if a child met criteria for both autism and Asperger's, the child was given a diagnosis of Asperger's). A consensus best estimate diagnosis was made after discussion if there was disagreement.

Main outcome measures
Reliability and accuracy (calculated by comparing the agreement between the clinician's diagnosis and the consensus best estimate, and by calculating the error rates associated with the 3 raters).

Main results
The *DSM-IV* criteria for PDD and for autism were reliably applied by the 3 raters, and the modified version of *DSM-IV* criteria for Asperger's disorder was also reliable. The agreement among the raters on whether a child had atypical autism (PDD-NOS) *v* autism was poor. The clinician and the consensus best estimate diagnosis showed excellent agreement on a diagnosis of non-PDD (κ 0.81), modest agreement on a diagnosis of autism (κ 0.56), and Asperger's disorder (κ 0.52), but very poor agreement on a diagnosis of atypical autism (κ 0.29). In the latent class analysis, the 3 raters were able to differentiate autistic from non-PDD children and autistic from Asperger's disorder children with very good accuracy (false negative error rates 0.05 and 0.13, respectively). However, the error rate in differentiating children with autism from children with atypical autism was much larger (false negative error rate 0.49).

Conclusion
DSM-IV criteria were reliable and accurate in differentiating pervasive developmental disorder (PDD) from non-PDD children and for identifying children with autism and Asperger's disorder, but *DSM-IV* criteria were unreliable and less accurate in differentiating children with typical autism from those with atypical autism.

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Commentary

In children with suspected pervasive developmental disorder (PDD), it is important to have reliable diagnostic criteria because there are no definitive laboratory investigations. This study by Mahoney *et al* confirms the reliability of the modifications made by the authors to the criteria for Asperger's disorder. Many clinicians have been making these modifications in their practice, and this study confirms the validity of doing so. The modifications minimise the differences between high functioning autism and Asperger's and it was still possible to distinguish between the 2 disorders.

The clinicians involved in the study were unable to reliably distinguish between those children with autism and atypical autism, a similar finding to that of an earlier study.[1] This has important clinical implications, particularly when parents seek a second opinion. There is no evidence that autism and atypical autism differ in aetiology, prognosis, or treatment. Because we have no evidence that it is possible to reliably differentiate between the 2 disorders and no clinical reason to try and do so, clinicians should stop making the distinction between the disorders until reliable criteria are developed.

The study population did not include any children with disintegrative disorder or Rett's disorder so nothing can be said about the reliability of the criteria for these PDD subtypes. In clinical practice, it is easier to distinguish children with these 2 subtypes than it is to distinguish between autism and atypical autism.

The results of this study suggest that in compiling *DSM-V*, revisions need to be made to the criteria for autism and atypical autism. The *DSM-IV* criteria do not allow us to reliably distinguish between the disorders. New criteria should be developed for *DSM-V*. The 2 disorders should not be listed separately if field testing does not show that it is possible to reliably differentiate between the disorders.

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1 Volkmar FR, Klin A, Siegel B. Field trial for autistic disorder in DSM-IV. *Am J Psychiatry* 1994;**151**:1361–7.