Living with ADHD: A Parent's Guide to Childhood ADHD Management

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Living with ADHD: A Parent’s Guide to Childhood ADHD Management

by

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This scholarly project, submitted by Macy Adams in partial fulfillment of the requirement for the Degree of Master’s of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

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TABLE OF CONTENTS

CHAPTER

I.  INTRODUCTION .................................................................1

II. REVIEW OF LITERATURE ..................................................3

III. METHODOLOGY ...............................................................34

IV. PRODUCT ........................................................................36

V.  SUMMARY .........................................................................98

REFERENCES ...........................................................................99
CHAPTER I
INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is a disorder in which an individual demonstrates behaviors including inattention, hyperactivity, and impulsivity over time (Pennington, 2004). Symptoms of ADHD include, “trouble paying attention to tasks or play activities; failing to finish schoolwork, chores, or other duties (not due to oppositional behavior or failure to understand instructions); forgetful in daily activities; has trouble playing or enjoying leisure activities quietly; and has trouble waiting one’s turn” (American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders Text Revision [DSM-IV-TR], 2000, p. 85). These symptoms may significantly affect a child’s participation in daily routines and activities.

Symptoms and/or the diagnosis of ADHD impact all aspects of a child’s life including family life, school performance, play time, and peer relationships. The purpose of this scholarly project is to provide the parents and families of children diagnosed with ADHD with information and suggestions related to living effectively with ADHD.

In order to manage ADHD efficiently and effectively, it is important that those individuals who spend time daily with this population of children are educated and informed regarding the latest ADHD information. While there is a wealth of information on ADHD available, the majority of this information is not directed toward educating the parents and families of children with ADHD. This project is designed to provide ADHD
information in a way that parents, teachers, and family members can use to help in the management of ADHD. Occupational therapy (OT) is “the art and science of helping people do the day-to-day activities that are important to them despite impairment, disability, or handicap” (Florey, 1998, p. 630). With ADHD, the day-to-day activities are interrupted significantly. Therefore, individuals with ADHD benefit from OT services.

The information and suggestions required for the background, the use, and the implementation of this project are presented in the following four chapters. Chapter II is a review of the research and literature used in the compilation of this project. The methodology of the project is described in Chapter III. The parent handbook, *Living with ADHD: The Parent’s Guide to Childhood ADHD Management*, is included in its entirety in Chapter IV, and Chapter V is a summary of the project and it includes recommendations for further study and research on the topic.
CHAPTER II
REVIEW OF LITERATURE

Introduction

Attention deficit hyperactivity disorder (ADHD) is a common disorder among today’s school-aged children (American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders IV- Text Revision*, 2000; Jones, Searight, & Urban, 1999; Mulligan, 2001; Tynan, 1994). Although the disorder is thoroughly researched, the exact cause of the disorder has not been established (Jones, et al.).

The purpose of this project is to create a parent handbook addressing the everyday aspects of living effectively with ADHD. In order to have a valid and accurate handbook, the information must be based on current research and literature. The first three sections of this chapter contain a review of diagnosis and characteristics of ADHD. The fourth section is an overview of the current treatment options. The next two sections deal with issues surrounding family life and school, and the chapter concludes with a section that describes the roles of parents.

*Diagnosing ADHD*

ADHD is one of the most prevalent psychiatric disorders in children (Mulligan, 2001). The first description of ADHD characteristics including impulsivity, inattention, and hyperactivity came about in 1902 (Jones, et al., 1999). Today ADHD affects approximately 3% to 7% of school-aged children (*DSM-IV-TR*, 2000; Tynan, 1994).
A diagnosis of ADHD requires the child to demonstrate a combination of behaviors, which impact that child’s ability to function in school, social settings, and completion of other daily occupational requirements (DSM-IV-TR, 2000). These behaviors include either six or more of the inattention behaviors described below, or six or more of the hyperactivity-impulsivity behaviors described below for a period of at least six months. In order to warrant an ADHD diagnosis, the behaviors demonstrated must be “maladaptive and inconsistent with developmental levels” (DSM-IV-TR, 2000, p. 92). The following are the Diagnostic Criteria 314.9 (DSM-IV-TR, 2000, p. 92):

Inattention:
(six or more of the following behaviors)
- Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
- Often has difficulty sustaining attention in tasks or play activities.
- Often does not seem to listen when spoken to directly.
- 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).
- Often has difficulty organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework).
- Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools).
- Is often easily distracted by extraneous stimuli.
- Is often forgetful in daily activities.

Hyperactivity-Impulsivity:
(six or more of the following behaviors)
- Often fidgets with hands or feet or squirms in seat.
- Often leaves seat in classroom or in other situations in which remaining seated is expected.
- 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).
- Often has difficulty playing or engaging in leisure activities quietly.
- Is often “on the go” or often acts as if “driven by a motor.”
- Often talks excessively.
In order to obtain a diagnosis of ADHD, the ADHD behaviors must be apparent before the age of seven, and these behaviors must be evident in at least two environments, meaning both in the home and at school, etc. (DSM-IV-TR, 2000). Although diagnosis of ADHD at early ages is controversial, research indicates that ADHD characteristics are distinguishable as early as three to four years of age (Tynan, 1994).

The diagnosis of ADHD is serious and must be made by a psychiatrist, psychologist, pediatrician/family physician, neurologist, or a clinical social worker (Jones, et al., 1999; NIMH, 2004). Over-diagnosis of ADHD has become a large problem as awareness of ADHD increases (NIMH, 2004; O’Connor, n.d.). Symptoms of ADHD are not specific to the disorder, and if proper diagnostic measures are not taken, a child with another disorder (including depression, anxiety, Tourette’s Syndrome, and other similar disorders) has the potential of being misdiagnosed with ADHD (DSM-IV-TR, 2000; Jones, et al.; NIMH; O’Connor).

Under-diagnosis of ADHD is also a problem (Jones, et al., 1999; O’Connor, n.d.). If the healthcare provider is not familiar with ADHD and ADHD characteristics, it is common for the ADHD behaviors to be misunderstood as acting out/misbehaving characteristics (DSM-IV-TR, 2000; Jones, et al.; NIMH, 2004; O’Connor). As many as 2/3 of the population of individuals with ADHD will never be diagnosed with the disorder and will never get treatment for the problems that plague them in their everyday activities (Jones, et al.; O’Connor).

Both under- and over-diagnosis of ADHD are problematic. In order to ensure an accurate diagnosis of this disorder, there are certain steps to follow. To begin with, a
child demonstrating inattentive and/or impulsive-hyperactive behaviors (as described previously) should have a thorough physical examination. This examination will rule out any physical illnesses that could be responsible for these behaviors (*DSM-IV-TR*, 2000; Jones, et al., 1999; NIMH, 2004; O’Connor, n.d.; Reed, 1991). Next, an ADHD evaluation should be completed by a qualified healthcare professional (psychiatrist, psychologist, pediatrician/family physician, neurologist, or clinical social worker) that is an expert in the ADHD arena (Jones, et al.; NIMH). A comprehensive ADHD evaluation should include a parent interview, a thorough investigation into that child’s developmental history, a family history, the observations of the child’s teacher(s) as well as those of others that spend significant time with the child, and an in-depth interview with the child (Jones, et al.; *DSM-IV-TR*; Jones, et al.; NIMH; O’Connor).

Including the observations of all individuals involved with the child is very important in the diagnosis of ADHD (Carey, 1999; Jones, et al., 1999; NIMH, 2004). According to Carey (1999), only 53.5% of clinicians use school reports of child behaviors and only 38.3% of clinicians use the *DSM-IV-TR* criteria in arriving at an ADHD diagnosis.

ADHD impacts every aspect of a child’s life, therefore it is vitally important to have an accurate and appropriate diagnosis (NIMH, 2004; O’Connor, n.d.) to indicate appropriate treatment and therapy options so that the child can be successful in everyday life (Jones, et al., 1999; NIMH, 2004; O’Connor, 2001).

*How ADHD Affects The Brain*

While the cause of ADHD is unknown (Jones, et al., 1999; NIMH, 2004), genetic, biological, experiential, and social factors appear to contribute to the occurrence of
ADHD. Some factors affecting development of ADHD include toxin exposure during pregnancy, developmental impairments, diet, injury, ineffective parenting, and heredity (Jones, et al., 1999). Whatever the cause, however, research has suggested that the potential causes affect how the brain functions, which “clearly demonstrates ADHD is a neurobiological disorder” (p. 6).

Recent studies suggest that several areas of the brain are affected by ADHD (Jones, et al., 1999; Duke University, 2000; NIH, 1999; Stanford University, 1998; Zull, 2002). The frontal lobe is one of the areas thought to be most affected by ADHD (Duke University; NIH, Stanford University; Zull). The frontal lobe helps individuals with paying attention, focusing on tasks, concentration, decision-making, planning, learning and recalling learned information, and behaving appropriately (Stanford University).

Also affected are the inhibitory mechanisms of the cortex. These mechanisms helps individuals manage hyperactivity levels, speak in turn, manage angry reactions, as well as other behaviors that need to be appropriately “inhibited” (Duke University, 2000; NIH, 1999; Stanford University, 1998).

In order to behave appropriately, approximately 70% of the human brain must inhibit the other 30% of the brain (Duke University, 2000; NIH, 1999; Stanford University, 1998). If the inhibitory 70% of the brain does not sufficiently manage the remaining 30%, impulsive behaviors, a quick temper, poor decision making, hyperactivity, and other negative behaviors associated with ADHD often result (Duke University; NIH; Stanford University).

The limbic system is responsible for emotions and level of arousal in individuals. When functioning normally, an individual’s limbic system facilitates normal emotional
changes, energy levels, sleep patterns, and stress coping levels (Duke University, 2000; NIH, 1999; Stanford University, 1998). With ADHD, the limbic system is often functioning at high levels. At these high levels, an individual has frequent mood swings and/or temper outbursts. Other reactions could include easily startled, a desire to touch any and everything within reach, and hyper-vigilance (Duke University; NIH; Stanford University).

The Reticular Activating System is also affected in ADHD (Duke University, 2000; Stanford University, 1998). This system is known as the attention center of the brain and appears to be the brain’s center for motivation (Duke University; Stanford University). The Reticular Activating System connects the base of the spinal cord (where it receives information directly from ascending sensory tracts regarding information the body receives from the body’s surroundings) to the mid-brain (the brain’s traffic center; where thoughts and feelings originate). The Reticular Activating System is the intersection where the external world meets the internal environment (Duke University; Stanford University).

When the Reticular Activating System functions normally, it connects the internal and external information appropriately so that information processing and learning are able to occur and attention is paid to the correct task. In order to keep the brain functioning as it should, the Reticular Activating system must be activated to normal levels (Duke University, 2000; Stanford University, 1998).

If the Reticular Activating System is not at normal levels, inappropriate behaviors (like those demonstrated with ADHD) are seen. When the Reticular Activating system is under-activated, behaviors including difficulty with learning, poor memory, and low
levels of self-control are seen (Duke University, 2000; Stanford University, 1998). If the Reticular Activating System is over-activated, the individual would demonstrate excessive startle reactions, hyper-vigilance, a need to touch everything within reach, excessive talking, hyperactivity, and restlessness (Duke University; Stanford University).

The functional and structural differences noted in brain functioning of ADHD individuals are currently very popular research topics. The attempt to understand the biology behind ADHD is one of today’s leading research endeavors (Duke University, 2000; NIH, 1999; Stanford University, 1998; Zull, 2002).

**ADHD and Sensory Processing**

Children with ADHD appear to have difficulty processing certain sensory information from the outside world, which interferes with the child’s performance of everyday tasks (Dunn & Bennett, 2002; Mulligan, 1996). According to Dunn and Bennett (2002), “children with ADHD may not be receiving and processing sensory information properly and therefore, have difficulty producing appropriate responses at school, home, and in the community” (p. 6).

There are several assessment tools available to address a child’s sensory processing abilities (Dunn & Bennett, 2002). Some of these assessments include: the Sensory Integration and Praxis Test (SIPT), the DeGang Berk Test of Sensory Integration, the Touch Inventory for Elementary School Children, and the *Sensory Profile* (Dunn & Bennet, 2002). Each of these assessments is administered in a different way (some standardized, some questionnaires, etc.), and each measures varying aspects of the sensory integration process. Therefore, it is important that a qualified healthcare professional (psychiatrist, psychologist, pediatrician/family physician, neurologist, or
clinical social worker) selects and administers the appropriate assessment for a specific individual (Dunn & Bennett, 2002).

In a study completed in 2002 using the Sensory Profile sensory processing assessment, Dunn & Bennett (2002) reported that, compared to children without ADHD, “children with ADHD had significantly lower [sensory processing] scores on more than half of the [assessment] items in the auditory, touch, multi-sensory, emotional/social responses, and behavioral outcomes” sections of the assessment (p. 10). Specific behaviors were identified for each of these categories.

Difficulties in auditory processing for ADHD children include: negative responses to unexpected or loud noises, distraction or trouble functioning if there is other noise around, can’t work if there are noises in the environment, appearing not to hear when spoken to even though hearing is fine (Dunn & Bennett, 2002). These correspond with the DSM-IV TR (2000) diagnostic criteria “often distracted by extraneous stimuli”, “often does not seem to listen”, and “often has difficulty sustaining attention in task or play activities” (p. 92).

Dunn and Bennett (2002) note that children with ADHD demonstrate touch sensory processing difficulties including: discomfort with dental work and/or tooth brushing, irritation with wearing socks and shoes, reacting emotionally or aggressively to touch, difficulty standing close to other people, rubbing/scratching a place that has been touched, touching people/objects to the point of irritation of others, not noticing when face/hands are dirty, and decreased awareness of pain and/or temperature.

The multi-sensory behaviors affected in children with ADHD include leaving clothing twisted around the body, hanging on people, furniture, and other objects
inappropriately, difficulty paying attention, and looking away from task to watch all actions occurring in room (Dunn & Bennett, 2002). These behaviors correspond with the DSM-IV-TR (2000) diagnostic criteria “often runs about or climbs excessively in situations in which it is inappropriate” and “is often ‘on the go’ or often acts as if ‘driven by a motor’” (p. 92).

Responses to emotional and social situations of ADHD children were also indicative of sensory processing impairments. Children with ADHD are commonly overly serious in social/emotional situations, they have difficulty with positive self-image, they react inappropriately/immaturely, are sensitive to criticism, act anxious, have excessively emotional outbursts if unsuccessful with a given task, feel like a failure, are stubborn/uncooperative, do not tolerate frustration, cry easily, difficulty with making friends, and does not tolerate change well (Dunn & Bennett, 2002). The DSM-IV-TR (2000) diagnostic criteria of ADHD fit these behaviors as children with ADHD “often avoid, dislike, or are reluctant to engage in tasks [situations] that require sustained mental effort” (p. 92).

Children with ADHD have difficulty understanding and implementing behavioral outcomes as well. Behaviors such as inefficient performance of tasks (i.e. wasting time, moving slowly, etc.), difficulty tolerating change of plans/expectations, difficulty with legible writing, and trouble staying within the lines when coloring and writing (Dunn & Bennett, 2002) are consistent with the DSM-IV-TR (2000) criteria “often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities” and “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)” (p. 92).

According to Dunn and Bennett (2002), “the Sensory Profile may be a useful tool for confirming central features of the [sensory aspects in the] diagnosis of ADHD” (p. 13). However, Mulligan (1996) found that, while the results of the SIPT test could help direct the sensory treatment of a child with ADHD, the SIPT scores alone do not indicate an accurate diagnosis of ADHD. A sensory processing assessment “offers a way to broaden the options for supporting children with ADHD to perform successfully at home, in school, and in the community” (Dunn & Bennett, 2002, p. 13), however, it is not an ADHD diagnostic assessment. In order to assure an accurate diagnosis of ADHD, an in-depth assessment administered by an appropriate healthcare professional must be completed (Jones, et al., 1999; NIMH, 2004; O’Connor, n.d.).

**ADHD Treatment Options**

The research and understanding of ADHD has increased significantly over the past 30 years (Schnoll, Burshteyn, & Cea-Aravena, 2003). With this increase of knowledge and information, the effective and prospective treatments for the disorder have also increased. According to Jones, et al. (1999), “children with ADHD who would have gone unrecognized and untreated only a few short years ago are being helped now, often with dramatic and positive results” (p. 15).

A wide range of ADHD treatment options are currently available to parents, families, physicians, as well as others who are working to manage ADHD symptoms. Some of these treatment options include both prescription and non-prescription medications, behavior management and parenting strategies, specialized diets, and
several controversial ADHD treatments that do not have the current research support required to be medically recognized (Jones, et al., 1999; NIMH, 2004; Reed, 1991).

Every child is different, and a child with ADHD also differs from other children with ADHD. It is important to recognize that a treatment that works well for one child with ADHD will not necessarily work well for another child with ADHD (Jones, et al., 1999; NIMH, 2004). Because of this, an appropriate ADHD treatment agenda must be established to meet that particular child’s ADHD symptoms and daily life needs.

Finding the right treatment agenda to help a child manage ADHD is extremely important. According to Jones, et al. (1999), “Compared with their peers, children with ADHD are at greater risk for school failure, emotional difficulties, and significant social problems” (p. 7). If ADHD is identified early and treatment is implemented, however, children with ADHD can beat these statistics (Jones, et al., 1999; NIMH, 2004; O’Connor, n.d.; Tynan; 1994).

In order to be successful in the treatment of ADHD, it is imperative that the parents, family, healthcare providers (including medical and psychological health), and the education team are working together (D’Alessandro & Huth, n.d.; Jones, et al., 1999; NIMH; 2004; O’Connor, 2001). Given children’s varying responses to different treatments and the number of potential ADHD treatments available today, parents and healthcare providers need to consider using a multidimensional treatment approach that implements a child-appropriate mixture of the available treatments. This multidimensional approach should include: parent training and education regarding ADHD and behavior management skills, appropriate and supportive educational
opportunities, counseling (individual, family, or a combination of the two), and medication as directed by a physician (D’Alessandro & Huth; Jones, et al.; NIMH).

With all treatment approaches, open, honest communication with the other involved individuals is absolutely necessary. Parents, teachers, physicians, and other individuals that spend time with the child with ADHD must work together and discuss which treatments are successful in ADHD management, and which treatments are not seeming to work as well in order to find the most appropriate, child-specific treatment regimen (Jones, et al., 1999; NIMH; 2004; O’Connor, 2001).

Symptoms of ADHD (including inattention, impulsivity, restlessness, social problems, academic difficulties, etc.) are not exclusive to ADHD. Because these symptoms may be indicative of other childhood disorders, it is important to thoroughly understand these symptoms and problems while working closely with both the child’s physician and teacher (as well as any other individual that spends time with that child during the course of a day) to ensure ADHD management and a higher rate of treatment success (Carey, 1999; Jones, et al., 1999).

Taking into account these treatment considerations, the following sections address both scientifically supported ADHD treatment approaches as well as some treatment approaches that do not currently have the supporting research and/or sufficient trial population success. It is important, however, to recognize that these treatment approaches exist, and that they are being implemented to help manage ADHD (Jones, et al., 1999; Mulligan, 1996; NIMH, 2004; O’Connor, n.d.; Schnoll et al., 2003; Stancliff, 1998).
ADHD Medications

Stimulant medications have been available for approximately the past 50 years (Deglin & Vallerand, 2003; Micromedex & Multum, 2004). Stimulant medications are the most frequently used medications in the quest to manage ADHD symptoms (Cowan, n.d.; Deglin & Vallerand; Jones, et al., 1999; Micromedex & Multum; NIMH, 2004; O’Connor, 2001), and with “at least 70% to 80% of children and adults with ADHD respond[ing] positively” (Jones, et al., 1999, p. 7); it is clear why most doctors choose to try stimulant medications for clients with ADHD.

According to Jones, et al. (1999), stimulant “medications enhance performance, and most children with ADHD who take medications show dramatic improvement, with reductions in impulsive and hyperactive behaviors and increases in attention span” (p. 7). Stimulants show improvement in these desired behaviors by “allowing the brain to focus on the right thing at the right time” by increasing the brain’s ability to control and inhibit itself (Cowan, n.d.; Deglin & Vallerand, 2003; Jones, et al.; Micromedex & Multum, 2004; NIMH, 2004; O’Connor, n.d.).

The most commonly prescribed stimulant medication for ADHD is methylphenidate, which is more commonly known by its brand name, Ritalin (Cowan, n.d.; Deglin & Vallerand, 2003; Jones, et al., 1999; Micromedex & Multum, 2004; NIMH, 2004; O’Connor, 2001). Ritalin (methylphenidate) has the largest amount of research to support its effectiveness in the treatment of ADHD (Cowan; Deglin & Vallerand; Jones, et al.; Micromedex & Multum; NIMH; O’Connor). While Ritalin has been very effective in the treatment of ADHD symptoms, some children do not respond well to the medication. Both the child’s physician and the child’s parent must be cautious
and vigilant to the child’s behaviors and response while taking methylphenidate (Ritalin). Ritalin is a serious and potentially dangerous drug that must be administered conservatively and carefully monitored (Deglin & Vallerand; Jones, et al.; Micromedex & Multum; O’Connor).

Other stimulant medications that are commonly prescribed in the treatment of ADHD symptoms include: Dextroamphetamine (brand name: Dexedrine), Sodium Pemoline (brand name: Cylert), and Amphetamine mixtures (brand name: ADDerall) (Cowan, n.d.; Deglin & Vallerand, 2003; Jones, et al., 1999; Micromedex & Multum, 2004, NIMH, 2004; O’Connor, 2001). Less research has been conducted with these medications than has been done with methylphenidate (Ritalin) (Deglin & Vallerand; Jones, et al.; Micromedex & Multum). ADDerall has been referred to as “the new ‘up and coming’ medication” (Cowan; Deglin & Vallerand; Jones, et al.; Micromedex & Multum). As it requires less frequent dosing and is considered “less harsh” than Ritalin (Cowan; Deglin & Vallerand; Micromedex & Multum). As with any medication, monitoring the effects of any of these stimulants treatments is absolutely necessary in order to find the most effective treatment for a child with ADHD.

Besides stimulant medications, other pharmacotherapy interventions have been found to be successful in the management of ADHD symptoms (Deglin & Vallerand, 2003; Jones, et al., 1999; Micromedex & Multum, 2004; NIMH, 2004). Antidepressant medications including tricyclic antidepressants (TCAs), Buproprion (brand name: Wellbutrin), MAO Inhibitors (i.e. Nardil), and Fluoxetine (brand name: Prozac) have all been prescribed to individuals with ADHD and have been successful in the management of symptoms in some cases (Deglin & Vallerand; Jones, et al.; Micromedex & Multum;
Recently, the Food and Drug Administration (FDA) approved a new non-stimulant medication for ADHD (Eli Lilly & Company, 2004). Atomoxetine HCl (brand name: Strattera) is the first non-stimulant medication approved by the FDA to treat ADHD symptoms (Eli Lilly & Company).

With the vast amount of research into ADHD and pharmacotherapy interventions (Deglin & Vallerand, 2003; Eli Lilly & Company, 2004; Jones, et al., 1999; Micromedex & Multum, 2004; NIMH, 2004), new medications, like Strattera, and more extensive information/research regarding medications already available for the treatment of ADHD will be available. This is important in the safe and effective pharmaceutical treatment of ADHD because, although current ADHD drug treatments are effective in the immediate reduction of ADHD symptoms, the long-term effects and success of these medications is not certain (Deglin & Vallerand; Eli Lilly & Company; Jones, et al.; Micromedex & Multum; NIMH).

**Behavior Modification with ADHD**

Inappropriate behaviors are a major hurdle for individuals with ADHD that must be overcome in order to participate successfully in everyday activities (Dunn & Bennett, 2002; Jones, et al., 1999; Mulligan, 2001). Strategies to increase the occurrence of desired behaviors and decrease the occurrence of undesirable behaviors are known as behavior modification strategies (Jones, et al.). According to the authors, behavior modification strategies have been proven to be effective in management of ADHD; therefore; behavior modification strategies should be included in all ADHD treatment regimes.
In order to achieve success with behavior modification, it is imperative that the rewards and punishments are consistent between parents, teachers, and all other caregivers that spend time with the child during the day. If the reward/punishment varies between parents or between teachers, the child becomes confused about which behavior is appropriate (Jones, et al., 1999; Walker, 2002).

Jones, et al. (1999) write that rewarding desired behaviors increases the occurrence of those behaviors while punishment of undesirable behaviors decreases the occurrence of the negative behaviors. Punishment of undesirable behaviors is less successful in behavior modification than is rewarding desired behaviors because the child does not connect the punishment with the undesirable behavior. For instance, in a school setting, if the child interrupts and is reprimanded by the teacher, the child may interpret the reprimand as attention and therefore interrupt more frequently in order to obtain more attention from the teacher (Jones, et al; Mulligan, 2001; Walker, 2002).

Because behavior modification is a process and not an overnight remedy, it is important to continuously implement the modification strategies over a period of time especially if inconsistent reward/punishments have been administered in the past. All behaviors cannot be modified at the same time; best results are achieved when rewards/punishments focus on two to three desired behaviors at a time (Jones, et al., 1999; Mulligan, 2001; Walker, 2002).

To instill the desired behaviors, the child should be made aware of the desired behavior and the consequences and rewards of the behavior should be clearly defined. For greatest success, each behavior must be rewarded every time in each situation in which it occurs (Jones, et al., 1999; Mulligan, 2001; Walker, 2002).
Behavior modification strategies have proven to be effective in management of behaviors in children with ADHD (Jones, et al., 1999; Mulligan, 2001; Walker, 2002).

**Diet and ADHD**

Dietary interventions as a method of treatment of ADHD are highly controversial (Jones, et al., 1999; Schnoll, et al., 2003). Advocates for dietary approaches to ADHD treatment suggest that the elimination and/or reduction in a variety of food substances including processed sugars, food colorings, preservatives, and even fiber content can impact a child’s behavior and ability to attend (Cowan; Jones, et al.; Lavalle, 1998; Lavalle, 1999; Schnoll, et al., 2003).

Several dietary interventions are available for implementation in the treatment of ADHD (Cowan, n.d.; Jones, et al., 1999; Lavalle, 1998; Lavalle, 1999; Schnoll, et al., 2003). One of the most widely-known diets for the treatment of the learning and attention problems of children with ADHD is the Feingold Diet (Jones; Schnoll, et al.). Feingold proposes that some children develop ADHD symptoms as a toxic reaction to food additives such as synthetic food colors, flavors, and preservatives (Jones, et al.; Schnoll, et al.). In the Feingold Diet literature, there are claims that “additive-free diets will improve most, if not all, of the learning and attention problems children experience” (Jones, et al., p. 16).

Many dietary approaches to the treatment of ADHD are available with suggestions for what should and should not be included in the menu of children with ADHD (Cowan, n.d.; Jones, et al., 1999; Lavalle, 1998; Lavalle, 1999; Schnoll, et al., 2003). One of the many ADHD diets available today involves a two plus week diet plan of food eliminations and restrictions. In the first two weeks, the diet involves the
elimination of all dairy products, all “yellow” foods (including corn, squash, etc.), all “junk foods,” fruit juices, decreased sugar intake by 90-100%, decreased chocolate intake by 90%, the elimination of processed meats, decreased fried food intake by 90%, and avoiding food coloring in foods (Cowan, n.d.). After the initial two weeks on the dietary restrictions, each food is added back into the diet at high levels for four days. Within these four days, the caregiver watches for a reaction to the foods added back into the diet in the form of a rash. If no rash occurs, the food is safe to be eaten by the individual (Cowan, n.d.). This dietary intervention has a 20% success rate in decreasing ADHD symptoms in children who participate (Cowan, n.d.).

The majority of dietary interventions in ADHD treatment relate processed sugar intake with ADHD behaviors (Jones, et al., 1999; Lavalle, 1998). However, most of the studies done to examine the relationship between sugar and ADHD have unclear results (Jones, et al.). The few well-designed studies with clear interpretations that have been conducted in regard to the sugar/ADHD relationship have found that sugar could possibly affect behaviors, however, these effects are very small, and only a small percentage of children with ADHD appear to be vulnerable to these effects (Jones, et al.).

Despite the recent popularity of these dietary interventions, the actual success rate of these interventions is not well documented. In those instances where dietary intervention success is documented, the statistical problems are rampant (Jones, et al., 1999). According to the authors, “although proponents of dietary approaches might acknowledge that careful scientific studies are necessary, such studies have not been conducted” (p. 16).
While a balanced diet is important for a child’s physical and emotional health (Cowan, n.d.; Jones, et al., 1999; Lavalle, 1998; Lavalle, 1999; Schnoll, et al., 2003), there is little, if any, support to link diet and the behaviors and learning of children indicating that there is little, if any, link between diet and ADHD (Jones, et al.).

**Controversial Treatments for ADHD**

Because the exact cause of ADHD has not been pinpointed, the best treatment of the disorder is highly controversial. The majority of the ADHD treatment options available do not have sufficient scientific and research backing to support them as effective treatment options despite the consumer testimonials regarding the miracle treatments. If the caregiver of a child with ADHD chooses to implement one of the more controversial ADHD treatment approaches that are available, it is important that the child’s physician and healthcare team are aware of the treatment approach, and that the caregiver is well-informed regarding treatment implementation and possible side-effects (Jones, et al., 1999).

Jones, et al. (1999) write that one of these controversial ADHD treatment options is the use of megavitamins and mineral supplements in ADHD management. This is a popular approach to ADHD management because vitamins are thought to be synonymous with health. Because these substances are natural, it is assumed that they are safe, however, this is not always the case. If vitamins/minerals are used in excess, they can cause health problems. Even when used properly, megavitamins and mineral supplements have little scientific evidence of making a difference in the hyperactivity, learning, and attention behaviors of children with ADHD (Barratt & Wilder, Ltd., 2004; Jones, et al.).
Another controversial ADHD management approach is the use of anti-motion sickness medications with children with ADHD. Proponents of this treatment option claim a success rate in excess of 90%, however the research to support the treatment has not been thoroughly conducted. Those practitioners who recommend anti-motion sickness medications for ADHD treatment typically believe that the ADHD symptoms are the result of coordination and balance problems related to dysfunction in the child’s inner ear. Though the cause of ADHD is not known, the current knowledge about the disorder does not support the link between the inner ear system and ADHD behaviors (Jones, et al., 1999).

According to Jones, et al. (1999), the theory of Candida Yeast as a cause of ADHD is also controversial and not widely accepted. This theory indicates the bacteria, *candida albicans* (the bacteria commonly responsible for vaginal yeast infections as well as infections of the mouth, skin, and nails), weakens the body’s immune system, which makes the body more susceptible to illness including ADHD. The treatment of Candida Yeast involves anti-fungal medications to rid the body of *candida albicans*, along with a low-sugar diet in conjunction with a vitamin and mineral regimen. There is very little evidence available to support this theory as a treatment of ADHD.

The theory of EEG Biofeedback boasts increased self-control, increased attention span and learning, and decreased temper and impulsivity (Cowan, n.d.; Rossiter & La Vaque, 2002). The theory suggests, “children with ADHD can be trained to increase the type of brainwave activity associated with sustained attention and decrease the type of activity associated with daydreaming and distraction” (Jones, et al., 1999, p. 17). EEG Biofeedback, also called Neurofeedback, is not new and is not only used with individuals
with ADHD (Cowan; Jones, et al.; Rossiter & La Vaque). Training with EEG Biofeedback has been used in training athletes and business executives and is available in most cities in the United States, however, the treatment sessions are extensive and expensive, and there is limited published research to support its use with ADHD (Cowan; Jones, et al.; Rossiter & La Vaque).

The use of physical activity as a treatment method of ADHD is addressed in the controversial Brain Gym approach to ADHD management (Dennison & Dennison, 1989). This theory suggests that physical movements have the capability allowing different areas of the brain to connect thereby increasing attention, focus, coordination, and many other behavioral aspects often noted in children with ADHD. The scientific research supporting Brain Gym activities as an effective ADHD management approach are limited, however, the authors indicate that, with consistent implementation of the activities, ADHD behaviors are reduced and daily life performance is enhanced (Dennison & Dennison).

**Family Life and ADHD**

According to Jones, et al. (1999), “a family is like an engine—when one piece of the engine is having trouble, the engine won’t work properly” (p. 45). Families with children who have ADHD often have an interruption in the normal, smooth workings of the engine. The child with ADHD affects the family dynamics, and the family affects the dynamics of the child (Jones, et al.; Leipold & Bundy, 2000; Stancliff, 1998; Walker, 2004).

Parenting a difficult child escalates the stress level placed on a family. Parents are commonly concerned with their child completing homework or other school
assignments, completing the household chores and responsibilities left to the child, enjoying a peaceful family dinner, and going to bed at a reasonable time. Often it seems as though a child with ADHD cannot stop what they are doing and listen to the parent’s directions, or the child has trouble translating what the parent says into the actions they need to take. These ADHD behaviors raise the stress level within the household (Jones, et al, 1999; Leipold & Bundy, 2000; Stancliff, 1998; Walker, 2004).

In several studies, the parents and families of children with ADHD found that the best way of dealing with the daily task concerns was to set routines for family life. In these studies, some of the parents allowed their child to take a short break after school before starting homework with all homework completed before dinner. For many families, having homework finished before dinner alleviated the stress associated with completing homework later in the evening because, first, the child was able to concentrate more on the homework/schoolwork tasks since their effects of their daily medications were still working before the dinner hour, and second, with all homework complete, bedtimes could be more consistent without worrying that the schoolwork was not complete. Some families chose to schedule “homework time” after dinner, however there were more frequent reports of decreased attention to task and less consistent bedtimes. All of the daily routines that families constructed were consistent with that families particular needs and schedules. This is important to consider because, like children with ADHD, all families and family needs are different, and the schedule that works for one family may not work for the next family (Cronin, 2004; Jones, et al., 1999; Segal, 2000; Segal & Frank, 1998).
Jones, et al. (1999) note that there are several considerations that must be taken into account when establishing a family routine/schedule. Household rules by which all family members must abide should be written. These rules should be written using positive statements that are specific, non-negotiable, and ongoing. Established rules should be very specific giving exact expected behaviors with clear, specific consequences. Rules need to be specific, but having fewer rules ensures better compliance with the rules. If the number of rules is too high, the child has a difficult time remembering all of the rules and their consequences so there is a higher rate of rule success when the rules are a shorter list of the basic expectations of the household (Cronin, 2004; Jones, et al.; Segal, 2000; Segal & Frank, 1998).

When creating the family routine, potential problems and/or problem situations should be anticipated and a plan of action should be created to address these potential problems. The development of self-control and self-monitoring behaviors is essential for children with ADHD. By supporting and encouraging the child to develop these skills, the child will be more prepared to effectively handle problems and/or problem situations (Cronin, 2004; Jones, et al., 1999; Segal, 2000; Segal & Frank, 1998).

Dealing with the stressful situations that occur with a child with ADHD can be taxing on the parents and caregivers (Jones, et al., 1999). The most important factor in handling the stressful situations that arise involves the key to behavior modification strategies—consistency (Jones, et al.). Help and support from extended family, friends, clergy, professional counseling, or ADHD support groups have also proven successful in dealing with stressful behaviors and situations which arise secondary to ADHD behaviors (Cowan, n.d.; Jones, et al.).
Implementing strategies to manage ADHD behaviors will help reduce the stress in managing the behaviors. To ensure that the child is listening to instructions, the child should be asked to repeat the task directions back to the parent. Engaging the child in verbal communication (through asking questions, etc.) forces the child to engage in the conversation and helps them to stay on task. Another effective communication approach involves touching the child gently while speaking to him/her, using the child’s name in the discussion, and making and holding eye contact throughout the conversation all help the child to cue into the interaction.

As a parent or caregiver of a child with ADHD, repeated inattentive and hyperactive behaviors are trying on patience levels (Jones, et al., 1999). According to the authors, although it may be difficult, empathy is the best approach for teaching a child with ADHD. Reinforcement of the child’s strengths helps the child to learn the desired lesson while maintaining a positive self-image.

Making mistakes is inevitable, however, children with ADHD do not manage making mistakes effectively. Parents of children with ADHD need to teach their child decision-making and problem solving skills. The child needs to develop self-discipline and self-control. Teaching a child with ADHD problem solving and self-control through discipline, encouragement, and positive feedback helps the child function more effectively within the family and in other daily situations that arise (Cronin, 2004; Jones, et al., 1999; Segal, 2000; Segal & Frank, 1998).

With all of the parenting requirements children with ADHD impose; some families’ lives seem to revolve around the child with the disorder. The family unit should still function like an engine, with each piece playing a vital role. Even though a child
with ADHD requires significant parenting, all children need the parents’ attention and
guidance. To achieve this, it is important for all family members to understand ADHD
and the related behaviors to help manage the ADHD. It is also vital that the parents set
aside time where they can maintain their relationship, because, as discussed, having a
child with ADHD places a significant amount of stress on the parents of the child, and a
healthy relationship between the parents will positively effect all family members (Jones,
et al., 1999).

School Issues

Given that today 3% to 7% of school-aged children are affected by ADHD, those
statistics translate into every classroom in the United States having one to two students
with ADHD (DSM-IV-TR, 2000; Jones, et al., 1999; Tynan, 1994). With these numbers,
it is important that parents and teachers of children with ADHD are informed regarding
the disorder (Jones, et al.).

Effect management and treatment of ADHD requires open and continual
communication between the child’s parents/caregivers and the child’s school (Jones, et
al., 1999, Mulligan, 2001). According to Jones, et al. (1999), during the school term, it is
common that the person who has the most contact with the child during the course of a
regular weekday is that child’s classroom teacher. Because of this, the teacher plays a
vital role in the diagnosis and therapy plan for a child with ADHD, as they are able to
supply invaluable information regarding the child’s cognitive and behavioral
performance. The teacher can also provide information on treatments and therapeutic
goals that are successful and those that need to be reassessed through lengthy
observations of the child’s functioning and behaviors. Because they have a wealth of
helpful information and observations of behaviors and abilities, it is imperative that teachers know that their input is both valued and desired.

Children spend the majority of their time in a school setting, and because the prevalence of ADHD is so high, schools should have ADHD management strategies in place (Jones, et al., 1999). The Individuals with Disabilities Education Act (IDEA) ensures that all children with disabilities are fairly and appropriately included in the public education system (Florey, 1998; McGruder, 1998; Yerxa, 1998). With IDEA, children between 3 and 21 years of age are provided with an Individualized Education Program (IEP) if they qualify for the school’s special services (dependent upon the extent of ADHD experienced) (Florey; McGruder; Yerxa). Components of the IEP include evaluation of the child’s present level of educational performance, the strengths of the child and parents’ concern for enhancing their child’s education, goals and short-term instructional objectives in areas the child requires specially designed instruction (evaluated annually), a statement of specific educational services needed, extent of regular classroom participation, a projected date for start and anticipated duration of services, criteria and evaluation processes of whether or not objectives are met, and access to extended services (including assistive technology services) when needed (Florey, p. 579).

Success in the classroom often requires a range of interventions for a child with ADHD (Jones, et al., 1999; Mulligan, 2001; NIMH, 2004). Most children with ADHD can stay in a regular classroom with minimal adjustments in the setting, additional personnel support, and/or some special education interventions with high success levels (Jones, et al.). Support services, including occupational therapy are available to help both
the child and the class achieve success without extensive classroom interruptions (Jones, et al.; Mulligan, 2001; NIMH, 2004).

**Parent Roles**

As written in the family section of this document, ADHD places significant stress on the parents and families of children with ADHD as well as on the child. Early identification of ADHD and proper treatment of the disorder drastically reduce the family, educational, behavioral, and psychological problems experienced with ADHD (Jones, et al., 1999; NIMH, 2004; Segal, 2000; Segal & Frank, 1998; Stancliff, 1998).

When diagnosing ADHD, the physician or healthcare provider has the opportunity to play an important role in the child’s life while the child’s parents see diagnosis of the disorder as troubling and feel overwhelmed. With appropriate treatment and management, ADHD does not have to have a negative impact on the family (Jones, et al., 1999; NIMH, 2004; Segal, 2000; Segal & Frank, 1998; Stancliff, 1998).

The parents of a child with ADHD know their child’s strengths and weaknesses best and therefore, the parent’s need to advocate, promote, and/or defend their child and the rights of their child. The parents are the coordinator of the team, which includes the parents, the child, the physician, mental health professionals, therapists, and teachers. It is the responsibility of the parents to educate themselves and other individuals involved with their child about ADHD. Not all of the ADHD team members are experts on ADHD so it is important that information and experiences are shared freely among all group members. The child also needs to know about the disorder, as do siblings and other family members (Jones, et al., 1999; NIMH, 2004; Segal, 2000; Segal & Frank, 1998; Stancliff, 1998).
The child with ADHD also needs to be included in treatment planning (Jones, et al., 1999). The treatment that typically works in ADHD management for one child may not work in all cases so the treatment team should be open and willing to listen to the child’s needs and requests (Jones, et al.; Stancliff, 1998). For example, individual counseling has proven to be an effective ADHD management strategy for some individuals while some find family counseling more beneficial (Jones, et al., 1999; NIMH, 2004; Stancliff, 1998). The treatment regimen itself does not make ADHD management successful, it is the compliance with treatment and the collaborative team effort that shows the highest success rates in ADHD management (Jones, et al.; Stancliff).

Children with ADHD show increased rates of childhood depression and low self-esteem (Jones, et al., 1999). They often feel left out of normal childhood activities and show decreased participation in play (Leipold & Bundy, 2000). In order to address these concerns, it important that the child’s parents help involve that child in social aspects. Parents of children with ADHD often have to take a larger, more hands-on role in the socialization of their child (Jones, et al.).

Raising a child with ADHD takes considerable discipline, involvement, and most of all, patience (Jones, et al., 1999). As an important role in the ADHD treatment team, parents also see the most rewarding results of understanding, managing, and treating the signs and symptoms of ADHD to help their child succeed in the daily functioning tasks they encounter (Stancliff, 1998, Jones, et al., 1999).
References


CHAPTER III

METHODOLOGY

The handbook, Living with ADHD: The Parent’s Guide to Childhood ADHD Management, was developed based on ADHD diagnostic and treatment information that was found through a review of current research and literature. The handbook was created to inform the parents of children with ADHD about the disorder and its impact on their child’s behavior and activities. It contains information about what is known about the disorder, the treatment options currently available, what to expect in daily life and activities, and some suggestion to help manage the symptoms of ADHD.

The background information for the completion of this project was obtained by completing a review of current research and literature available regarding ADHD. The key points addressed in the literature review for this project included: review of diagnosis and characteristics of ADHD, current ADHD treatment options, issues surrounding family life and school, and the roles of parents in management of ADHD.

The information about ADHD was then combined with the Model of Human Occupation (MOHO), an occupational theory. The key concepts of this theory are: volition (motivation and choice behind a behavior), habituation (the organization of a task into patterns and routines), and mind-brain-body performance (the physical and mental ability to perform the activity), as well as the physical context or surroundings where the activity is taking place (Kramer, Hinjosa, & Royeen, 2003). The product was
developed by incorporating the information gained from the literature review with the key concepts of MOHO.
CHAPTER IV

Attention deficit hyperactivity disorder (ADHD) is a common childhood disorder, however little is known about the cause of ADHD. Because of this, parents can be overwhelmed and discouraged when their child is diagnosed with the disorder. This handbook was created to inform the parents of children with ADHD about what is known about the disorder, the treatment options currently available, what to expect in daily life and activities, as well as some suggestion to help manage the symptoms of ADHD. The information presented in this handbook is general, therefore, further professional consultation and support is highly recommended. The intent of this handbook is that it be used under the guidance of an occupational therapist.
LIVING WITH ADHD:
THE PARENT’S GUIDE TO CHILDHOOD ADHD MANAGEMENT
Preface

A child with attention deficit hyperactivity disorder (ADHD) affects the whole family structure. The daily activities of the child and the family are disrupted. Even though ADHD is a common childhood disorder, little is known about the cause of the disorder. Because of this, parents can be overwhelmed and discouraged when their child is diagnosed with the disorder. This handbook was created to inform the parents of children with ADHD about what is known about the disorder, the treatment options currently available, what to expect in daily life and activities, and it includes some suggestions to help manage the symptoms of ADHD. The information presented in this handbook is general, therefore, further professional consultation and support is highly recommended. The intent of this handbook is that it be used under the guidance of an occupational therapist.
TABLE OF CONTENTS

DESCRIPTION OF ADHD ................................................................. 1
  Quick Facts about ADHD .......................................................... 1
  The Cause of ADHD ................................................................. 2
  How ADHD Affects Brain Function ............................................ 3
  Criteria for Diagnosing ADHD ................................................... 4
  Who Can Diagnose ADHD .......................................................... 6
  ADHD Assessment ................................................................. 7

OCCUPATIONAL THERAPY AND ADHD .......................................... 8

TREATING ADHD ........................................................................... 9
  ADHD Medications ................................................................. 11
  Behavior Modification .............................................................. 16
  Diet and ADHD ......................................................................... 17
  Controversial ADHD Treatments ............................................... 18

LIVING WITH ADHD ..................................................................... 20
  Child ....................................................................................... 20
  Family .................................................................................... 21
  School ..................................................................................... 22
  Parent Roles ............................................................................. 23

SUGGESTED ACTIVITIES FOR ADHD MANAGEMENT ....................... 24
  Everyday Strategies .................................................................. 24
  Sensory Integration Games ....................................................... 26
  In the Classroom ....................................................................... 32
  Brain Gym Activities .................................................................. 34

FREQUENTLY ASKED QUESTIONS .................................................. 44

PARENT ADHD RESOURCES .......................................................... 49

ADHD GLOSSARY ......................................................................... 51

PHOTOGRAPH RELEASE FORM .................................................... 54

REFERENCES ................................................................................. 55
DESCRIPTION OF ADHD

Attention deficit hyperactivity disorder (ADHD) is a common childhood disorder. Children with ADHD demonstrate developmentally inappropriate degrees of inattention, impulsivity, and hyperactivity (Mulligan, 2001, Reed, 1991, Tynan, 1994).

QUICK FACTS ABOUT ADHD:

- ADHD affects between 3%-7% of school-aged children
- In the United States, approximately 2 million children are affected by ADHD
- Boys are more commonly affected than girls
- Not every child who demonstrates hyperactive, inattentive, or impulsive behaviors has ADHD

(Information adapted from: Jones, Searight, & Urban, 1999; NIMH, 2003; Reed, 1991)
THE CAUSE OF ADHD:

- The exact cause of ADHD is not well understood
- The most current research indicates ADHD is a neurological disorder, meaning ADHD results from the brain not functioning properly
- Research indicates that ADHD may be related to genetic, biological, experiential, and social factors
- ADHD is NOT the result of poor parenting

(Information adapted from: Cowan, 2004; Jones, et al., 1999; NIMH, 2003; Reed, 1991)
HOW ADHD AFFECTS BRAIN FUNCTION:

- Several areas of the brain are affected by ADHD
- Frontal lobe:
  - Thought to be most affected by ADHD
  - Helps individual pay attention, focus on tasks, concentration, decision making, planning, learning and recalling learned information, and behaving appropriately
- Cortex:
  - Inhibitory mechanism
    - 70% of the human brain must inhibit the other 30% of the brain for appropriate behaviors
  - Helps manage hyperactivity levels, speak in turn, manage angry reactions, and other behaviors which need to be appropriately “inhibited”
  - When the inhibitory mechanism does not successfully manage the brain, behaviors including a quick temper, poor decision making, hyperactivity, and other negative behaviors result
- Limbic system:
  - Responsible for emotion and level of arousal
  - Facilitates emotional changes, energy levels, sleep patterns, and coping with stress levels
  - Functions at high levels in children with ADHD causing frequent mood swings (including temper outbursts), easily startling, and a desire to touch any and everything within reach.
- Reticular Activating System:
  - Known as the attention and motivation center of the brain
  - Where the information from the outside world intersects with the internal environment
  - Allows attention to appropriate task when functioning properly, allows attention to appropriate task
  - When under-activated, behaviors including difficulty with learning, poor memory, and low self-control
  - When over-activated, behaviors including excessive talking, hyperactivity, and restlessness

(Information adapted from: Duke University, 2000; NIH, 1999; Stanford University, 1998; Zull, 2003)

The differences in brain functioning and structure seen with ADHD are currently very popular research topics (NIMH, 2003). The information and knowledge about ADHD is growing and changing rapidly so it is important to stay informed on the latest developments.
CRITERIA FOR DIAGNOSING ADHD:

According to the American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders IV- Text Revision* (2000), the diagnosis of ADHD must meet specific criteria. These criteria include:

- A combination of characteristics including impulsivity, inattention, and hyperactivity before the age of 7
- Child must demonstrate six or more of the inattention or hyperactivity-impulsivity behaviors (TABLE ON P. 6) for at least 6 months
- Inattention/hyperactivity-impulsivity behaviors must affect the child’s ability to function in more than one setting (examples: at home, in school, with friends, on the playground, etc.)
- To be diagnosed with ADHD, behaviors must be inappropriate for the child’s developmental level
- Other factors affecting the child’s behaviors including
  - Sudden change in the child’s life (like a death in the family, parents’ divorce, loss of parent’s job, etc.)
  - Undetected seizures
  - Middle ear infection
  - Other medical disorders affecting brain function
  - Learning disabilities
  - Anxiety or depression
  - Hearing or vision problems must be ruled out before diagnosing ADHD.

### Inattention:
(six or more of the following behaviors)

- Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
- Often has difficulty sustaining attention in tasks or play activities.
- Often does not seem to listen when spoken to directly.
- 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).
- Often has difficulty organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework).
- Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools).
- Is often easily distracted by extraneous stimuli.
- Is often forgetful in daily activities.

### Hyperactivity-Impulsivity:
(six or more of the following behaviors)

- Often fidgets with hands or feet or squirms in seat.
- Often leaves seat in classroom or in other situations in which remaining seated is expected.
- 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).
- Often has difficulty playing or engaging in leisure activities quietly.
- Is often “on the go” or often acts as if “driven by a motor.”
- Often talks excessively.
WHO CAN DIAGNOSE ADHD:

- Problems exist with both the over-diagnosis and the under-diagnosis of ADHD
- According to Carey (1999), only 53.5% of clinicians use school reports of child behaviors and only 38.3% use the DSM-IV in diagnosing ADHD
- As awareness of ADHD increases, the number of children diagnosed with ADHD also increases
- Diagnosis of ADHD should be made by a professional with training/expertise in ADHD
- Symptoms of ADHD are not specific to the disorder, and if proper diagnostic measures are not taken, a child with another disorder (including depression, anxiety, Tourette’s Syndrome, and other disorders) has the potential of being misdiagnosed with ADHD
- If the healthcare provider is not familiar with ADHD and ADHD characteristics, it is common for the ADHD behaviors to be misunderstood as acting out/misbehaving characteristics
- As many as 2 out of 3 individuals with ADHD will never be accurately diagnosed with ADHD

(Information adapted from *DSM-IV-TR*, 2000; Jones, et al., 1999; NIMH, 2003; O’Connor, 2001)

<table>
<thead>
<tr>
<th>SPECIALIST</th>
<th>ABILITY TO DIAGNOSE ADHD</th>
<th>ABILITY TO PRESCRIBE ADHD MEDICATIONS</th>
<th>PROVIDE TRAINING AND COUNSELING</th>
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<tr>
<td>Psychiatrist</td>
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<td>Psychologist</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Pediatrician/Family Physician</td>
<td>YES</td>
<td>YES</td>
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</tr>
<tr>
<td>Neurologist</td>
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<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Clinical Social Worker</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

(NIMH, 2004, p.4)
ADHD ASSESSMENT:

In assessing whether or not a child has ADHD, the following information should be gathered and taken into consideration:

- An extensive parent interview
- Thorough investigation of child’s developmental history
- Family history
- Observations from child’s teacher(s)
- In-depth interview with the child

Behavior observations of all individuals that spend time with the child are important because children demonstrate different behaviors in different situations at different times of the day.

Everyday life is significantly impacted by ADHD. An accurate diagnosis is very important so that measures can be taken to begin to manage ADHD.

(Information adapted from: Jones, et al., 1999; NIMH, 2003; O’Connor, 2001)
OCCUPATIONAL THERAPY AND ADHD

Occupational therapy (OT) is “the art and science of helping people do the day-to-day activities that are important to them despite impairment, disability, or handicap” (Florey, 1998, p. 630). With ADHD, the day-to-day activities are interrupted significantly. Therefore, individuals with ADHD benefit from OT services.

The Model of Human Occupation (MOHO) is an appropriate occupational therapy model for use in treating ADHD. With MOHO, the individual is seen as a system made up of three subsystems: volition (motivation and choice behind behavior), habituation (organization of task into patterns and routines), and mind-brain-body performance (the physical and mental ability to perform including any experience with the activity, which influences performance). MOHO also looks at environmental factors that may influence task performance (Kramer, Hinjosa, & Royeen, 2003; Yerxa, 1998).

With ADHD, volition, habituation, and mind-brain-body performance are not functioning together for appropriate participation in daily life activities. When treating a child with ADHD using MOHO, OT addresses each of the three subsystems and helps that child try to achieve a balance between the three for increased success in all activities.

The environment plays a large role in appropriate task participation. Different individuals require different approaches for successful task completion, and using MOHO, helps the therapist identify environmental factors (in the home, at school, etc.) that will help the child with ADHD be most successful in maintaining the subsystem balance in day-to-day activities.
TREATING ADHD

The research and understanding of ADHD has increased dramatically over the past 30 years (Schnoll, Burshteyn, & Cea-Aravena, 2003). With the increase of knowledge about ADHD, the disorder is better understood, and more treatment options become available. A wide range of ADHD treatment options are currently available. Some of these options include:

- Prescription medications
- Non-prescription medications
- Behavior management and parenting techniques
- Specialized diets
- Other controversial interventions

(Information adapted from: Jones, et al., 1999)

It is important to recognize that no single ADHD treatment option will work in every case. The treatment that works well for one child may not be successful in managing ADHD for another child. With this in mind, IT IS VITALLY IMPORTANT TO CONSULT AND MAINTAIN CLOSE COMMUNICATION WITH THE CHILD’S PHYSICIAN AND/OR PROFESSIONAL ON THE ADHD TREATMENT TEAM so that the most appropriate and effective ADHD treatment regimen can be implemented (Jones, et al., 1999; NIMH, 2003; O’Connor, 2001).

Often, a multidimensional treatment approach is most successful in ADHD management. A multidimensional approach is a child-appropriate mixture of ADHD treatment options including:

- Parent training/education on ADHD and behavior management techniques
- Appropriate and supportive educational opportunities
- Possible counseling (individual, family, or a combination of the two)
- Medications (as directed by a qualified professional)
- Other treatment options

(Information adapted from: Jones, et al., 1999; NIMH, 2003)
With any ADHD treatment approach it is important to remember that the
treatment regimen itself does not make ADHD management successful. Success happens
when there is compliance with the treatment regimen and a collaborative team effort
ADHD MEDICATIONS

There are different medications available for the management of ADHD. Some of the prescription medications include:

STIMULANTS:
- Have been available for approximately the past 50 years
- Most frequently used in ADHD management
- Show improvement in desired behaviors through increased inhibition
- 70%-80% of individuals show improvement with reduced impulsive and hyperactive behaviors

<table>
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<tr>
<th>MEDICATION: methylphenidate (long-acting and extended release)</th>
<th>BRAND NAME: Concerta, Metadate ER, Metadate CD, Ritalin, Ritalin SR, Ritalin LA</th>
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<tbody>
<tr>
<td>Positive Aspects</td>
<td>Drawbacks</td>
</tr>
<tr>
<td>q Safe for use with children 6 years and older</td>
<td>q Possible side-effects include: weight loss, insomnia, dizziness or blurred vision, skin rash, vomiting, or fever</td>
</tr>
<tr>
<td>q Improves ability to pay attention and control impulsive behaviors (like speaking out in class)</td>
<td>q Acting-out behaviors (like stealing, fighting, refusing to do chores, etc) are not changed</td>
</tr>
<tr>
<td>q Most common medication prescribed in the treatment of ADHD</td>
<td>q Feeling “different” or “funny” while taking methylphenidate</td>
</tr>
<tr>
<td>q Largest amount of scientific research to support effectiveness</td>
<td>q Not all children respond well</td>
</tr>
<tr>
<td>q Different release forms available to best suit child’s needs and frequency of medicating</td>
<td>q Irritability when medication dose wears off</td>
</tr>
<tr>
<td>q With careful medical monitoring, considered quite safe</td>
<td>q Long-term effects not known</td>
</tr>
<tr>
<td>q No evidence of addiction to medication</td>
<td></td>
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<table>
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<tr>
<th>MEDICATION: dextroamphetamine</th>
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</thead>
<tbody>
<tr>
<td>Positive Aspects</td>
<td>Drawbacks</td>
</tr>
<tr>
<td>q Safe for use with children 3 years and older</td>
<td>q Not as much supporting research as methylphenidate</td>
</tr>
<tr>
<td>q Increases attention span</td>
<td>q Side effects include (but not limited to): hyperactivity, insomnia, tremor, depression, dizziness</td>
</tr>
<tr>
<td>q Increases motor activity control and mental alertness</td>
<td>q Possible dependence on drug</td>
</tr>
</tbody>
</table>
**MEDICATION:** pemoline  
**BRAND NAME:** Cylert

<table>
<thead>
<tr>
<th><strong>Positive Aspects</strong></th>
<th><strong>Drawbacks</strong></th>
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</thead>
<tbody>
<tr>
<td>Safe for use with children 6 years and older</td>
<td>Potential serious side-effects affecting the liver</td>
</tr>
<tr>
<td></td>
<td>Should not be initial attempt at ADHD management</td>
</tr>
<tr>
<td></td>
<td>Not as much supporting research as methylphenidate</td>
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</table>

**MEDICATION:** amphetamine  
**BRAND NAME:** Adderall

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<tr>
<td>Increases motor activity and mental alertness</td>
<td>Side effects include (but not limited to): hyperactivity, insomnia, tremor, depression, dizziness, weight loss</td>
</tr>
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<td>Increases attention span</td>
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(Information adapted from: Cowan, 2004; Deglin & Vallerand, 2003; Jones, et al., 1999; Micromedex & Multum, 2004; NIMH, 2003; O’Connor, 2001)

**NON-STIMULANTS:**
- More recently available for treatment of ADHD (have not been on the market for ADHD management as long as stimulants)
- Relieve ADHD symptoms
- Fewer side effects than stimulants

**MEDICATION:** atomoxetine  
**BRAND NAME:** Strattera

<table>
<thead>
<tr>
<th><strong>Positive Aspects</strong></th>
<th><strong>Drawbacks</strong></th>
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<tbody>
<tr>
<td>Evidence indicates over 70% of children with ADHD will show significant improvement in ADHD symptoms with atomoxetine</td>
<td>Very recently approved by the U.S. Food and Drug Administration (FDA)</td>
</tr>
<tr>
<td></td>
<td>Side effects include (but not limited to): nausea, vomiting, weight loss, insomnia, drowsiness, dizziness, mood swings</td>
</tr>
<tr>
<td></td>
<td>Limited research on medication and long-term effects</td>
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</table>

(Information adapted from: Eli Lilly & Company, 2004; Micromedex & Multum, 2004)
ANTIDEPRESSANTS:
- Trycyclic Antidepressants—(TCAs):
  - Non-stimulant ADHD treatment
  - Do not create sleep difficulties commonly seen with stimulants

<table>
<thead>
<tr>
<th>MEDICATION: desipramine</th>
<th>BRAND NAME: Norpramin</th>
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</thead>
<tbody>
<tr>
<td>Positive Aspects</td>
<td>Drawbacks</td>
</tr>
<tr>
<td>Improve ADHD behaviors</td>
<td>Not approved by the FDA for ADHD treatment</td>
</tr>
<tr>
<td>Effective alternative to stimulant</td>
<td>Little effect on academic performance</td>
</tr>
<tr>
<td></td>
<td>Side effects include (but not limited to): lethargy, blurred vision, heart rate changes, increased appetite/weight gain</td>
</tr>
<tr>
<td></td>
<td>Children may experience changes in heart functioning</td>
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<thead>
<tr>
<th>MEDICATION: nortriptyline</th>
<th>BRAND NAME: Pamelor</th>
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<tr>
<th>MEDICATION: imiprimine</th>
<th>BRAND NAME: Tofranil</th>
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<tr>
<td></td>
<td>Side effects include (but not limited to): lethargy, blurred vision, heart rate changes, increased appetite/weight gain</td>
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</tbody>
</table>
**MEDICATION: amiriptyline**  
**BRAND NAME: Elavil**

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<th>Drawbacks</th>
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<td></td>
<td>Side effects include (but not limited to): lethargy, blurred vision, heart rate changes, increased appetite/weight gain</td>
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</table>

- Selective serotonin reuptake inhibitors—(SSRIs):
  - Non-stimulant ADHD treatment
  - Do not treat core ADHD symptoms
  - Fewer side effects than TCAs
  - Helpful for irritability, anxiety, or depression associated with ADHD

**MEDICATION: bupropion**  
**BRAND NAME: Wellbutrin**

<table>
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<tr>
<td></td>
<td>Side effects include (but not limited to): agitation, headache, nausea, vomiting, change in appetite (weight loss or gain), tremor</td>
</tr>
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<td></td>
<td>Not as effective as TCAs</td>
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</table>

**MEDICATION: fluoxetine**  
**BRAND NAME: Prozac**

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<tr>
<th>Positive Aspects</th>
<th>Drawbacks</th>
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<tbody>
<tr>
<td>Successful in ADHD behavior management in some cases</td>
<td>Not approved by the FDA for ADHD treatment</td>
</tr>
<tr>
<td></td>
<td>Does not affect ADHD performance symptoms</td>
</tr>
<tr>
<td></td>
<td>Side effects include (but not limited to): anxiety, insomnia, headache, stuffy nose, cough, excessive sweating, joint pain</td>
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</tbody>
</table>
MAO INHIBITORS:
- Non-stimulant ADHD treatment
- Effective in treatment of depression associated with ADHD

**MEDICATION:** phenelzine
**BRAND NAME:** Nardil

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<tr>
<td>- Successful in ADHD behavior management in some cases</td>
<td>- Not approved by the FDA for ADHD treatment</td>
</tr>
<tr>
<td>- About as effective as dextroamphetamine in ADHD management</td>
<td>- High occurrence of side-effects and interactions with other medications and foods</td>
</tr>
<tr>
<td></td>
<td>- Side effects include (but not limited to): dizziness, insomnia, weakness, blurred vision, low blood pressure, rashes</td>
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</table>


Although the available ADHD medications are effective in the immediate reduction of ADHD symptoms, the long-term effects and success of these medications is not certain (Jones, et al., 1999). **OPEN COMMUNICATION AND CONSULTATION WITH THE APPROPRIATE ADHD PROFESSIONAL MUST BE CONTINUAL SO THAT THE MOST APPROPRIATE AND EFFECTIVE TREATMENT REGIMEN IS IMPLEMENTED.**
BEHAVIOR MODIFICATION

Appropriate behaviors are a major hurdle for individuals with attention deficit hyperactivity disorder (ADHD) that must be overcome in order to participate successfully in everyday activities (Dunn & Bennett, 2002, Jones, et al., 1999, Mulligan, 2001). Behavior modification strategies help parents increase the desired behaviors and decrease the occurrence of undesirable behaviors.

BEHAVIOR MODIFICATION PRINCIPLES:

- Behavior modification strategies must be implemented CONSISTENTLY
  - Behavior modification is a process and not an overnight remedy
  - Consistency is especially important if inconsistent rewards/punishments have been administered in the past
- Rewards and punishments must be consistent between parents, teachers, and all other caregivers who spend time with the child
  - If reward/punishment varies, the child does becomes confused about which behavior is appropriate
- Desired behaviors which are rewarded after EVERY OCCURANCE increase the frequency of those behaviors
  - Punishment of undesirable behaviors decreases the frequency of behaviors, HOWEVER, Punishment of behavior is less successful than rewarding desired behaviors
  - Concentrating on modifying 2 to 3 behaviors at a time has proven to be most successful
  - Attempting to modify more than 3 behaviors at a time becomes confusing and over-whelming to the child
- Behavior modification is also more successful when the behaviors and consequences are clearly defined and discussed.

(Information adapted from: Jones, et al., 1999; Walker, 2002)

Behavioral modification strategies have proven to be effective in managing ADHD and should be included in all ADHD treatment regimens (Jones, et al., 1999). Further information and training on the implementation of behavior modification strategies is available through ADHD professionals and support organizations. Before beginning behavior modification, professional consultation is recommended.
DIET AND ADHD

Dietary interventions as a method of treatment of attention deficit hyperactivity disorder (ADHD) are highly controversial (Jones, et al., 1999, Schnoll, et al., 2003). Dietary management of ADHD is currently a very popular approach despite the lack of scientific support and success rate of documentation (Cowan, 2004; Schnoll, et al.). Significant scientific research must be completed before dietary ADHD management is recognized as a treatment program, however, a wide variety of specialized ADHD diets are already available for those willing to try them as an ADHD management technique.

- The Feingold Diet
  - Most well-known diet for treatment of learning and attention problems of children with ADHD
  - Is based on additive-free diet (including food coloring, artificial flavoring, and preservatives)

- Elimination diets
  - Based on premise that unrecognized food allergies cause ADHD behaviors
  - Specific foods are eliminated from the diet (for example: dairy products, junk foods, foods with certain coloring, natural and processed sugars, meats, and fried foods) and changes in behavior are monitored.

- The processed sugar link
  - The basis of the majority of ADHD dietary interventions
  - Sugar could possibly affect behaviors, but these effects are minimal and only a small percentage of children with ADHD appear to be vulnerable to them

(Information adapted from: Cowan, 2004; Jones, et al., 1999; Lavalle, 1998; Lavalle, 1999; Schnoll, et al., 2003)

Whether or not diet is proven to be a successful tool for managing ADHD and ADHD behaviors, a well-balanced diet is important for every child (with or without ADHD), as diet impacts both physical and emotional health (Jones, et al., 1999).
CONTROVERSIAL ADHD TREATMENTS

Since the exact cause of ADHD is unknown, the best method of ADHD treatment is controversial. A wide variety of ADHD treatment options are available, however the majority of these treatment options are not supported by scientific research and findings.

NO MATTER WHICH ADHD TREATMENT IS USED, THE ADVICE AND CONSENT OF THE CONSULTING ADHD PROFESSIONAL ARE ESSENTIAL FOR PROPER IMPLEMENTATION AND MANAGEMENT. Some examples of controversial ADHD treatment options include:

- **Vitamin and mineral supplementation:**
  - There is currently limited evidence of supplements changing levels of hyperactivity, learning, and attention in children with ADHD
  - Just because supplements are natural DOES NOT mean that they are safe—if used in excess, supplements could cause further health problems

- **Anti-motion sickness medications:**
  - Use is based on belief that ADHD symptoms result from coordination and balance problems due to inner ear problems—however, the most recent ADHD knowledge does not support a link between ADHD and inner ear function
  - Advocates claim over 90% success rate for ADHD behavior management using anti-motion sickness medication
  - Treatment lacks supporting research

- **Candida Yeast:**
  - Theory is based on the bacteria, *candida albicans* (the bacteria commonly responsible for vaginal yeast infections as well as infections of the mouth, skin, and nails), weakening the child’s immune system so that child is susceptible to illnesses including ADHD
  - Treatment involves anti-fungal medications (rid body of bacteria), low-sugar diet, and vitamin and mineral supplementation
  - Very little scientific evidence to support theory and treatment

- **EEG Biofeedback/Neurofeedback**
  - Brain wave activity in children with ADHD differs from that of children without ADHD—biofeedback uses electrodes on the skull to change brain wave activity
  - Increases self-control, attention span, and learning and decreases temper and impulsivity
  - Not only used with ADHD (also used with Olympic athletes and business executives)
  - Frequent and extensive treatment sessions to re-train brain activity
o Expensive treatments
o Limited supporting research

- Omega-3 Fatty Acids
  o Low levels of essential omega-3 fatty acids in the blood are linked to behavior and attention problems consistent with ADHD
  o Essential to proper functioning of the brain
  o Not all children with ADHD have low omega-3 fatty acid levels
  o Relationship to ADHD not well researched and established

- Brain Gyms
  o Physical activities for stimulation (Laterality Dimension exercises), release (Focusing Dimension exercises), or relaxation (Centering Dimension exercises)
  o Laterality Dimension=Left and Right Brain connections
  o Focusing Dimension=Front and Back Brain connections
  o Centering Dimension=connects the Limbic System and Cerebral Cortex in the brain
  o Based on 3 premises:
    ▪ Learning is a natural, continuous process
    ▪ Learning blocks are the inability to perform new tasks because of stress or uncertainty
    ▪ Movements that allow the brain to work properly have stopped because of learning blocks
  o Supporting research is very limited

(Information adapted from: Alt Health, 2004; Barratt & Wilder, Ltd., 2004; Cowan, 2004; Jones, et al., 1999; Dennison & Dennison, 1989; Rossiter & La Vaque, 2002)
LIVING WITH ADHD

ADHD interrupts the normal day-to-day activities for the children with the disorder and their families. Appropriate functioning in relationships and social environments is also impaired with ADHD. Because no two children are alike and no two cases of ADHD are identical, it is important to tailor ADHD management approaches to each unique situation. In finding the best management strategy for normalizing daily activities, the needs and experiences of the child with ADHD and their support system (family, teachers, other caregivers) must be considered.

CHILD:
Successful ADHD management requires that the child’s individual needs are included in treatment planning with attention to how ADHD is affecting their daily lives.

- Children with ADHD are at greater risk for school failure, emotional difficulties, and social problems
- Often have low self-esteem
- Childhood depression is more common with ADHD
- May feel socially isolated from their peers
- Participation in play activities is decreased in children with ADHD
- The majority of children with ADHD often do not understand the disorder and are discouraged and confused by their actions and behaviors
- Need to develop self-discipline and control for behavior management
  - Skills learned best through discipline and ENCOURAGEMENT
- Typically do not have decision-making and problem solving skills needed to manage mistakes

(Information adapted from: Jones, et al., 1999; Leipold & Bundy, 2000; Stancliff, 1998; Walker, 2004)
FAMILY:
According to Jones, et al. (1999), “a family is like an engine—when one piece of the engine is having trouble, the engine won’t work properly” (p. 45). Families with children who have ADHD have an interruption in the normal, smooth workings of the engine.

- A child with ADHD affects the family dynamics and the family affects the child’s dynamics.
- Family stress levels increase
  - The focus of the family is on the child with ADHD and their actions and behaviors rather than focusing on enjoying family time
  - Seems as though the child with ADHD cannot stop their behaviors, listen to instructions, or performing tasks appropriately
- Daily routines are impaired
  - Consistent daily schedule (including homework time, down time, dinner time, and bed time) can help decrease stress levels for the whole family
- Lack of consistency between family roles
  - Siblings without ADHD may not be getting as much attention as the child with ADHD as the child with ADHD requires so much parental time and energy
- Unfamiliarity with ADHD
  - The whole family needs to be well informed about ADHD and ADHD management techniques
  - Understanding the disorder and working together to manage ADHD helps the family function as a whole and keeps all family members accountable

SCHOOL:
Today 3% to 7% of school-aged children are affected ADHD. This means that every elementary school classroom in the United States has one to two students with ADHD (*DSM-IV-TR*, 2000; Jones, et al., 1999; Tynan, 1994).

- Lack of consistency between home and school
  - Frequent, open communication between parents and teachers is essential to ADHD treatment success
- Education system not included in ADHD treatment
  - Teachers have the most contact with the child during the course of a regular weekday
  - Behavior and performance observations are vital to ADHD treatment planning and implementation
  - Educators need to feel as though their participation is valued and necessary for successful treatment of ADHD
- Available assistance in school is not utilized
  - ADHD is common so schools have ADHD management strategies in place
  - The degree of assistance depends on the specific needs of the child—an Individual Education Program (IEP) addresses a child’s present level of functioning, their educational performance, the strengths of the child, goals for performance, along with several other areas.
  - The Individuals with Disabilities Education Act (IDEA) ensures that all children with disabilities are fairly and appropriately included in the public education system
  - Most children with ADHD can successfully stay in a regular classroom with minimal adjustments in the setting, additional personnel support, and/or some special education interventions

(Information adapted from: Jones, et al., 1999; Florey, 1998; NIMH, 2003)
PARENT ROLES:

As discussed in the family section, ADHD places significant stress on the parents and families of children with ADHD as well as on the child. Early identification of ADHD and proper treatment of the disorder drastically reduce the family, educational, behavioral, and psychological problems experienced with ADHD (Jones, et al., 1999).

- **CONSISTENCY** is the most important technique parents can implement to help their child be successful in ADHD management.
  - Consistency between parents is difficult, but behavior management is significantly improved
    - Tasks and consequences should be assigned consistently by both parents
    - Important to have the parent that assigns the task be the parent to determine whether or not the task has been performed successfully (and address appropriate consequences)

- Parents are the ADHD team coordinators
  - **ADVOCATE FOR THE CHILD WITH ADHD**
    - Parents know their child’s strengths and weaknesses best
    - Promote and/or defend the child and their rights
    - Parents see the most rewarding results of understanding, managing, and treating ADHD

- Parents are responsible for educating themselves and others (including physicians, teachers, siblings, other family, etc) about ADHD

- Include the child in the ADHD treatment process
  - The treatment team should allow the child to express needs and observations

- Parents of children with ADHD have to take an active, “hands on” role in their child’s socialization
  - Invite other children to play in the home
  - Be an active participant in child’s life

- Parents must be **PATIENT** in all situations

- Time set aside for maintaining a healthy relationship
  - A child with ADHD places a significant amount of stress on the parents of the child
  - A healthy relationship between the parents will positively effect all family members

(Information adapted from: Jones, et al., 1999; NIMH, 2003; Segal, 2000; Segal & Frank, 1998; Stancliff, 1998)
SUGGESTED ACTIVITIES

Managing ADHD is a daily process. The following are some examples of activities and interventions that have been shown to help with ADHD management in day-to-day activities. **REMEMBER: THESE ARE SUGGESTIONS AND CAN BE MODIFIED TO BEST SUIT THE PARTICULAR NEEDS OF THE CHILD AND THE FAMILY.**

EVERYDAY STRATEGIES:

- **Communicating**
  - Communicate through asking questions
    - Forces child to engage in conversation
    - Help child stay on task
  - Touch child gently while speaking to him/her
  - Use child’s name when talking
    - Help child cue into conversation
  - Make and hold eye contact throughout the conversation

- **Scheduling**
  - Set routines for family life
    - Construct the schedule around the family needs
      - When does the child have highest concentration levels for homework completion?
      - Does the child need a break between the school day and homework time?
    - **EXAMPLE:**
      - Short break after school (before homework)
      - All homework complete before dinner (alleviate stress later in the evening by having homework already completed)
      - Chores completed after dinner and before free time (watch television, play a game, etc.)
      - Consistent bed time
    - Anticipate potential problems and/or problem situations and create a plan of action
      - If the child does not finish homework before dinner, there will be free time that night

- **Household Rules**
  - Rules should apply to all family members
  - Rules based on household expectations:
    - Written using positive statements
    - Specific
      - Give exact behaviors with clear, specific consequences
    - Non-negotiable
- Consistent
- Fewer rules ensures better compliance
  - If there are too many rules, the child has a difficult time remembering all of the rules and consequences

☐ Structure the child’s environment
  o Organization:
    - Establish a routine (have child pack their backpack the night before so that homework or books are not forgotten in the school morning rush; color code laundry baskets for better organization; clean up room each evening before free time; etc)
  o Provide visual cues to help the child stay on task:
    - Draw cartoons, pictures, or create a picture board of child completing morning routine tasks. Place tasks in correct order and place in a central location so that if the child gets off-task they have a visual reminder to help them re-direct on their own
  o Task break down:
    - Be specific when asking the child to complete a task and give them a specific amount of time to complete it (set a timer)
  o Repeat instructions and make lists to help child remember:
    - Have child repeat instructions after giving them to ensure that the child understands what they are supposed to do
      - Helps prevent misunderstood directions leading to incorrect task performance
    - Write out a list of instructions and have the child read them aloud
      - Written instructions helps child stay on task

(Information adapted from: Cronin, 2004; Jones, et al., 1999; Segal, 2000; Segal & Frank, 1998)
SENSORY INTEGRATION GAMES:

Children with ADHD have more difficulty handling the sensory information they are constantly bombarded with from the outside world. Sensory integration activities help to decrease the defensive reactions to these everyday sensory experiences.

THE FOLLOWING GAMES ARE ONLY EXAMPLES OF SENSORY INTEGRATION ACTIVITIES. FOR MORE INFORMATION ON THESE EXERCISES AND MORE SENSORY INTEGRATION GAMES AND INFORMATION, CONSULT AN OCCUPATIONAL THERAPIST OR ADHD PROFESSIONAL.
SENSORY INTEGRATION EXAMPLES:

- Wall Rolling and Rubbing
  - Have child stand with back against the wall
  - Explain that the wall is going to massage the back while the child rubs against it (keeping their back against the wall at all times)
  - Rub up and down, back and forth against the wall

- What it does:
  - Provides tactile (touch) stimulation

- Variations:
  - Make “wall angels” by moving arms up and down along wall
  - Play follow the leader and encourage different movements along the wall
- **Human Machine**
  - One child begins the “machine” by making a machine-like noise and performing a simple action.
  - The next child does the same noise and action of the first child, then adds own noise and action.
  - Process continues as long as desired.

- **What it does:**
  - Provides tactile (touch) stimulation.
  - Works on memory and movement planning.

- **Variations:**
  - Recreate the actions of one specific machine (typewriter, washing machine, etc).
Simon Says
   - This simple, well-known game can be used to provide a significant amount of sensory input
   - Include hopping, skipping, somersaults, and other creative elements to the regular “touch your nose”

What it does:
   - Improves child’s body awareness (tells their brain where their body is and what it is doing)

Variations:
   - Be creative!
- Calisthenics
  - Basic exercises (like jumping jacks, sit ups, push ups, toe touches, etc)

- What it does:
  - Provides body awareness information
  - Provides tactile (touch) input
  - Improves movement planning
  - Encourages a variety of body and joint movements

- Variations:
  - Try some stretching and warm-up activities before beginning
  - Start at a slow tempo and work up to a faster pace
  - Be creative!
- The Tunnel
  - Child crawls through a tube of material (purchase 2-5 yards of uncut knit material)

  - What it does:
    - Provides tactile (touch) input
    - Provides body awareness information

  - Variations:
    - Have child crawl through head first, feet first, stretch out in the tube, curl up in the tube, etc.

(Information adapted from: Mulligan, 1996; Vander Roest & Clements, 1983)
IN THE CLASSROOM:

The following suggestions have been found to be successful in the classroom for children with ADHD. In collaboration with the classroom teacher, these suggestions can be altered to best fit the child’s individual needs.

CLASSROOM SET-UP:

- Move child’s desk to where there are fewer distractions—away from hallway and/or window
- Place child’s desk near the teacher or another well-focused student to help keep them focused and on track
- Post classroom rules where they are easy to see
  - Rules should be clear with defined consequences and rewards
- Provide a quiet place in the room as a special study section
- Play classical music while students are working

CLASS SCHEDULE:

- Provide child with a schedule/classroom routine
- Tape a task checklist to the child’s desk
- Schedule classes so that the classes requiring highest attention levels are earlier in the morning.
- Be clear about times when student movement is allowed and when it is not allowed

LESSON PLANNING:

- Increase the pace of lessons and include a variety of activities during the lesson to keep the child’s interest
  - Use multi-sensory presentations, but do not make them too distracting
- Teach in bite-sized lessons
  - Break longer and more complicated lessons down into smaller, more manageable lessons
- Actively involve students with lessons
- Encourage mental images of concepts/information
- Provide an outline to student with ADHD prior to lesson
  - Helps child stay on track
- Allow frequent responses during
  - EXAMPLES: choral responding, calling on students, etc.
- Use peer tutors
  - If possible, allow the child with ADHD to tutor a younger child and assume a leadership role
OTHER CLASSROOM TIPS:

- Stress accuracy rather than quantity of work
- Use clear, simple directions
- Children with ADHD are more successful when there is a small adult to student ratio
  - Involve parent volunteers, para-professionals, or other support staff
- Worksheets should:
  - Provide plenty of space
  - Use Black ink on white (or buff colored paper)
  - Have large print
- Organize the child’s environment (use dividers and folders, organize writing and numbers, use finger to follow when reading)
  - Show that organization is important:
    - Allow time (5 min) for organization
    - Offer a daily award for cleanest desk
- Color code notebooks and folders per subject
- Provide an extra set of textbooks for the child’s home to reduce transported items between home and school
- Reward on-task behaviors

(Information adapted from: Cowan, 2004; Jones, et al., 1999; Mulligan, 2001)
BRAIN GYM ACTIVITIES:

Brain gyms are a series of movements that help different parts of the brain connect and communicate for improved abilities and behaviors. **THE USE OF THESE ACTIVITIES IN THE TREATMENT OF ADHD IS CONTROVERSIAL.** However, the small amount of research done on Brain Gyms for behavior management has been positive. Following are some examples of brain gym activities.

**THESE ACTIVITIES ARE ONLY EXAMPLES OF BRAIN GYM EXERCISES. FOR MORE INFORMATION ON THESE EXERCISES AND MORE BRAIN GYM ACTIVITIES, CONSULT AN ADHD PROFESSIONAL.**
Midline Movements:

- Stimulates two sides of the body working together
- “Sidedness”
  - Allows child to recognize both the right and left sides of their body and to make movements that cross their body (across the vertical midline of their bodies)

EXAMPLE ACTIVITIES:

- Cross Crawl:
  - March in place bringing the knees up high and touching knee with opposite arm
  - What it does:
    - Improves coordination
    - Enhances hearing and vision
    - Improves spelling, writing, listening, and reading comprehension
  - Variations:
    - Reach and step in varied directions
    - Reach behind and touch opposite foot
    - Close eyes during marching
    - March to different rhythms and music
Lazy 8s:
- Draw large 8 lying on its side (infinity symbol) with the pointer finger in the air (move arm up, over, and around to complete the 8)
- Make sure the middle of the eight lines up with the middle of the middle of the body

What it does:
- Activates and integrates both right and left sides of vision
- Allows both sides of the brain to work together

Variations:
- Do activity with eyes closed
- Draw “lazy 8” on a chalkboard for visual cues
- Use both arms together drawing two 8s at a time
Belly Breathing:
  - Place hand on stomach and take a deep breath in through their nose (pushing their stomach and hand out) then breathing out through the nose (stomach and hand come back in)

  - What it does:
    - Increases energy level
    - Improves attention span
    - Relaxes the brain
    - Improve speech and oral reading
  - Variations:
    - Lie flat with a book on the stomach (book raises and lowers with breathing)
The Energizer

- Child sits at a desk (or table) with head down and hands on the table with fingers pointed slightly inward
- Child inhales slowly raising head toward the ceiling

- What it does:
  - Increases listening comprehension
  - Improves handwriting skills and control
  - Relaxes the brain

- Variations:
  - Can be done with child lying face down on a mat—hands placed under shoulders—when child breathes in, lifts head and shoulders off the mat with hips and legs remaining relaxed on the mat (arching the back)
Lengthening Activities:
- Helps connect what the child already knows (in the back of the brain) to express and process the information (in the front of the brain)

EXAMPLE EXERCISES:

- Arm Activation
  - Child raises one arm straight above head and opposite arm supports straight arm while child breathes deeply
  - What it does:
    - Increases attention span for written work
    - Improves ability to focus
    - More able to express ideas
    - Improves breathing and relaxation
    - Increases energy in hands and fingers
  - Variations:
    - Can be done sitting, standing, or lying down
    - While breathing, reach higher into the air
- The Calf Pump
  - Stand in front of a chair or wall placing one leg behind the other leaning forward (bend front leg) while supporting weight on chair or wall

- What it does:
  - Improves reading and listening understanding
  - Improves social behaviors
  - Prolongs attention span
  - Child is more able to communicate and respond
  - Increases ability to complete tasks

- Variations:
  - Shift weight between back and front legs
Energy Exercises and Deepening Attitudes:

EXAMPLE EXERCISES:

☐ The Energy Yawn
  o Yawning naturally increases blood circulation to the brain and stimulates the whole body
  o Child pretends to yawn with eyes closed tightly—fingers massage cheeks while makes yawning sound

  o What it does:
    ▪ Increases blood circulation to the brain (improved concentration)
    ▪ Relaxes facial muscles
    ▪ Improves reading out loud
    ▪ Improves visual attention and perception
  o Variations:
    ▪ Child finds jaw joints by opening and closing mouth—massages joint gently
    ▪ Strengthen the tongue by pushing it toward the roof of the mouth while doing the Energy Yawn
The Thinking Cap
- Child gently pinches upper curves of the ears and carefully “un-rolls” the curves

- What it does:
  - Increases listening
  - Improves focus and concentration
  - Relaxes jaw, tongue, and facial muscles

- Variations:
  - Do the Thinking Cap in conjunction with the Energy Yawn
Positive Points

- Child lightly touches the forehead with the fingertips of both hands—fingertips are placed in the middle of the forehead

- What it does:
  - Helps increase memory recall
  - Improves organizational skills
  - Improves study skills
  - Improves test taking

- Variations:
  - May be done in pairs or teams with one child helping another (by placing their hands on their neighbor’s forehead)
  - Performed with visualization
  - Gentle massage with Positive Points to relieve visual stress

(Information adapted from: Dennison & Dennison, 1989)
FREQUENTLY ASKED QUESTIONS

When a child is diagnosed with ADHD, many questions and concerns arise. Following are some common questions that may be brought up. **REMEMBER: THE DIAGNOSING ADHD PROFESSIONAL AND THE ADHD TEAM ARE ALSO AVAILABLE TO ANSWER ANY QUESTIONS AND/OR ADDRESS ANY CONCERNS.**

- **What is ADHD?**
  - Attention deficit hyperactivity disorder is a genetically determined condition that affects those parts of the brain that control attention, impulses and concentration. It is thought to affect 3 to 7% of school age children.
  - The best description for ADHD is that a child who suffers from this condition shows disruptive behaviors, which cannot be explained by any other psychiatric condition and are not in keeping with those of the same-aged people with similar intelligence and development.
  - These behaviors are usually first noticed in early childhood, and they are more extreme than simple “misbehaving”.
  - Children with ADHD have difficulty focusing their attention to complete a specific task.
  - Additionally they can be hyperactive and impulsive and can suffer from mood swings and “social clumsiness”.

- **How common is ADHD?**
  - Because of the different ways of diagnosing this condition in America and Europe the reported rates are different in both but the general consensus is that about 3% of the population is affected by ADHD.
  - It is also three times more likely to affect boys.

- **When does ADHD develop?**
  - ADHD develops in childhood and is most commonly noticed at the age of 5.
  - Research suggests that 80% of children diagnosed with ADHD continue to experience symptoms during adolescence and 67% continue to have symptoms into adulthood.

- **Will My Child Outgrow ADHD?**
  - ADHD continues into adulthood in most cases. However, by developing their strengths, structuring their environments, and using medication when needed, adults with ADHD can lead very productive lives. In some careers, having a high-energy behavior pattern can be an asset.
Does every person with ADHD have the same symptoms?

- The symptoms of ADHD (impulsivity, hyperactivity and inattention) are not seen to the same degree in all people diagnosed with this condition. As a result, clinicians recognize three types of people with ADHD:
  - The mostly (predominantly) hyperactive-impulsive type
  - The mostly (predominantly) inattentive type
  - The combined type (which make up the majority of ADHD cases)
  - There is also a fourth type, which does not fit into any of the three categories and which healthcare professionals classify as ADHD not otherwise specified.

What are the signs of ADHD?

- Children with ADHD have a hard time paying attention and following directions. Their behavior causes regular problems.
- The symptoms of ADHD are different for each subtype:
  - Inattentive subtype
    - Easily distracted.
    - Unable to pay attention to details, makes careless mistakes.
    - Difficulty following directions.
    - Loses or forgets things easily.
    - Their ability to sustain attention and play activities
    - Difficulties in starting and finishing school work and other activities
    - Often may appear to be ignoring instructions or just find it impossible to follow them
    - Forgetful for their age and appear very disorganized
  - Hyperactive-impulsive subtype
    - Fidgeting and Squirming
    - Blurtiong out answers, interrupting.
    - Difficulty waiting.
    - Difficulty sitting still and being quiet when asked.
  - Combined subtype
    - Children with this subtype have symptoms from both the inattentive subtype and the hyperactive-impulsive subtype. See two lists above.

What causes ADHD?

- ADHD has multiple causes. However the evidence so far shows that it is not caused by poor parenting, rather, it is caused by a complicated combination of factors.
- These factors include changes in those parts of the brain, which control impulses and concentration (neurobiological factors) and genetic, inherited and environmental factors.
Is ADHD genetic?
  o ADHD has a significant genetic component: most differences in severity of symptoms are due to genetic factors. For example, if a family has one ADHD child, there is a 30-40% chance that another brother/sister will also have the condition and a 45% chance (or greater) that at least one parent has the condition. If the child with ADHD has an identical twin, the likelihood that the twin will also have the disorder is about 90%.
  o Other research has suggested that in a small percentage of cases, ADHD can be due to injury (during development) to specific regions of the brain. For example, use of alcohol or tobacco during pregnancy, premature delivery with associated minor brain bleeding or accidental head injury after birth, could all cause ADHD-like symptoms.
  o ADHD is not associated with purely social factors such as poor parenting (child management), family stress, divorce, excessive TV viewing or video game playing, or diet, although some of these factors can exacerbate a pre-existing condition.

How is ADHD treated?
  o Each child is different, so treatment varies. Treatment may include:
    ▪ Behavior Training
      o Behavior training helps the child realize what he should do in certain situations and problems.
      o Behavior training also helps the child know what he can do to avoid certain situations and problems.
      o This training can be very helpful when combined with other treatment.
    ▪ Treating Other Problems
      o The child may have other problems that contribute to the problems he has with ADHD.
      o Treating other problems (such as a learning disability) can improve the child's ADHD symptoms.
    ▪ Medication
      o Not all children with ADHD need medication.
      o Medications such as Ritalin and Dexedrine may be tried for a period of time.
      o The child should be watched closely to see if the medication works. Tell the doctor about any changes in symptoms.
      o Sometimes, different kinds or different amounts of medication are tried to find the combination that works best for your child.
      o Medications to treat behavior and attention may be more effective if combined with behavior training.
What treatments are typically recommended for ADHD?

- There are typically four steps in the management of ADHD:
  - Proper diagnostic evaluation by an experienced psychiatrist or pediatrician
  - Information provided for parents and teachers
  - Discussions between healthcare professional and parents and teachers on behavioral therapy and educational support (such as special educational services)

What to do if ADHD is suspected

- There is no specific test for ADHD but it is important that an appropriate professional makes a diagnostic evaluation.
- If ADHD is suspected, alert the parents or teacher so that the child can be referred early and so that the condition can be identified.
- This will enable treatment (whether behavioral, psychological or medication) to be started, to help the child to achieve their full potential.

How is ADHD diagnosed?

- A doctor diagnoses ADHD with input from families, teachers, and others involved with the child.
- A child who has symptoms of ADHD before the age of 7 may be considered for a diagnosis of ADHD.
- Symptoms must be seen for at least 6 months.
- The child's behavior must also have a bad effect on at least two areas of the child's life (such as home, school, or friendships).

Who can diagnose ADHD?

- ADHD is diagnosed by a healthcare professional, usually a child psychiatrist or pediatrician. However a team of people may be involved in the steps to diagnosis and decisions regarding therapy. These people can include:
  - Child psychiatrist
  - Neuropsychologist
  - Child psychologist
  - Pediatrician
  - Pediatric neurologist
  - Psychiatric social worker
  - Educational psychologist
  - Specialists in occupational therapy, speech and language, auditory processing, etc
  - Teacher
  - General Practitioner

Do children with AD/HD have other disorders?

- Children with AD/HD often have other problems.
- Children also may have a mood disorder, such as depression.
- Many children with AD/HD have learning disabilities.
- Children with AD/HD may also have oppositional defiant disorder.
What can parents and teachers do to help?

- The child may be able to pay better attention sitting in the front of the classroom.
- Make instructions clear. Write them down instead of just saying them.
- Focus on success. When the child does something good or decides not to do something bad, they should be praised.
- Teach the child how to solve problems. Practice what they can do and say when they have a problem.
- Help the child be organized. Teach them how to use checklists. Give them reminders to keep on the right track.
- Help the child slow down. Encourage them to think before they answer a question.
- Give the child feedback. Help him check his work before he has to turn it in.
- Make it clear to the child what is okay to do and say and what is not okay to do and say. Follow through with fair consequences or praise.
- Build the child's self-esteem. Avoid correcting him aloud in front of others. Instead, use a hand signal to warn him he is not behaving well.

(Information adapted from: American Academy of Pediatrics, 2001; D’Alessandro & Huth, 2004; Doyle, Wallen, & Whitmont, 1995; O’Connor, n.d.)
PARENT ADHD RESOURCES

For information on Attention Deficit Hyperactivity Disorder (ADHD):


For information on Behavior Management and Parenting an ADHD Child:


For information on Counseling:


For information on Dealing with Self-Esteem and ADHD:


For information on Relaxation Strategies for ADHD Children:


For further Information and Support Regarding ADHD:

Children and Adults with Attention Deficit Disorder (CHADD): www.chadd.org
GLOSSARY

ANTI-DEPRESSANT MEDICATION – prescription medication used to control symptoms of depression

ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) – a disorder characterized by inattention or attention deficit, over-activity, and impulsiveness

BEHAVIOR MANAGEMENT – parenting technique used with ADHD to help control undesirable attitudes and behaviors

BIOLOGICAL FACTORS – factors determined by genetic composition

BRAIN GYM – series of movements that help different parts of the brain connect and communicate for improved abilities and behaviors

CONTROVERSIAL ADHD TREATMENTS – ADHD management techniques that are not sufficiently supported by scientific research

CORTEX – the outer layer of the brain

DAILY ACTIVITIES – the tasks considered necessary for meeting the demands of daily life

DEPRESSION – a mood disorder characterized by extreme sadness, feelings of hopelessness, worthlessness, and dejection that are pervasive and interfere with day-to-day activities; may also be used to describe feelings of sadness and despair of a more transient nature (Florey, 1998)

ENVIRONMENTAL FACTORS – the impact of the surrounding conditions affect task performance

EXPERIENTIAL FACTORS – the impact past experiences and beliefs affect task performance

FRONTAL LOBE – the front section of the brain (area directly behind the forehead)

GENETIC FACTORS – how genes inherited from parents affect task performance

HABITUATION – organization of task into patterns and routines

HYPERACTIVITY – excessive activity or excitement

INATTENTION – lack of concentration on task performance
INDIVIDUALS WITH DISABILITIES EDUCATION ACT (IDEA) – legislation that ensures children with disabilities receive appropriate assistance for participation in public education (Florey, 1998)

INDIVIDUAL EDUCATION PROGRAM (IEP) – a plan developed by the school placement team to support the learning of a child with a disability that has an effect on school performance (Florey, 1998)

IMPULSIVITY – performs tasks before clearly thinking through results and consequences of actions

LEARNING DISABILITY – a chronic condition of neurological origin that interferes with the development, integration and use of verbal and non-verbal abilities (McGruder, 1998)

LIMBIC SYSTEM – area of the brain responsible for emotion and level of arousal

MAO INHIBITOR MEDICATION – prescription medication commonly used in treatment of depression

MIND-BRAIN-BODY PERFORMANCE – the physical and mental ability to perform including any experience with the activity, which influences performance

MIDLINE – the imaginary vertical bisection of the body (runs from head to toe through the belly button)

MODEL OF HUMAN OCCUPATION (MOHO) – the occupational therapy treatment model addressing: volition, habituation, mind-brain-body performance, and environmental factors that may influence task performance (McGruder, 1998)

NEUROLOGICAL DISORDER – a disorder resulting from the brain not functioning properly

NEUROLOGIST – physician specializing in the way the brain works

NON-STIMULANTS MEDICATIONS – prescription medication, which does not stimulate brain activity

OCCUPATIONAL THERAPY – the art and science of helping people do the day-to-day activities that are important to them despite impairment, disability, or handicap (McGruder, 1998)

OMEGA 3-FATTY ACIDS – specific fats found most commonly in fatty fish, i.e. salmon

PEDIATRICIAN – physician specializing in the treatment of infants and children

PSYCHIATRIST – physician specializing in behavioral and mental health
**Psychologist** – specialist in behavioral and mental health, however not a physician

**Reticular Activating System** – the area of the brain known as the attention and motivation center

**Sensory Integration** – the organization of sensation to form perceptions, behaviors, and to learn; a neurological process and a theory of the relationship between the neural organization of sensory processing (Yerxa, 1998)

**Stimulants** – a prescription medication, which temporary increase of activity or efficiency of the brain

**Volition** – motivation and choice behind behavior (Yerxa, 1998)

(Definitions based on works of: Barratt & Wilder, Ltd., 2004; Yerxa, 1998; Duke University, 2000; NIH, 1999; Stanford University, 1998; Zull, 2003)
PHOTOGRAPH RELEASE FORM

I, Christy Siplon, authorize the use of photographs of my daughter, Calie Siplon, for the demonstration of Sensory Integration games and Brain Gym activities in the handbook: Living with ADHD: The Parent’s Guide to Childhood ADHD Management.

_____________________________   _____________________
Christy Siplon                     Date
REFERENCES


CHAPTER V

SUMMARY

Attention Deficit Hyperactivity Disorder is a common, often misunderstood disorder. There are a wide variety of ADHD treatment options currently available, however the long-term success and effects of many of these treatment options are not well researched or understood.

One of the most important factors in successfully managing ADHD is to stay informed regarding the latest information and treatment options for ADHD management. This project is meant to provide information and suggestions to parents for both understanding and managing ADHD on a daily basis. The information presented in this handbook is general, therefore, further professional consultation and support is highly recommended. Research is needed to determine if the use of the handbook in conjunction with treatment by an occupational therapist or other professional has a positive impact on intervention outcomes for the child who has been diagnosed with ADHD.

The cause of ADHD is not known. This means that research and new findings on ADHD are continually emerging. This reinforces the need for parents and other caregivers to stay current with information and treatment options. Also indicated is the need for further research.
REFERENCES


