

Report on

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

*Connecticut ADHD Task Force
3rd Edition
Spring 2005*

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Foreword

Dear Colleague:

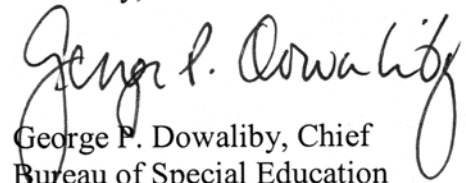
I am pleased to share with you the 2005 edition of the *Report of the Connecticut Task Force on ADHD*. The 2005 edition is a revision of the 1998 Task Force Report which reflected the diagnostic criteria as published in the fourth edition of the American Psychiatric Association's Diagnostic and Statistical Manual, (DSM-IV R), published in May 1994. This new edition adds current educational, psychological and medical interventions.

Implicit in this report is the strong emphasis on the coordination and collaboration among school, home and medical personnel who deal with children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD).

I am hopeful that this report will assist you to ensure that individuals with ADHD achieve at high levels in school, master the goals in the Common Core of Learning, and become productive and responsible citizens.

You are encouraged to make copies of this report and distribute it to interested parties.

Sincerely,



George P. Dowaliby, Chief
Bureau of Special Education
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I Acknowledgments

The ADHD Task Force wishes to thank the many individuals who have served on the Task Force since its inception, and who have provided time, effort, and expertise in guiding the group and producing the original, second, and current revision of this report. The members want to pay special gratitude to the contributions of Ann Seigel, who was the primary motivating force for this project from its inception in 1988, and whose wisdom, patience, and perseverance contributed to the current edition.

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II Introduction and Goals

Almost every classroom in America contains one or more children who experience serious difficulty with inattention, hyperactivity, impulsivity or all three. School personnel find them challenging to teach because they do not respond in the same way as other children, and these symptoms often also result in behaviors that interfere with their education.

These children, whose condition is referred to as Attention Deficit/Hyperactivity Disorder (ADHD), are at risk for academic difficulties and social and emotional challenges unless they receive appropriate interventions. The purpose of this document is to provide an integrated source of information that reflects the most current knowledge about ADHD from medical, educational, social, and psychological perspectives. It is hoped that this information will be useful to educators, parents, and other involved individuals as they seek to help children with ADHD.

This report by the Task Force on ADHD will act as a catalyst to facilitate the integration of a multidisciplinary approach for wider recognition of the disorder and the proper referral, diagnosis, treatment and education of individuals with ADHD. The Task Force will provide leadership in promoting education, resource development, integrated support systems, professional training, and advocacy.

The Connecticut Task Force on ADHD does not endorse or recommend any service, treatment, theory, or institution. The contents of this report are for informational purposes only.

III History of the Connecticut Task Force on Attention Deficit Hyperactivity Disorder

February 1988

Members of the Board, the Professional Advisory Board, and parent members of the Learning Disabilities Association of Connecticut (LDA); representatives from the Connecticut Association of Children with Learning Disabilities (CACLD); and a representative of Children and Adults with Attention Deficit Disorders (CHADD) organize an ADHD study committee whose purpose is to: 1. clarify the legal definition of disability as related to ADHD; and, 2. advise the State Special Education Advisory Council of its concerns related to students with ADHD.

Fall 1988

Committee develops and distributes a position statement on ADHD to State Special Education Advisory Council and LDA members. A survey is sent to CACLD, CHADD, LDA membership, and selected others; response to the position statement is favorable.

Spring 1989

Connecticut Council of Administrators of Special Education (CONNCASE) reacts to position statement and agrees to meet with the Study Committee.

Summer 1990

Study Committee reorganizes as an independent Task Force, adding members from medical, mental health, and additional special education disciplines.

Fall 1990

Task Force develops a Medical Issues subcommittee. The addition of an Education Issues subcommittee is discussed. Plans are made to hold a conference on ADHD for school professionals under the joint sponsorship of the Connecticut Special Education Resource Center (SERC), CONNCASE, LDA, CHADD and CACLD in the spring of 1991.

Winter 1990/91

The Task Force develops a needs assessment for the conference on ADHD and contributes to the Federal Department of Education's inquiry on ADHD as a disabling condition.

Spring 1991

Discussion of continuation concludes with decision to re-examine Task Force mission, goals, and objectives.

Summer 1991

Task Force members develop vision and goal statement and begin process of specifying objectives to achieve goals.

Fall 1991

Task Force requests the State Department of Education (SDE) to issue a response to the September federal memorandum on ADHD. Suggestions for content are made.

Spring 1992

Workshops on ADHD continue under SERC sponsorship. Work begins on a Task Force Report. Much of Connecticut's report is based upon a similar task force effort published by the Virginia Department of Education, with assistance and consultation from Virginia's ADHD Task Force and Dr. Ron Reeve, Associate Professor at Curry School of Education, University of Virginia.

Winter 1992/93

Connecticut State Department of Education issues Memorandum concerning ADHD.

Spring/Fall 1993

Work continues on Task Force Report.

Winter 1993/94

Task Force completes and disseminates its first report to Connecticut school administrators. Information in SERC newsletters makes Task Force Report available to others.

Spring 1994

Regional Forums related to the report are provided for Connecticut school administrators.

Fall 1994

Regional Forums related to the report are provided for parents. Outreach to medical/mental health professionals, Department of Children and Families, and Early Childhood Network is initiated.

Winter 1994/Spring 1995

Workshops provided by SERC as a result of feedback from Forums. Work begins on revision of Task Force Report to bring it in line with new ADHD criteria (DSM IV 1994).

Summer and Winter 1996

Revisions on Task Force Report completed and sent to Bureau of Special Education, State Department of Education for review/final revision.

Spring and Fall 1997

Revisions conducted by the State Department of Education.

Winter 1998

Revised Task Force Report disseminated.

Fall 2003

Task Force begins work on Third Edition, to incorporate recent State and Federal legislation changes, and scientific, medical and educational advances.

IV Historical Background of Attention Deficit Hyperactivity Disorder

The condition now called “Attention-Deficit/Hyperactivity Disorder” (ADHD) has been recognized for at least the last half-century. Although descriptions of ADHD-associated behaviors have been remarkably consistent over the years, the *name* of the syndrome has changed several times.

Early terminology was based on assumptions about the causes of the disorder. In the 1930s and 1940s, children with the ADHD-like behaviors were called “brain damaged” or “brain injured” because it was known that brain damaged individuals showed similar behaviors. In the 1950s and 1960s, it became clear that, although many children exhibited the same set of behaviors as those called “brain damaged,” neither a definitive history of brain trauma, nor the presence of abnormal neurological signs could be documented. The assumption was made that neurological dysfunctions were causing these problems, but were too subtle to be detected with available medical procedures. Therefore, the term “Minimal Brain Dysfunction” came into common use.

“Hyperactive” or “Hyperkinetic” became the term of choice for characterizing these children by the 1960s. The argument was made, especially in education and psychology circles, that the diagnosis of the underlying disorder was based on behavioral criteria, not on any documented medical evidence. Thus, it made sense to use a term that was descriptive of observable behavior. At that time, excessive motor activity was considered the central problem evidenced by these children. Hence, the term “hyperactivity” became widely used.

By the 1970s, most professionals were in agreement that difficulties in attention and concentration were more critical symptoms of the disorder than hyperactivity, and were the primary reason that these children experienced so much social and academic difficulty. Therefore, during the 1980s and early 1990s, the emphasis changed again, favoring neither the attentional or hyperactivity/impulsivity features, but recognizing the unique contributions of each.

The second edition of the *Diagnostic and Statistical Manual of Mental Disorders, (DSM-II)*, published in 1968 by the American Psychiatric Association (APA), was the first to name this syndrome. It was called “Hyperkinetic Reaction of Childhood” and described more as clinical impressions than multi-faceted, interactive behavioral symptoms.

The 1980, *DSM-III* changed the syndrome name to “Attention Deficit Disorder” (ADD). Two types were specified: *with* hyperactivity (ADD + H), and *without* hyperactivity (ADD-H). Diagnosis required the presence of a minimum set of behavioral criteria that were present prior to age seven, had lasted at least six months, and were evident in all three dimensions of the syndrome: attention, hyperactivity, and impulsivity.

The 1987, *DSM-III-R (Revised)* changed “Attention Deficit Disorder” to “Attention Deficit Hyperactivity Disorder” (ADHD). Rather than requiring symptoms from each of the three dimensions, it listed 14 symptoms, any eight of which were sufficient for diagnosis. ADD-H was not included, but changed to a vaguely defined category. Symptoms were now required to be *clearly developmentally inappropriate* and emphasis was placed on their co-existence with other

affective disorders.

The *DSM-IV R*, published in May of 1994, has named the syndrome “Attention-Deficit/Hyperactivity Disorder” (ADHD) in order to preserve continuity. ADHD is now divided into four major types, however, with a separation of attention problems from those of hyperactivity and impulsivity in the first three. (For a fuller description of the new criteria, see Section VI, “Current Definition”).

This latest version of ADHD diagnostic criteria offers significant improvement over earlier ones in that it is more descriptive of academic vulnerability, recognizes that diagnosis requires the input of many people who know the child well, and includes reporting about the child’s behavior across multiple settings.

Although most professionals now use the term ADHD to characterize these children, some of the older terms may continue to be used in the professional literature and in the popular press and media.

Estimates of incidence rates of ADHD vary widely, from less than 1% to more than 20% of the population. This variation occurs because of the imprecision of terms such as “hyperactivity” and “impulsivity.” The best current estimates are that between 3% and 5% of school children have this disorder.

V Current Definition

According to *DSM-IV R* (APA, 1994), the essential feature of ADHD is "...a persistent pattern of inattention and/or hyperactivity-impulsivity which is more frequent and severe than is typically observed in individuals at a comparable level of development. Symptoms of ADHD must be present before age seven years, and must interfere with developmentally appropriate social, academic, or occupational functioning in a least two settings (for example, at home and at school, or at home and at work).

Although symptoms of ADHD may be less noticeable as the person matures, or in novel, highly controlled or reinforcing situations, symptoms of inattention, hyperactivity/impulsivity, or all three, are usually present in at least two settings.

Associated features of ADHD, which vary according to age, developmental stage, and *type*, may include "low frustration tolerance, temper outbursts, bossiness, stubbornness, mood lability (changes), demoralization, rejection by peers, poor self esteem, academic underachievement and problematic couple and family relationships."

While the disorder is usually not diagnosed prior to school entry, problems often are noted before age four. Males are diagnosed at least three times more often than females, although available evidence indicates that females are probably underdiagnosed.

ADHD is often inherited. It is very common to find that relatives of a child with ADHD were, or are, considered to be hyperactive, impulsive, inattentive, or all three, at school, in the community, or at work.

The *DSM-IV R* attempts to clarify the diagnosis of ADHD by separating symptoms of inattention from those of hyperactivity-impulsivity and denotes four separate types of ADHD. The new diagnostic criteria for the three main types specify that symptoms must have been present before age seven and have persisted for at least six months to a degree that is *maladaptive and inconsistent with the child's developmental level* (APA, 1994).

For the diagnosis of **ADHD, Combined Type**, six or more symptoms listed under the *Inattention* criteria below, and six or more of the symptoms listed under *Hyperactivity-Impulsivity* must have been met for a period of at least six months.

For the diagnosis of **ADHD, Predominantly Inattentive Type**, six or more symptoms listed under *Inattention*, but fewer than six symptoms under *Hyperactivity-Impulsivity* must be met for at least six months.

For a diagnosis of **ADHD, Predominantly Hyperactive-impulsive Type**, six or more symptoms listed in the *Hyperactivity-Impulsivity* criteria, but fewer than six symptoms listed under *Inattention* must be met for at least six months.

Additionally, there is a fourth type, **ADHD, Not Otherwise Specified**, in which there are prominent symptoms from the *Inattention* and/or *Hyperactivity-Impulsivity* criteria lists, but these are not sufficient to meet criteria for ADHD.

Inattention Criteria:

- (a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- (b) Often has difficulty sustaining attention in tasks or play activities
- (c) Often does not seem to listen when spoken to directly
- (d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- (e) Often has difficulty organizing tasks and activities
- (f) Often avoids, dislikes, or is reluctant to engage in tasks which require sustained mental effort (such as schoolwork or homework)
- (g) Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
- (h) Is often easily distracted by extraneous stimuli
- (i) Is often forgetful in daily activities

Hyperactivity Criteria:

- (a) Often fidgets with hands or feet or squirms in seat
- (b) Often leaves seat in classroom or in other situations in which remaining seated is expected
- (c) Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- (d) Often has difficulty playing or engaging in leisure activities quietly
- (e) Is often 'on the go' or often acts as if "driven by a motor"
- (f) Often talks excessively

Impulsivity Criteria:

- (g) Often blurts out answers before questions have been completed
- (h) Often has difficulty awaiting turn
- (i) Often interrupts or intrudes on others (e.g., butts into conversations or games)

It should be emphasized that children with **ADHD, Predominantly Hyperactive-Impulsive Type**, or **ADHD, Combined Type**, often draw attention to themselves through externalized behaviors, such as aggression or unusually high levels of verbal or physical activity. Therefore, they are diagnosed and treated at a higher rate.

Nonetheless, children with **ADHD, Predominantly Inattentive Type**, tend to be more socially withdrawn and their academic performance relatively poorer. Therefore, though less visible and consequently less likely to be diagnosed than their hyperactive counterparts, they are also at great risk for academic and/or social difficulties and likewise require early and comprehensive interventions.

The consensus of this Task Force is that it is important to note that *the behaviors listed above are*

not limited to children with ADHD. Children from disorganized, chaotic environments also may have difficulty sustaining attention and behaving in a goal-oriented manner. Depressed or anxious children, or those with other emotional disorders, may exhibit problems with attention, hyperactivity, or impulsivity. Physical illnesses, inappropriate academic settings, some medications, stress, trauma, poor hearing and/or vision, and inadequate nutrition may produce behaviors that look similar to those that characterize ADHD. Differential diagnosis, therefore, is not an easy task.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders-IV*. Washington, DC.: Author.

VI Relationship to Special Education Categories

Under the current categories of disabilities included in the Individuals with Disabilities Education Act (IDEA 2004), ADHD is not considered a separate “disability condition.” However, *if the disorder adversely affects the child’s educational performance*, eligibility for special education instruction under existing categories, such as specific learning disability (LD), emotional disturbance (ED), or other health impaired (OHI), should be considered.

Adverse educational performance refers to the student’s performance in any area, including academic, vocational, social, emotional, and personal life skills. When ADHD co-exists with other disabilities, appropriate interventions should be included in the Individualized Education Program (IEP) to address the individual’s ADHD-related difficulties.

Specific Learning Disability

According to IDEA 2004, the term learning disability *means a disorder in one or more of the basic psychological processes involved in the understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia..”*

Not all children with learning disabilities have ADHD. Children who have a learning disability could have been diagnosed based on language-based problems, or due to visual or auditory perceptual difficulties, and have few symptoms of ADHD. However, many children with learning disabilities do have substantial difficulties with attention, impulsivity and hyperactivity to the extent that they can be considered ADHD as well. It appears reasonable to estimate that between 25-50% of children diagnosed with learning disabilities also have ADHD (Barkley, 1998; Mayes, Calhoun, and Cromwell, 2000).

Likewise, not all children with ADHD are learning disabled. IDEA 2004 states that “*in determining whether a child has a specific learning disability, a local education agency may use a process which determines if a child responds to scientific, research-based intervention[s].”* Since the former criteria under IDEA 1997 for the category of learning disabled required a *severe discrepancy between achievement and intellectual ability*, the majority of children with ADHD may not have qualified for a diagnosis of learning disabilities prior to June 2005. However, these children could possibly now qualify under the category of either learning disabled (LD) or other health impaired (OHI).

Current knowledge demonstrates a substantial overlap between ADHD and LD, although it is not known at this time whether the two disabilities, or possibly subtypes of each, stem from common or from separate neurological differences. However, if a child cannot attend to appropriate information in the classroom, sustain attention, or overcome the impulse to respond before instructions are completed, his/her education and achievement will probably be compromised. Gaps in the acquisition of reading and math skills, which build systematically from simpler to

more complex learning, may occur, resulting in failure, frustration and decreased motivation.

Emotional Disturbance

According to IDEA 2004, the term *emotional disturbance* is defined as follows: (i) the term means a condition exhibiting one or more of the following characteristics over a long period of time and to a marked degree that adversely affects a child's educational performance: (A) An inability to learn that cannot be explained by intellectual, sensory, or health factor. (B) An inability to build or maintain satisfactory interpersonal relationships with peers and teachers. (C) Inappropriate types of behavior or feelings under normal circumstances. (D) A general pervasive mood of unhappiness or depression. (E) A tendency to develop physical symptoms or fears associated with personal or school problems.

Many children who are emotionally disturbed (ED) demonstrate enough characteristics of ADHD to carry both diagnoses. Likewise, many children who are diagnosed as ADHD may exhibit other serious social and emotional deficits (oppositional defiant disorder, depression, bipolar disorder, anxiety). While the extent of overlap is difficult to clearly identify, investigators have reported a co-occurrence of ED and ADHD in up to 60% in children (Pliszka, 1998).

Which is primary? Do emotional problems lead to attention problems because anxiety or depression interferes with the ability to concentrate? Or, is there something about the nature of ADHD that predisposes children to develop social/emotional difficulties? Researchers are attempting to tease-out these issues (Sonuga-Barke, 2002). However, a case certainly can be made for ADHD as the root of some emotional problems. In the homes of children with ADHD we know that more negative interactions occur among family members. Both the child's behavior and family interaction patterns influence the child's adjustment at school age (Sonuga-Barke).

Likewise, early peer interactions, which are precursors to social satisfaction, are often problematic in many children with ADHD. At preschool ages, children with ADHD, especially those who exhibit hyperactivity, are strikingly unpopular (Odom, McConnell, and Chandler, 1995). They seem to miss social cues which other children pick up automatically, have difficulty modulating behavior, and switching activities or settings is seldom done without incident. The more aware these children are that others react negatively to their behavior the more their self-esteem suffers. This may cause a lack of confidence in their ability to develop and maintain rewarding relationships.

Other Health Impaired

According to IDEA 2004, *other health impaired* means having limited strength, vitality or alertness, including a heightened alertness to environmental stimuli, that results in limited alertness with respect to the educational environment, that is due to chronic or acute health problems such as asthma, attention deficit disorder or attention deficit hyperactivity disorder...and adversely affects a child's educational performance. Therefore, children with ADHD may be considered disabled under Part B of IDEA solely on the basis of this disorder within the OHI category if there is also a demonstrated adverse effect on educational performance.

Speech/Language Impairment and Hearing Impairment

According to IDEA 2004 a *speech or language impairment means a communication disorder, such as stuttering, impaired articulation, a language impairment, or a voice impairment, that adversely affects a child's educational performance.*

The exact relationship between speech/language problems and ADHD is not known. Hearing impaired individuals exhibit many behaviors similar to those of children with ADHD, including the appearance of not listening to what is being said, difficulty following directions, etc. For this reason, when an attention deficit is suspected, it makes sense to check for auditory acuity to be certain that the child can hear normally.

Some children with ADHD exhibit language-processing impairments. The high co-morbidity between the two disorders has been well documented, with estimates ranging from 10-33% (Riccio, Hynd, Cohen, Hall, and Molt, 1994). Children with language processing problems often have related auditory processing difficulties, particularly in the ADHD population. Problems can be found in the areas of speed of processing, auditory memory, auditory attention, processing information/analysis and auditory discrimination. Following directions or getting information from reading and listening can be a nightmare for such children. Due to the important connection between language and learning, the speech and language pathologist should be part of the PPT addressing the needs of the children with ADHD. In addition, most children with ADHD do not use internal language to self-regulate or self-direct their thoughts and behavior (Barkley, 1997).

Often children with auditory processing disorder (APD) are first diagnosed with a label of ADHD. Later, an audiologist may render a diagnosis of APD. To audiologists, APD includes problems with one or more of the following auditory tasks (American Speech-Language-Hearing Association CAPD Task Force, 1996):

- Sound localization and lateralization
- Auditory discrimination
- Auditory pattern recognition
- Temporal aspects of audition (resolution, masking, integration, ordering)
- Auditory performance decrements with competing acoustic signals
- Auditory performance decrements with degraded acoustic signals

Determining a diagnosis of APD versus ADHD is not easy. Many children with APD have a history of hearing loss and/or recurrent ear infections. Such a history should signal the evaluator to look even more closely for signs of this disorder. Speech and language pathologists may screen for peripheral hearing loss and APD and conduct related speech/language evaluations in addition to audiologists completing an audiological evaluation.

Intellectual Disability (formerly Mental Retardation)

Many features of ADHD may be present in children who have been diagnosed as having an intellectual disability. These children behave like much younger children by exhibiting higher

levels of inattention, impulsivity, and motor activity. In order to be considered as having ADHD, in addition to ID, however, the child's relevant symptoms must be excessive for his/her mental age.

American Speech-Language-Hearing Association Task Force on Central Auditory Processing Consensus Development. (1996). Current status of research and implications for clinical practice. *American Journal of Audiology*, 5 (2), 41-54.

Barkley, R.A. (1998). *Attention-deficit hyperactivity disorder: A Handbook for diagnosis and treatment (2nd ed.)* New York: Guilford Press.

Barkley, R.A. (1997). *ADHD and the nature of self-control*. New York: Guilford Press.

Department of Education (1999). *Individuals with Disabilities Education Act (IDEA)*. 34 CFR Parts 300 and 303.

Mayes, S.D., Calhoun, S.L., & Crowell, E.W. (2000). Learning Disabilities and ADD. *Journal of Learning Disabilities*, 33, 417-424.

Odom, S.L., McConnell, S.R., & Chandler, L.K. (1995). Acceptability and feasibility of classroom-based social interaction interventions for young children with disabilities. *Exceptional Children*, 60, 226-236.

Pliszka, S.R. (1998). Comorbidity of attention-deficit/hyperactivity disorder with psychiatric disorder: An overview. *Journal of Clinical Psychiatry*, 59(7), 50-58.

Riccio, C.A., Hynd, G.F., Cohen, M.J., Hall, J. & Molt, L (1994). Comorbidity of central auditory processing disorder and attention-deficit hyperactivity disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*, 33, 849-857.

Sonuga-Barke, E. (2002). Psychological heterogeneity in AD/HD: A dual pathway model of behavior and cognition. *Behavioral Brain Research*, 130, 29-36.

VII Assessment and Identification

The actual diagnostic label ADHD most commonly has been given by physicians (pediatricians, child psychiatrists, pediatric neurologists) and by licensed psychologists. Occasionally, parents will initiate the evaluation on their own. The typical route, however, is for school personnel to note a concern and, then recommend that the child be formally evaluated through the Planning and Placement Team process if the team suspects a disability that is adversely affecting educational performance.

There is inconsistency among professionals as to how and by whom the assessment for ADHD should be done. It is possible, however, to identify principles and procedures which, in most cases, *should* be followed in order to assure that the best diagnostic decisions are reached.

✓ **Conduct a comprehensive evaluation.**

ADHD is known to exist side-by-side with other conditions, such as learning and language problems, mood disorders, aggression and disruptive behaviors, depression, anxiety, etc. Professionals call this “co-morbidity.” As many as one-third of children diagnosed with ADHD also have a co-existing condition. Because of this, it is important that an evaluation be comprehensive enough to determine if any other disorders also exist. It is particularly important not to use tests that *only* look at ADHD features – so-called “narrow band” tests -- for these might miss other critical factors that would make the diagnosis more accurate.

✓ **Use multiple sources of information.**

In addition to evaluating the child directly by appropriate testing and careful observations, it is very important to get information from parents, teachers, and others in the child’s environment in order to achieve a multi-disciplinary, *collaborative* approach to insure that all points of view are represented (See Section IX).

✓ **Get information about the child’s functioning in different settings.**

For many years, it was assumed that if a child had ADHD, s/he would consistently exhibit ADHD symptoms and exhibit them equally in every situation. We now know this is not necessarily true. A child with ADHD may be able to sit quietly and watch an interesting TV show or attend intently to a video game or favorite activity for extended time periods. In undemanding task situations, a child with ADHD may also manage well.

It is important to remember that the performance of a child with ADHD is usually closely related to the amount of structure present, the type of interaction required, the length and difficulty of the task, and the quality and quantity of reinforcement available.

✓ **Assess all dimensions of ADHD.**

The syndrome includes significant problems with inattention, impulsivity/hyperactivity, or all three. An assessment for ADHD would be incomplete if it did not include an evaluation of all these components. (See Section VI for criteria.)

✓ Obtain and review multiple types of data.

Medical history and status, developmental/social history, cumulative educational records, interviews, careful observations, psycho-educational tests as needed, and checklists for the assessment of attention, impulsivity, and hyperactivity all contribute to a comprehensive evaluation for ADHD.

1. Interviews

Most formal evaluations begin with obtaining a developmental and health history from the parents. Adjustment/achievement and social/emotional information should also be obtained from the child's teacher(s) and *from the child*. Teachers can indicate the severity of the problem in comparison to other children in the class, the situations under which the behaviors of concern seem relatively better or worse, and the extent to which the problem is interfering with academic productivity and social acceptability. The child can indicate what is hard and easy for him or her, and what s/he sees as the problem.

A number of structured interviews are commercially available.

2. Observations

Observations of the child's behavior in the school or home environment can provide the most direct indications of the presence or absence of ADHD.

Interviews and rating scales are indirect, and may suffer from possible reporter biases. Tests given to the child are direct, but they usually take place in novel and quiet settings on a one-to-one basis, and typically involve tasks that are more interesting to the child being tested than s/he would ordinarily experience. *Therefore, tests may provide unreliable indications of how the child does in the "real world."*

Careful observations avoid these problems. Most formal observations are done in the school setting. However, when obtainable, home observations can be quite valuable. School observations should be done with careful thought as to the time of day and the type of activity (e.g., recess, lunch or playground vs. classroom, lecture vs. seatwork, group vs. individual work, math vs. reading vs. writing, and complex vs. simple tasks). Usually the teacher can suggest the best times for observation by targeting subject, activities, or periods when the child is most likely to exhibit the behaviors of concern. Videotapes can also provide invaluable information.

Observation techniques can vary from merely watching the child to using complex sampling procedures that have been developed for this purpose. In order to make the observation as efficient as possible, it is important to have it planned and organized. Target behaviors that can be observed and counted should be specified in advance.

For example, if attention is the focus, an independent seatwork activity time might be chosen. The observer could operationally define attention as "looking at the materials and appearing to be engaged."

3. Rating Scales

Rating scales are quick, inexpensive, and can be used to obtain information from a variety of individuals who have observed the child in different contexts over extended time periods. Several have accumulated normative data for comparison purposes. Evidence regarding their reliability and validity is available, and frequently is quite impressive, compared to other types of assessment methods. For these reasons, rating scales often are administered at different points in time in order to evaluate the effects of various interventions (e.g., medication trials).

Informants for rating scales usually are parents or teachers. Parents can give essential information since they have observed their child's behavior in a variety of situations across an extended time frame. Teachers can provide useful observational data about the child's behavioral functioning in school compared to that of other children the same age and/or intellectual level.

There are many rating scales available and widely used for the assessment and treatment of ADHD. A sample of scales often used by medical, educational, and mental health professionals is listed in Appendix A. It is important to examine each scale to determine which one meets the child's specific needs. *Rating scales, however, should not be used as the sole assessment instrument for determining special education eligibility, or for diagnosing ADHD.* There is an emerging consensus that rating scales, in general, are more predictive of the hyperactivity feature of this disorder than of its other aspects.

4. Psychoeducational tests

Tests given as part of routine psycho-educational evaluation procedures in schools and clinics may provide information that is useful in assessing ADHD. It would be beneficial to administer them as part of a more comprehensive evaluation to determine if a child with ADHD may have co-existing learning or other problems.

The Wechsler Intelligence Scales (there is one for children and one for adults) have subtests which contribute to a "freedom from distractibility factor." Likewise, the Kaufman Assessment Battery for Children, and the Stanford-Binet Intelligence Scale have short-term memory tasks that are sensitive to attention and concentration problems. The Cognitive Assessment System test has sections that measure planning and attention, two critical factors that are often affected by ADHD.

Unfortunately, low scores on these measures also may occur for other reasons. For example, anxiety can lower performance on these tasks, as can problems with retrieving information. Also, as noted earlier, auditory processing problems can interfere with functioning on items presented verbally.

The Woodcock Johnson Psycho-educational Battery and The Kaufman Tests of Educational Achievement assess functioning in multiple areas of academics. Tasks requiring assimilation, organization, and visual motor integration, such as reading comprehension, written expression, and mathematical calculations, also tend to be more sensitive to attention and concentration factors, and thus frequently reflect lower scores.

In summary, results from standard psycho-educational tests can be used to signal the possibility of ADHD-type problems, but their greatest value lies in helping to identify other conditions that may co-exist with ADHD, such as language, learning, and social/emotional problems.

5. Speech – Language Assessment

Communication problems may manifest themselves by behaviors that resemble those seen in ADHD or may result from the ADHD. An assessment to sort this out should address all areas of comprehension and expression of nonverbal and verbal language. Oral and written language should be assessed, as either or both may be affected. Because difficulties with subtleties of language and social interaction and planning are often present in ADHD, higher order language skills (including use of language for self/social regulation) need to be addressed as well.

6. Continuous Performance Measures and Other Assessment Procedures

Numerous tests have been developed that require a child to attend over a set period of time to a series of visual or auditory stimuli, such as connecting sequentially numbered dots or “balloons” or pressing a button when certain words or numbers are heard. It is believed that since the demand for sustained attention is very high in this type of test, a child with ADHD will perform poorly, and this would be a good indicator of the disorder. Unfortunately, this type of measure has not been able to reliably distinguish children with ADHD from others. Many children with significant ADHD do quite well on these tasks, although it is not clear why. At this time these measures should be suggestive, but not conclusive tools for the diagnosis of ADHD.

7. Assessment of Adults

The assessment of adults who may have Attention Deficit Hyperactivity Disorder is relatively complex in regard to ruling out medical and/or co-morbid psychiatric conditions. The assessment typically involves documentation of functioning during childhood and completion of both retrospective and current rating scales. A complete medical evaluation is warranted to ensure that medical conditions such as thyroid problems, diabetes, heart related issues and other medical conditions are not producing symptoms that mimic ADHD symptoms. An approach to documenting early childhood symptoms may include parent interview, review of report cards, and completion of retrospective rating scales.

VIII The School's Role in Assessment and Diagnosis

In the majority of cases, concerns about a child's attention and activity levels arise first in school. This occurs because school usually demands more sustained, focused attention than earlier settings. Sometimes, parents will express concern about these issues to school personnel before talking with their physician. How should the situation be handled from that point?

In Connecticut, the focus is on helping the child succeed in the general classroom. Given the complexities associated with ADHD, teacher(s), school psychologist, counselor, speech and language pathologist, and nurse should collaborate to develop instructional and behavioral strategies. The goal is to try to make sufficient accommodations and modifications in the general school environment so that children can progress appropriately. Accommodations are changes made to the teaching or testing procedures in order to provide a student with access to information and to create an equal opportunity to demonstrate knowledge and skills. Modifications are changes to what the student is expected to learn -- the curriculum.

An initial request for assistance

Whether the initial request for assistance originates from the parents or from within the school, it is recommended that a district representative establish a two-way dialogue with the parents to form a collaborative, working alliance. Some considerations include:

1. Assure the parents that the intent of the process is to determine what difficulty the student is experiencing and the most appropriate manner to provide help/supports to their child;
2. Explore the parents' specific concerns and their attempts to help their child;
3. Request parental permission (in writing) to allow the school to collaborate with community based professionals who may already be working with the student (doctor, therapist, etc.);
4. Explain the differences that might exist when services are provided by instructional support/general education teams, as compared to services and procedural safeguards provided under Individual with Disabilities Education Act (IDEA) or Section 504 of the Rehabilitation Act of 1973;
5. Review the assessment process and explain the multiple-part eligibility standards (e.g., under IDEA -- category or diagnosis, adverse effect on educational performance, and benefit from special education and services); and,
6. Establish a point-person within the school through which the parents may maintain an open channel of communication.

When instructional support or general education teams are discussing the educational needs of a student, there are two main questions to address:

1. *Has the team established that the curriculum has been delivered on the student's instructional level regarding pace of instruction and complexity of material? For example, consider:*
 - a. Specific study skills taught to all students;
 - b. Computer technology readily available in classrooms for spontaneous use;
 - c. Out-of-class assistance for repeated practice or further explanation;
 - d. Re-teaching an integral part of lesson planning;
 - e. Small group, intensive instruction;
 - f. Frequent opportunities for hands-on learning.
 - g. Variations of instruction to match learning styles;
 - h. Alternative assessments of student work;
 - i. Environmental/classroom accommodations;
 - j. Cooperative learning;
 - k. Peer interaction supports;
 - l. Support services consultation;
 - m. Provided listening devices (e.g. noise canceling headphones, sound field amplification systems, personal fm units); ,and
 - n. Behavioral interventions that address antecedent conditions, skill instruction, and modification of consequences
2. *Have interventions recommended by the team been implemented, monitored, and fine-tuned (as necessary)?*

IDEA (Individuals with Disabilities Education Act)

Sometimes the child's difficulties are beyond the scope of what general education can provide. In those cases, it is appropriate to refer the student to the Planning and Placement Team (PPT) for formal assessment of eligibility for special education under IDEA. According to IDEA 2004, the child's evaluation must be recommended by the PPT and conducted by a multidisciplinary team that includes as individual knowledgeable about ADHD.

If the PPT recommends a medical evaluation by a licensed physician, the school district must

ensure that such evaluation is conducted at no expense to the child's parents. However, the PPT may decide that other qualified personnel can be utilized to determine eligibility of a child with ADHD characteristics for special education services.

It is very important for school personnel to communicate and collaborate with the physician and any other qualified individuals involved with the child, especially in cases where some evaluation already has been done, so that the diagnosis, subsequent treatment, and educational planning is both integrated and comprehensive.

The PPT determines whether or not the child is eligible to receive special education and related services; that is, whether the child has a disability and whether the disability "adversely affects educational performance." Since there is no separate ADHD condition specified under IDEA (as there is for LD, visually impaired, etc.), the situation can be complicated, as many children with ADHD also will be found eligible for issues related to Learning Disabilities, Speech/Language Impairments, Emotional Disturbance, and Other Health Impaired.

As with other children found to have a disability that requires specially designed instruction, an Individualized Education Program (IEP) would then be developed to specify annual goals and objectives for intervention. A plan starts with the assumption that the student will receive services in the general education classroom and documents reasons when that is not possible. The IEP should include any necessary program accommodations, such as providing more time to take tests, social and/or organizational skills training, a behavior monitoring system, as well as modifications to the curriculum. The school staff member who is most appropriate for overseeing implementation of the IEP (the case manager) may be a professional other than a classroom teacher, especially if academic skill acquisition is not a problem for that particular child.

Section 504 of the Rehabilitation Act of 1973

Some students, who are not eligible for special education and related services, may be eligible under Section 504 of the Rehabilitation Act of 1973. Section 504, a civil rights law, requires every recipient of federal financial assistance that operates a public elementary or secondary program to address the needs of children who are considered "disabled persons" under Section 504 as adequately as they address the needs of non-disabled persons.

A "disabled person" is defined in the regulation as any person who has a physical or mental impairment which "substantially limits a major life activity (like learning)" (34 CFR 104.3(j)). Thus, depending on the severity of their condition, a child with ADHD may qualify for assistance under the law.

The school district is responsible for conducting evaluations necessary to determine eligibility for services under Section 504 when it has reason to believe that the child may be eligible. If the school district declines to evaluate the student, it is required they notify the parents of their due process rights. Should it be determined that the child with ADHD is disabled for purposes of Section 504 and needs accommodations to the instructional process, those accommodations are required by Section 504 and should be documented in a written plan.

Free Appropriate Public Education (FAPE)

Under both IDEA and Section 504, school districts must provide a free appropriate public education (FAPE) to each identified child. A free appropriate public education consists of general or special education services and related services designed to meet the individual student's needs.

Implementation of an individualized education program developed in accordance with IDEA, although not required, is one means of meeting the FAPE requirements of Section 504.

IX Medical Interventions

Pharmacotherapies

ADHD research has increased dramatically in the last few years and has answered many questions about the disorder and role of medications (pharmacotherapy) in its treatment, while it has raised others. The disorder has been found to have a very strong genetic component, for example, and recent advances have shed increasing light on its cause (Faraone and Doyle, 2001; Spencer, Biederman, Wilens, and Faraone, 2002).

In the 1930's, Bradley first reported the effectiveness of stimulant medication in improving the function of hyperactive children (Bradley, 1937). Because the stimulants appeared to “calm down” this rambunctious group of children, while they were thought to make “normal” children more active, the effects of stimulants were thought to be “paradoxical”. A number of studies, however, have shown that normal children and adults also respond to stimulant medication with improved attention and concentration.

Since Bradley's pioneering work, innumerable studies have shown stimulants to be effective and safe in the treatment of ADHD. Careful double blind studies have show stimulant medications to be effective in 75% to 85% of children diagnosed with ADHD (Spencer, 2004; Spencer, Biederman, and Wilens, 2000). Stimulants have been in use longer than almost all drugs in pediatrics and have established an exceptional record of safety and efficacy, when they are used appropriately. While they are sometimes abused, recent research suggests that their early and appropriate use in ADHD may reduce a child's risk of drug abuse later in life (Biederman, Wilens, Mick, Spencer, and Faraone, 1999). The use of stimulants remained controversial in some quarters, however, because most studies of stimulants were short term, failed to compare stimulant treatment to psychological, behavioral, and educational interventions and were conducted on fairly small groups of children or adolescents.

Recent well designed (randomized, double blind, placebo controlled) treatment studies have diminished substantially the controversy over the effectiveness of stimulant treatment of ADHD. The largest and best designed study, the National Institute of Mental Health Collaborative Multimodal Treatment Study of Children with ADHD (MTA) compared the effects of (a) stimulant treatment alone, (b) comprehensive behavioral treatment (parent training, child-focused therapy, and school-based interventions) alone, (c) combined therapy (“a” and “b”), and (d) community treatment (the treatment a child would ordinarily receive in his community) in a sample of more than 600 children (The MTA Cooperative Group, 1999a, 1999b) . The impact of interventions on symptoms, academics, and social functioning was carefully assessed.

The MTA study showed conclusively that stimulant treatment was highly effective and safe over the two-year period of the study. It substantially improved academic and social functioning across the board in those subjects with ADHD alone. Behavioral treatment alone was generally less effective than in this group although it helped insure superior outcome when it was combined with stimulant treatment⁷. In children with significant concomitant disruptive behavioral problems and/or significant concomitant anxiety, acceptable outcome required combined treatment (Arnold et al., 2004; Owens et al., 2003).

Research has shown ADHD to be a life-long disorder with different manifestations in different

developmental periods (Wilens, Biederman, and Spencer, 2002). In childhood, hyperactivity is marked. As puberty approaches, hyperactivity wanes and impulsivity becomes more problematic. At one point, stimulants were routinely stopped in adolescence, since their effectiveness in controlling impulsivity was not appreciated. Toward the end of adolescence, impulsivity often declines and the residual symptoms of inattention and distractibility may persist into adult life. In the past, the residual symptoms of ADHD were often missed and few adults received treatment. The recent recognition that such symptoms can impair performance and the quality of life in adults has led to many new treatment studies that show that stimulants maintain their effectiveness across the life span.

In addition to the core symptoms of inattention, impulsivity, and hyperactivity, ADHD affects self-esteem, school performance, social judgment, and personal relationships. Stimulants improve functioning across the board (Spenser, 2004). Stimulants should probably be used all the time (i.e. no stimulant holidays, as once advised) except in those rare cases where significant growth retardation occurs with their chronic use. About half of the children who meet the criteria for the diagnosis of ADHD have ADHD alone (so called “simple” ADHD), while the other half have other psychiatric syndromes, principally learning, speech and language, disruptive behavioral, and anxiety and mood disorders, as well (Spencer, Biederman, and Wilens, 1999). When one of these disorders is present at the same time as ADHD, it is said to be “co morbid” with the ADHD and the ADHD is said to be “complex”. Children who have some combination of ADHD and other psychiatric conditions are at much higher risk for school and social failure, drug abuse, and legal troubles. This “complex” or “co morbid” group requires special attention and more complex medical and behavioral intervention typically.

Although appropriate treatment with medications has many positive effects, it does not resolve existing social skill deficits (e.g., poor interactive skills or negative behavior patterns), entrenched deficits in self-esteem, learning, speech or language difficulties, or problems at home. Every child with ADHD needs a comprehensive evaluation to permit the planning of comprehensive and effective treatment that addresses all relevant medical, educational, and psychosocial problems.

While other medications have been found effective for ADHD in children, adolescent and adults with ADHD (see below), none have the established history of safety and effectiveness of the stimulants. Often the research that supports the use of these alternative medications is very limited or anecdotal. The use of these alternative medicines in “simple” ADHD with or in the place of stimulants is often controversial and they may be best used in those cases where stimulants are poorly tolerated, where they are not fully effective or where the risk of stimulant abuse is judged substantial. These medications may have a more important role in “complex” ADHD, where they may be used to treat the symptoms of several disorders at once or where they may be used to bring about a fuller response of symptoms than can be achieved by stimulants used alone. Several medications may be combined to fine tune the treatment and bring about the best possible outcome. In this situation, great care should be taken to monitor the positive effects of each medicine and its side effects.

The Food and Drug Administration (FDA) approves the use of a medication to treat a particular condition or disorder, when enough scientific research is available to establish the safety and effectiveness of the medication for that particular “indication”. The process of seeking FDA approval for a specific “indication” is expensive and laborious.

When an “off indication” use of a medication is considered, the use must be consistent with the principals of evidence-based medicine. The approach specifies that treatments for which good research evidence of safety and effectiveness is available be used first, and less established treatments only be used when better established ones have failed to provide desired results. Clear headed consideration of the cost and benefits of “off indication” uses of a medication and of the uses of unstudied or little studied combinations of medications (polypharmacy) is essential. The treating physician should be especially careful to explain to the patient and his family the rationale for the treatment. The risks and benefits of the treatment compared with those of FDA approved treatments must be stated. The hoped for therapeutic effects and the likely side effects must be detailed and methods to assess therapeutic response and side effects explained. Informed consent should be explicitly obtained of the patient or his family.

Before any psychologically active (psychotropic) medication is used in a child or adolescent, a physician must determine that the patient’s health permits it. Medical factors that might make the use of the medicine unwise or risky should be identified, as should factors that might interfere with the effectiveness of the medication. A medical history and complete physical examination should have been done recently. When appropriate, baseline laboratory studies should be obtained before starting the medication and thereafter as needed. Psychotropic medications should only be used as part of a comprehensive treatment plan.

Under Chapter 169, Section 10-212b, each local and regional board of education shall adopt and implement policies prohibiting any school personnel from recommending the use of psychotropic drugs for any child. However, the provisions of this section shall not prohibit (A) school health or mental health personnel from recommending that a child be evaluated by an appropriate medical practitioner, (B) school personnel from consulting with such practitioner with the consent of the parents or guardian of such child, (C) the planning and placement team from recommending a medical evaluation as part of an initial evaluation or re-evaluation, as needed to determine a child’s eligibility (i) eligibility for special education and related services, or (ii) educational needs for an individualized education program. It is important to note that local school districts, under IDEA 2004, are only responsible for diagnostic medical evaluations that are recommended and agreed to by the district’s Planning and Placement Team (PPT).

The psychotropic medications used in the treatment of ADHD are presented below. Because stimulants account for the majority of prescriptions written for ADHD, information about each will be presented in some detail below, as will information about Atomoxetine (Strattera), a non-stimulant newly approved for the treatment of ADHD. The presentation of other, unapproved medications sometimes used to treat ADHD will be briefer, since the considerations in their use are complex and somewhat technical.

The Stimulants

Bradley was the first to use stimulants for ADHD, when he treated “hyperkinetic” children with the newly discovered Dextro-amphetamine (Dexedrine) in the 1930s. For some years, Dexedrine remained the mainstay of treatment of ADHD, known in earlier years as the “hyperkinetic syndrome of childhood” or “minimal brain dysfunction”. In the 70’s McNeil Laboratories introduced a new stimulant, Methylphenidate, under the Brand name Ritalin, as an alternative for the treatment of ADHD. By the 1980’s, Ritalin was the most commonly prescribed medication for ADHD, although studies repeatedly showed that Dexedrine and Ritalin were equally

www.mentalhealth.com

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www.newideas.net

www.PediatricNeurology.com

www.ADDvance.com

www.ADDchoices.com

www.ADHDnews.com

www.helpforADD.com

www.ADDresource.com

www.add.about.com

www.oneaddplace.com

www.edutechsbs.com/adhd

www.adhd.com

www.schwablearning.org

Appendix F

COMMENTS

The Connecticut Task Force on ADHD was established to provide parents, educators, and mental health professionals with current information on diagnostic and treatment strategies for ADHD. Toward that end, we have developed this Task Force '05 report. We would like to know if there is anything else we can do to serve you better.

Please check all items that interest you:

_____ **More information** (please be specific)

_____ **Interested in speakers: For Parents** _____ **For Others** _____
Please name group _____

_____ **Training on related topics (please be specific)**

_____ **Other**

Your comments on how to improve future revisions of this document will be helpful.

May we use you as resource? (Please send your name, experience, and resume)

Would you be interested in attending a Task Force Meeting? _____ **Yes** _____ **No**

Name _____

Address _____

Telephone (w) _____ (h) _____

Please forward this to: Special Education Resource Center
 Attention: ADHD
 25 Industrial Park Road
 Middletown, CT 06457