

long-term treatment for these issues, but it is crucial that they be addressed and taken seriously to allow the child to develop as optimally as possible.

#### CLINICAL VIGNETTE

Parents brought their 10-year-old fourth-grade son for evaluation because of increasing behavioral problems at home and at school. He had always had difficulties in school—fidgeting, calling out in class, being disorganized and disruptive. He had begun to act out behaviorally in school when called on in class. He spoke to his teacher in a disrespectful manner and did not complete his work. At home he refused to do his homework and became angry and shouted, slammed doors, and stomped off when his parents tried to insist. On evaluation, he seemed easily distracted and very defensive and difficult to engage about any perceived inadequacies. A Conner's Scale of attention deficit hyperactivity disorder symptoms completed by the teacher and parents suggested a high level of symptoms. Further investigation revealed a family history of ADHD and learning disabilities. A recommendation was made for psychoeducational testing, which demonstrated above-average overall cognitive ability with a specific reading disability. In formulation, the *predisposing* factors (family genetics for ADHD and a reading disability) and *precipitating* factors (increasing expectations in school and at home as he got older) were manifested in oppositional and defiant behavior to ward off feelings of inadequacy academically and in his inability to control his impulses. This was *perpetuated* by a family and school stance of punitive consequences for misbehavior and unreasonably high expectations for this otherwise bright boy. *Protective* factors included above-average overall cognitive skills, concerned parents, athletic abilities, and some assistance with reading, including the use of tapes, oral tests, extra time for tests, and modifications of assignments. Special accommodations for the ADHD symptoms, including preferential seating near the teacher, subtle cues to gain and focus attention, and organizational assistance were recommended, along with the recommendation for a stimulant medication trial. Parent counseling and psychoeducation and child anger management training were also suggested. When these interventions were implemented, the child made significant improvements.

## II

# AXIS I DISORDERS USUALLY FIRST DIAGNOSED IN INFANCY, CHILDHOOD, OR ADOLESCENCE



## BASIC PRINCIPLES

It should not be assumed that children with special learning needs will have other psychiatric difficulties. However, children with mental retardation have a three to four times higher incidence of other psychiatric disorders than children with average cognitive skills. Mentally retarded children are at high risk for social ostracism. Additionally, the neuropathology underlying the learning or cognitive dysfunction may contribute to certain aberrant behaviors. Executive and problem-solving skills are impaired concomitantly with the overall cognitive delay.

## KEY POINT

Individuals with mental retardation consist of a widely variable group of children. Each child must be individually evaluated regarding special learning needs, as well as emotional level of functioning, to formulate an individualized educational (and possibly mental health) plan. Remember to assess strengths as well as deficits.

## DIAGNOSTIC CRITERION AND EPIDEMIOLOGY

Mental retardation is diagnosed on Axis II in the DSM multi-axial diagnostic scheme. The diagnosis of mental retardation requires the concomitant impairment in cognitive functioning, as well as impairments in adaptive functioning (person's effectiveness in meeting age-expected standards in communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health and safety). It is estimated that about 1% of the population meet these criteria. Tables 3.1 and 3.2 define the severity levels of mental retardation, as well as the possible etiologies.

## COMORBID MENTAL DISORDERS

It is estimated that 30 to 70% of mentally retarded children also suffer from a psychiatric disorder. Neurobiological as well as environmental factors (stigmatization, feeling of failure in school) put these children at very high risk. The most common associated mental disorders are attention deficit

## 3 Mental Retardation

## Essential Concepts

- Assessment and clarification of learning, cognitive, and developmental disorders are essential to providing appropriate interventions
- Early diagnosis and appropriate and intensive interventions for developmental delay improve prognosis
- A systems-based approach is needed to work with developmentally disabled children and families
- Inventory strengths as well as deficits and areas of need
- Other psychiatric disorders (mood, anxiety, behavioral) are more common in children with mental retardation.

Many children with mental retardation are never referred to a child and adolescent psychiatrist or mental health professional of any kind. Pediatricians, family practitioners, pediatric neurologists, special educators, speech and language and physical or occupational therapists tend to provide services for these children. Birth to Three Early Intervention provides crucial services in the early identification and early treatment intervention of children with developmental and cognitive disorders. However, trainees and practitioners in child and adolescent psychiatry need to be comfortable and competent working with children with these disorders, as the comorbidity with other psychiatric disorders of mood, anxiety, and behavior are extremely high. Working with children with developmental disabilities requires a high degree of comfort and sophistication in collaborating in a multidisciplinary system of care to provide the full range of services needed to optimize outcome.



**TABLE 3.1. Mental Retardation (Axis II except Borderline on Axis I)**

Severity	Approximate IQ Range
Borderline	71–84
Mild	50–55 to 70
Moderate	35–40 to 50–55
Severe	20–25 to 35–40
Profound	Below 20–25

hyperactivity disorder, pervasive developmental disorders, mood and anxiety disorders, stereotypic movement disorder, and mental disorders due to a general medical condition (such as dementia due to head trauma).

There are a few mental retardation symptoms that are associated with specific genetic syndromes and place a child at high risk of specific psychiatric disorders. Individuals with: Down syndrome are at higher risk for developing Alzheimer-type dementia; fragile X syndrome are at increased risk for ADHD and social phobia; Prader-Willi syndrome frequently demonstrate hyperphagia and obsessive and compulsive symptoms; Williams syndrome have high risk for anxiety disorders and ADHD.

**TABLE 3.2. Etiology of Mental Retardation**

Type	Description
Hereditary	Familial or sporadic chromosomal aberrations
Early alterations (embryonic development)	Prenatal damage due to infection, toxins, and substance abuse, or etiology unknown
Pregnancy, perinatal problems	Fetal malnutrition, prematurity, hypoxia, viral and other infections, and trauma
Medical conditions of infancy	Infections (esp. CNS), traumas, poisoning (e.g., lead) Other illnesses (e.g., thyroid, cancers and treatment)
Environmental influences	Severe early neglect or abuse, malnutrition



Medications may be used to treat the comorbid psychiatric disorder in children and adolescents with cognitive delays who demonstrate psychiatric disorders which may benefit from the medication. However, in general “start lower and go slower” on initial dosages and medication titrations, as there may be increased sensitivity to side effects.



The primary goal of treatment is to improve the quality of life of a child or adolescent with cognitive delay, and help him or her achieve the highest level of functioning possible.



The role of the child and adolescent psychiatrist in working with individuals with mental retardation was specified by the American Academy of Child and Adolescent Psychiatry as 1) provision of clinical services; 2) prevention of mental disorders through early diagnosis and provision of emotional supports to the child and family; 3) research; 4) learning skills that are also useful in the practice of psychiatry in general.

#### CLINICAL VIGNETTE

Jason is an active, cute and engaging 5-year-old boy who is in kindergarten at his local elementary school. He was in a family day care prior to beginning kindergarten. He is an only child of parents who are hard-working and caring, but neither of whom received a high school education, having dropped out and then conceived Jason when the mother was 17 years of age. His mother had used substances (alcohol and marijuana), but stated that she stopped when she found out she was pregnant.

Jason made a reasonable adjustment to kindergarten socially, although the teacher has reported that he is inattentive, easily distractible, and refuses to do his letter, number,



and other work. When she insists, he tends to become oppositional and defiant (refusing or pushing and hitting her) or to scribble and not put forth good effort. He is referred to you for evaluation of possible ADHD. On examination, Jason seems delayed in his fine motor skills and speech, with some immature articulation as well as sparse speech. The pediatrician noted early developmental delays in all spheres. You request cognitive and academic evaluations, which demonstrate a full-scale IQ on the Wexler Preschool and Primary Scales of Intelligence (WPPSI) of 62 (the mean is 100), with preacademic skills similarly low. Additionally, his adaptive functioning is delayed in communication, self-care, home and community living, and functional academic skills. He is diagnosed with mild mental retardation. You recommend special education services to address his learning needs. When he is provided with periods of the day with small group or individual attention for his academic subjects, his behaviors improve. However, a high degree of inattention and distractibility still seems to be impairing his ability to learn. You begin a low dose (2.5 mg and titrate up to 5 mg in morning and at noon) of methylphenidate, which seems to be effective for his inattention. Jason's behavior and effort improve. A multidisciplinary treatment group, which includes speech and language and special education services, the pediatrician, in-home service providers to help his parents provide an enriched environment and structure at home, and you as the child and adolescent psychiatrist provide an array of services for this child and family, to the benefit of the child's functioning. Three years later, his follow-up cognitive testing suggests a full-scale IQ of 69, with educational functioning in the mid-70s. Adaptive functioning and overall behavioral control have also improved.

#### KEY POINT

Although psychological tests are becoming normed to a wider range of cultures and ethnicities, clinicians need to be sensitive to these issues in interpreting tests. Test results may not be accurate in children whose primary language is not English. Additionally, preschool children's testing may not be as reliable (remain the same over time) as for older children.

## Assessment

The individual administration of both a standardized cognitive test (such as the Wechsler Intelligence scale for children, WISC-IV; the Kaufman Assessment Battery for Children, K-ABC; the Stanford Binet Intelligence Scale 4th edition, or others) and a measure of adaptive functioning (such as the Vineland Adaptive Behavior Scale) is required for diagnosis of mental retardation. The tests should be administered in the child's dominant language whenever possible and estimates of the validity of test administration considered. If the child is nonverbal, there are tests (such as the Comprehensive Test of Nonverbal Intelligence, C-TONI or the Leiter International Performance Scale) that may be used.

Medical evaluation and collaboration with the primary care physician is an important aspect to the evaluation. Medical evaluation includes a careful prenatal and developmental history, family history, neurological evaluation, laboratory screening (thyroid, lead, and routine labs, as well as investigation of rarer inborn errors of metabolism, VDRL, and chromosomal analysis, as appropriate), as well as possibly brain imaging (MRI) and electroencephalogram (EEG) to rule out seizures.

The differential diagnosis of mental retardation includes hearing or visual impairment, autism and other pervasive developmental disorders, learning disabilities or borderline cognitive functioning, and severe early neglect or abuse.

## Treatment

Early detection and developmentally sensitive multimodal treatment are required for optimal outcomes. Another key element is parent guidance and support, as the diagnosis of mental retardation is quite devastating to parents. Birth to Three services can assist with the early assessment and intervention. Recommended services typically include speech and language therapy, physical or occupational therapy, early stimulation, advocacy for services, educational and environmental planning, behavior management, and teaching of functional and self-care skills. Standard therapies are used for psychiatric comorbidities, with the careful and judicious use of medication, as appropriate. In-home behavioral services and respite care opportunities may also be indicated. It is important that the services are well coordinated and that there is good multidisciplinary collaboration in the care of children with complex and multiple disabilities.



Prognosis is variable, depending on the type and severity of the mental retardation. In general, children with mild mental retardation (85% of those with MR) can anticipate gaining academic skills at about the sixth-grade level, with the ability to hold a job and function with minimal supports in the community. Prognosis is markedly improved with early intervention and education, a focus on job skills and independent living skills, good medical care of physical and psychiatric illness, and a supportive environment.



#### TIP

Many child and adolescent psychiatrists never gain the skills and comfort level to work with severely mentally retarded children. Odd or unpredictable behavior may be off-putting, deficits in language skills make diagnosis and treatment especially challenging, and the risk of aggressive behavior in some children may be frightening. However, I have found working with this group of children to be highly gratifying. Interventions can be quite helpful. Your child and adolescent psychiatry expertise in providing assistance to the family, the school, and the child may make a substantial positive influence on the child's prognosis.

## 4 Learning Disorders

### Essential Concepts

- A learning disability is a significant discrepancy between assessed cognitive ability and assessed academic achievement.
- Learning disorders of reading, mathematics, and written language are defined in the Diagnostic and Statistical Manual (DSM-IV-TR).
- Children with learning disorders have a high prevalence of comorbid emotional and behavioral difficulties.
- Early identification and intervention are essential for optimal prevention of further learning, emotional, and behavioral problems.

Identification and intervention of learning disabilities (LDs) in children is primarily the function of the educational system. However, children with LD have many risk factors for emotional and behavioral difficulties: frustration at school, poor self-esteem, criticism by adults who don't understand the disability, and biological vulnerabilities. It is these secondary disorders that prompt consultation to a mental health professional.

Early detection and specialized tutoring and teaching techniques may be quite helpful in improving prognosis. Additionally, it is essential that the child, his or her parents, and school personnel have a good understanding of the nature of the disability, to minimize the risk of the child "feeling stupid," academic failure, and criticism for "not trying" or being "lazy," which may erode self-esteem and precipitate emotional and behavioral difficulties. Because children with learning disabilities are usually bright, they are more cognizant of their difficulties than individuals with more pervasive cognitive and learning issues. It is heartbreaking to hear a child call himself "stupid" when he is quite bright but unable to read.

### BASIC PRINCIPLES

It should not be assumed that children with special learning needs will have other psychiatric difficulties. However, children with learning disorders have a high incidence of