Attention Deficits, Learning Disabilities, and Ritalin™

A PRACTICAL GUIDE

Second Edition

Robert B. Johnston
Attention Deficits, Learning Disabilities, and Ritalin™
A PRACTICAL GUIDE
Second Edition

Robert B. Johnston, M.D.
Johns Hopkins School of Medicine
Kennedy Institute for Handicapped Children

Springer-Science+Business Media, B.V.
To Bonnie — fresh starts and
new ventures together.
# CONTENTS

*Preface* vii

*Acknowledgments* x

Chapter 1 Introduction 1

Chapter 2 Definition of Learning and Attention Disabilities 7

Chapter 3 Identification of Learning and Attention Disabilities 17

Chapter 4 The Physician: Roles and Characteristics 33

Chapter 5 The Team 44

Chapter 6 Medical Considerations and Assessment 54

Chapter 7 Neurological Assessment 74

Chapter 8 Medication 88

Chapter 9 Controversial Therapies 113

Chapter 10 Review and Comment 119

References 131

Glossary of Common Terms 141

*Appendix A:* American Association of University Affiliated Programs for Persons with Developmental Disabilities 147

*Appendix B:* Elements of Physical Examination 156

*Appendix C:* Medical Case Report 157

*Appendix D:* Nontraditional Neurological Assessment (NTA) 162

*Appendix E:* Parent Support Groups and Associations for Children with ADHD and Learning Disabilities 167

*Index* 175
Preface

The decision to revise a perfectly good book, *Learning Disabilities, Medicine, and Myth*, did not come easily especially for a pediatrician involved in a busy clinical practice. The opportunity to chronicle "exciting advances" in the field did not merit it because the advances just were not exciting enough to justify all the agonies involved in the revision process. No, it was not the advances but more the recent regressive changes affecting child care that prompted me to rewrite. And rewrite I did — so much so that the resultant changes in emphasis and content of the second edition warranted a new book title! Now, what happened to deserve this much effort?

Ritalin\(^1\) hit the big time — talk shows and tabloids. On Ritalin's coattails fell physicians, teachers, hyperactivity, attention deficits, learning disabilities, school boards, and even a few psychologists — all getting raked over the coals. Hype and hearsay, half-truths and horror stories confused, frightened, and angered a lot of people. Many lost confidence in their physicians' medical judgment, doubted their teachers' ability to teach, and questioned all professional workers' capacity to care. After all, what kind of thugs would "turn little school-children into drug addicts"?

Based on this type of information, many parents rejected medical help totally. They literally threw the baby out with the bathwater. This new edition gets heavily into bathwater. Lots of it. It looks at the real bathwater — the problems and pitfalls in diagnosis and treatment, as well as the expectations, limitations, and precautions necessary in the rational use of Ritalin. It looks at the false bathwater, that group of misguided opinions and impressions generated by friends, neighbors, armchair philosophers, talk show participants, reporters, and others. And it looks anew at the baby, uncovering more details on the nature of learning and attentional difficulties.

This approach conveys to parents and other child advocates an upgraded information base that is free of impurities, so they can participate more effectively in the care of their troubled youngsters. That

\(^1\)Ritalin\(^TM\) is a brand name, held by CIBA Corporation, for methylphenidate.
does not mean they will necessarily agree with all professionals' recommendations or ongoing interventions. But, more importantly, they will know enough to start hollering appropriately when and if it is necessary.

All the promises of the preface to the First Edition, *Learning Disabilities, Medicine, and Myth*, still hold — and more. Chapters on the definition and identification of learning and attention disabilities, medical considerations, and medication (the R-word) have been extensively revised. A new chapter has been added focusing on the gaps between public opinion and the medical perspective. And, of course, “exciting changes” had to be chronicled. They changed ADD-H to ADHD, requiring at least 63 measly changes throughout the entire book. In contrast to the first edition, children now can have Attention Deficit Hyperactivity Disorder (ADHD) without hyperactivity, brain damage, or even abnormal brain function. The nature-nurture controversy is revisited, for those who worry that nothing can be done with problems of a physical nature. On top of all that, 58 new references have been added to the already adequate bibliography. Now who said a book with cartoons could not be scholarly?
Preface to
Learning Disabilities, Medicine, and Myth

It is a fair question: Why another book on learning disabilities? Certainly, there are other books out there that address the nature of learning disabilities and attention disorders, encourage and assist the reader in early recognition, describe advances in interventions, and exhort those involved to work together (Barkley, 1981; Johnston and Magrab, 1977; Rutter, 1983). There are also medical texts describing medical roles, functions, diagnostic techniques, and therapeutic interventions, written expressly for physicians (Dworkin, 1985; Levine, 1981; Shaywitz, Grossman, and Shaywitz, 1984).

I sense that the time is ripe for something different. There is a need to address the factors that are interfering with professionals from the worlds of medicine, education, and the social sciences working effectively together. There is misunderstanding and conflict regarding the legitimate role of the physician in dealing with learning disabilities. There is confusion regarding how the professional interplay between the physician and others influences the effectiveness of everyone’s efforts. It says something about this situation when the acceptance of physicians working in the learning disabilities field by other professionals ranges from a high of “indispensable” in some quarters to a low of total “rejection,” complete with sticks and stones, in others.

Much of the confusion is perpetuated by what I consider to be myths of day-to-day practice. A myth, according to Webster’s, is a belief that is given uncritical acceptance by members of a group in support of existing practices. I have gathered up and exposed several myths regarding the nature of learning and attention disabilities, assessment and intervention practices, and the interaction among professionals working in the field.

Where do these myths begin? Who perpetuates them? They seem to behave like ethnic jokes, however, people don’t forget them the next day. Anyone may be an originator or perpetuator of these myths — the child, classmates, parents, family members, school personnel, and other professionals (yes, even physicians). In addition,
untold numbers of myths get unloaded by uninvited neighborhood “experts” who invariably come out of the woodwork to offer their well-intentioned, but often off-the-wall, opinions based on the latest tabloid reading or personal reminiscences — Great Aunt Winnie’s delivery boy who had the “exact same thing” decades ago. And so it goes.

My basic approach is to start with practical aspects of identifying learning and attention disabilities, then move on to review what physicians do well and not so well, how and with whom they try to do it, and why, pray tell, they behave like physicians. Thrown in there along the way is a lot of information about the child with learning and attention disabilities.

I use the myths to help me focus on four interrelated topics: (1) the demystification of what physicians do, (2) the dynamics of an effective team approach, (3) the role of neurological factors, and (4) the need to “demedicalize” learning and attention disabilities.

I feel that it is crucial to demystify what it is physicians do. For too long now the physicians’ deliberations and activities have been clouded in mystery, with the result that some individuals refer a child to a physician expecting that child will undergo some mystical assessment or treatment exercise in the confines of the medical office and come out of it clarified, neutralized, properly labeled, and hopefully cured. Demystification provides help in realistically appraising the necessity, appropriateness, and effectiveness of the physician’s intervention. Those working with the physician can then interact more knowledgeably and effectively.

I have emphasized heavily the importance of the team, with each member meeting the others at eye level. I am convinced that people must work together interdependently, particularly when dealing with the complex multifaceted problems of children with learning disabilities. I have relied on the teacher-physician interaction for illustration and example, but in most cases parents and other professionals working in this field could be substituted, since they share similar concerns, needs, and experiences.

Finally, I have noted the consequences of the mismatch between the physician's basic medical approach and the reality of the types of problems presented by children with learning and attention disabilities. From years of training and experience, the physician traditionally seeks to define a biomedical cause in a suspected disease process. Once the cause of the manifestations (symptoms) has been identified, appropriate therapies usually can be prescribed that will remedy the malfunction. In most diseases there is some identifiable cause — metabolic, traumatic, genetic, or infectious. Treatment choices, such as antibiotics or chemical replacements, are based on the cause.
Most learning and attention problems do not fit this model. It is fairly safe to say that this disease-oriented approach will not work well with a non-disease.

The child with learning inefficiencies, and the physician who intervenes, search for acceptance and understanding. In order to accomplish this, however, both the child and the physician must be better understood by the parents, educators, psychologists, and other professionals involved. Certainly the child and physician share a common trait, in that neither has all the answers.

This book addresses the questions that lead to (1) a clearer understanding of manifestations of learning and attention disabilities, (2) a better appreciation of possible neurological contributions, (3) a more realistic appraisal of physicians' roles, (4) some awareness of the promise and limitation of medical diagnostic efforts, (5) better understanding of the role of medication and an enhanced ability to assess its effectiveness, (6) an increased awareness of the interdependence among those working in this field, and (7) more empathy for parents and other colleagues who are in the same boat.
Numerous people contributed to the ideas expressed in this book. My thanks to all of them. I would like to acknowledge a few.

The talented though transient staff and trainees at the Kennedy Institute over the past fifteen years had something to say in every chapter. My longtime and loyal administrative assistant, Mary Frances Garland, got me through the initial stages of this book and lots more. Yvonne Paige diligently and patiently processed the words — draft after draft after draft of the first edition.

Barbara Grayson Love, Ph.D., an educational psychologist, contributed significantly through her clear thinking, perceptive criticism, knowledgeable suggestions, and occasional M&Ms. Michael Bender, Ed.D., a special educator and longtime Kennedy Institute colleague, serving as advising editor, provided encouragement (prodding) and actually spared the reader innumerable puns and a few of my more outrageous attempts at humor. Jean A. Langlois, M.S., a talented artist and speech-language pathologist, collaborated on the illustrations. A few of the illustration settings were modeled after those of Guy Lafrançois, who is an absolute master at effectively using humor to enhance his teaching and writings in the field of psychology and education.

Although no one ever reads past the second paragraph of the Acknowledgments section, I must add that Nancy Wisman and Bonnie Johnston contributed significantly to the preparation of this second edition.
CHAPTER 1

Introduction

THE TAKE-HOME QUIZ

Not long ago, in a place far away, a mythical group met in a large but comfortable retreat house to ponder and discuss its members' experiences in the field of learning and attention disabilities. Represented were several parents, teachers, psychologists, counselors, nurses, speech and language specialists, social workers, occupational therapists, physical therapists, and a few others—probably administrators or controversial therapists. It was unclear why no physicians were present. Most people figured they were on call or watching the Super Bowl. Others did not seem to care.

Despite an absent cog, the wheels ran smoothly and discussions were frank, open, and informative. By the end of the meeting only some loose ends had to be tied up. There was a need to hear from the physician on a few questions that remained unanswered. The chairperson gleaned from the minutes a number of criticisms, conflicts, concerns, and points of confusion that involved the physician. These were organized into a take-home essay quiz to be distributed to selected physicians. The dissemination task force (two parents) never got off the ground because it was defunded. So, the quiz languished in a "to be filed" box until one day it somehow appeared mysteriously on my desk.

Frankly, what intrigued me was the notion of a take-home quiz. In all my medical training I had never heard of such a thing. No
need for cramming, memorizing, or test anxiety. One could actually look up *anything* and use it without guilt. I enthusiastically took the take-home quiz home and dove in.

I tapped every resource I could recall or find: experiences over the years with children, parents, and colleagues in an interdisciplinary setting; notes from past mentors and conferences; excerpts from my previous talks and writings; a seemingly endless supply of information in journals and texts; and a lot of idea-swapping with experienced colleagues in the field. I ran out of steam around question ten.

When I finally finished, I assumed that some teaching assistant would be around to collect the quiz. I couldn’t find one. So, here are the original quiz questions as I received them, followed by my responses.

THE QUESTIONS

"The following ten questions comprise a take-home quiz. You may choose any eight questions. Complete in as thorough yet as concise a manner as possible. Don’t write a book. Your responses should reflect your background as a physician. Don’t try to sound like a teacher or a psychologist. We have heard from them."

"Remember that your graders will be parents and those front-line workers dealing with children who have learning and attention disabilities. Stay loose on the academia and keep it practical. If we had wanted to get into heavy research questions, do you think we would have resorted to a take-home quiz? Good luck."

**Question 1**

Excluded. The author elected to exclude Question 1. Not to do so would have messed up the question–chapter correlation. Normally, Question 1 would generate a response entitled Chapter 1. *This* is Chapter 1. There is no question about it.

**Question 2: Definition**

A. Philosophers and farmers ponder whether the chicken or the egg came first. The question to you is: Which came first — the attention difficulties or the learning problems?

B. Early in 1987, little John was diagnosed as having Attention Deficit Disorder. One month later, without any change in his difficulties, his phy-
sican, who keeps up with the professional literature obsessively, changed his diagnosis to Attention Deficit Hyperactivity Disorder. His parents were crushed, since they had been so pleased that John was not deemed hyperactive. What gives?

Question 3: Identification

A. Which is worse? A normal 4½-year-old child running around with a label of dyslexia, or a third grader with an unrecognized neurological impairment and learning disability who is considered to be “all boy” and a little lazy?

Comment on what should be done to prevent such examples of misidentification.

B. Never a day goes by that some teacher, parent, or even principal doesn’t utter, in absolute frustration, “He could do it if only he tried.” Similarly, on each of these days in doctors’ offices throughout the world echoes the phrase, “He’s all boy and he will outgrow it.”

Comment. Include in your discussion something about the role of neurological handicaps and their influence on classroom performance and doctors’ statements.

Question 4: The Physician

There seem to be a lot of physicians around these days. There are almost as many options for selecting a physician as there are for selecting a new long-distance phone company since the breakup of AT & T. In keeping with the trends in marketing, please give a rundown on the roles, whereabouts, and special qualifications of physicians who might be available to provide help for children with learning and attention disabilities.

Question 5: The Team

Nothing fancy here. Many people with different backgrounds and viewpoints have to work together in order to best serve children with learning and attention disabilities. Teamwork is 75 percent attitude and 25 percent work, with a little communication thrown in for good measure. We will not harp on the fact that no physician showed up for our meeting.

In addition to not showing up for meetings, what other behaviors and factors interfere with effective interaction and cooperation among members of a team? Comment regarding the physician’s interactions.
Question 6: Medical Considerations and Assessment

A. Discuss the influence of cultural norms and practices on the development of certain personality traits (persistence, distractibility) and physical attributes (skin sensitivity). (Yes, the questions are serious; and yes, we know that you are not a _____ anthropologist; and no, you are not allowed to skip a question. Answer the question.)

B. When someone is in the throes of an acute attack of appendicitis, she could care less about the surgeon's philosophical approach to diagnosis and treatment. She usually just wants someone with good hands. On the other hand, people working with physicians in the area of learning and attention disabilities need to know something about their medical approach and the tools and techniques they use in assessment. Why? Explain fully.

C. Recently a large cattle ranch was sold in central Texas. The former owner had two sons who had received extensive evaluations for learning and behavior difficulties. The ranch had been named in honor of these diagnostic efforts. It was called the “Strephosymbolia, MBD, MCD, Hyperkinesis, Hyperactivity, Psychoneurological Learning Disability, ADDH, Dyslexia, Delayed and Immature Maturation, All Boy, Sons-of-the-EBD Ranch.” Reason for sale: all cattle died at the branding.

Comment on whether children fare any better with labels than cattle do.

D. For years, archaeologists have been studying the ruins of an ancient temple of learning in Babylonia. Recently, in a very remote section of the temple, they discovered sheaves of medical reports that were so well preserved as to suggest that they had never been touched or read by the temple staff.

Have we made any advances in the readability and comprehension of medical reports since then?

Question 7: Neurological Evaluation

Frankly, we question whether the neurological assessment has lived up to its mythically high expectations. We were led to believe that the clinical neurological examination could uncover the mysteries of the mind’s functioning and its foibles as manifested in learning and attention disabilities.

Level with us. Were we right or wrong? Why?

Question 8: Medication

A. On the surface, it does not make a lot of sense prescribing a stimulant medication like Ritalin for children who are bouncing off the walls. If
medication is needed at all, it would seem more reasonable to prescribe a tranquilizer or sedative and be done with it. But you’re the doctor...

Explain fully. While you are at it, include why Ritalin is needed and who should get it.

B. They say that if you knew the side effects listed for medications, you probably wouldn’t even take an aspirin. They are right. The Physicians’ Desk Reference (PDR) lists a 2-inch-long column of side effects of Ritalin. This compares favorably to other commonly prescribed medicines like Mellaril, Tegretol, Tofranil, Dilantin, and several different cough preparations that have column lengths ranging from 2 to 11 inches. Realizing that manufacturers must list every possible reaction ever suspected in man and mouse, and that column length is hardly a scientific approach to the issue, we need some medical input.

Compare and contrast those side effects of Ritalin that commonly occur and are clinically relevant versus those that occur rarely in the child though commonly in the press. Be sure to give a balanced discussion by adding some of the positive benefits to be expected from Ritalin too.

C. Eight-year-old Harold was recently started on Ritalin. His teacher reports that he has improved considerably in his ability to sit in his seat, complete assignments, and follow directions. However, she laments that his letter reversals persist, his reading comprehension is no better, his aggressive behavior on the playground continues, and he still picks his nose. Is the Ritalin ineffective, or what? Comment.

Question 9: Controversial Therapies

Prevent dyslexia. Teach your fetus to read before he or she is exposed to the potential dangers of labor and delivery. This innovative in utero technology has been developed by experts in telecommunication and uterine reading. A kit is available at local outlets that includes complete instructions, transplacental projectors, belly-button bulb for higher illumination, and preg-primer readers I and II. A special crash course is available for those expecting to have a premature delivery.

If you believe this one . . .

Comment on the status of the more common controversial therapies.

Question 10: Review and Commentary

A. One more time . . . What do we need to know about hyperactivity hype and Ritalin realities to help us work more effectively with children who have learning and attentional disabilities and the physicians who care for them? In your discussion, lighten up a little. Give your own opin-
ion and don’t worry about giving a reference every time you come up with a good idea.

B. “Even those researchers who are comfortable with both the diagnosis of hyperactivity and the use of Ritalin have urged that considerable care be taken in prescribing the drug and deciding who gets it. But virtually every commonsense recommendation offered in the professional journals is routinely ignored by physicians throughout the country” (Alfie Kohn, 1990).

What’s it all about, Alfie?

**THE ANSWERS**

See corresponding chapters.
Definition of Learning and Attention Disabilities

People working in the realm of learning and attention disabilities need, at the least, a straightforward scheme to keep life simple. Consider, then, that there are basically three types of learning problems:

1. Chronic learning insufficiencies: Global deficiencies affecting all areas of learning—for example, mental retardation.
2. Transient learning "glitches": sporadic roadblocks to learning that occur every now and then and eventually are overcome with or without the assistance of a teacher—for example, "I just don't understand fractions."
3. Learning inefficiencies: long-term (greater than six months) attentional problems and/or classroom performance difficulties manifested by attentional deficits or a slow rate of skill acquisition in one or more academic or social learning areas despite normal intelligence. This large group includes those entities that are the subject of this book: Attention Deficit Hyperactivity Disorder (ADHD) and Specific Learning Disabilities (SLD).

This overall classification scheme works rather well for the simple-minded physician. Chronic learning insufficiencies are relatively easy to identify, categorize, and place in appropriate educational settings. And everyone recalls the "glitches" that seldom reach the physician's office, remaining in the bailiwick of the parent, teacher, or whoever possesses sufficient understanding and patience to take them on.
Learning inefficiencies, however, are more troublesome. Their diverse manifestations, multiple causes, and persistence make them difficult to classify and treat as a group.

Specific Learning Disabilities (SLD) include significant deficiencies in one or several academic areas despite normal intelligence and adequate learning opportunities. Attention Deficit Hyperactivity Disorder (ADHD) includes a bevy of manifestations characterized by age-inappropriate inattention, impulsivity, and/or hyperactivity.

SLD and ADHD are the two most common and serious disabilities affecting children and adolescents today. What is worse, they may, more often than not, occur simultaneously in the same person, leading to even more confusion. It is the chicken and the egg thing all over again. It is not clear in some cases whether the SLD leads to manifestations of ADHD, or the ADHD impairs learning, or whether both entities are manifestations of a common underlying disorder (McGee and Share, 1988).

Many think that the underlying fundamental basis for most learning and attention disabilities is neurological (brain) dysfunction. This has been difficult to prove or to document. Oftentimes this presumption of brain involvement is made only by exclusion, that is, ruling out any other significant reasons for the learning inefficiencies — whether social, such as in cultural deprivation; academic, such as inadequate or inappropriate teaching; or emotional, such as depression, anxiety, or confusion.

Finally, this field has a lot of problems with words. There have developed a variety of terms that have different meanings in different settings and at different times. SLD, for instance, may imply both poor academic achievement and attentional difficulties. Likewise, ADHD may be used to imply not only characteristic attentional difficulties but specific learning disabilities as well. To make things worse, the term hyperactivity may imply either ADHD, SLD, both, or a range of other associated conditions. More on this later.

In this text, ADHD and SLD will be considered as separate entities. For the sake of brevity, when referring to both, the term Learning and Attentional Disabilities will be substituted for the more cumbersome Specific Learning Disability and Attention Deficit Hyperactivity Disorder. For the sake of clarity, every effort will be made not to use the term hyperactivity. This may seem extreme, but explanation lies ahead. When forced to use it, the term hyperactivity will be the “expanded form,” which is a shorthand term for ADHD.

LEARNING DISABILITIES

Over the years there have been numerous attempts to define “specific learning disabilities.” One of the initial attempts was in 1967 in
Public Law 94-142. At that time the term referred to a disorder in one or more of an individual's psychological processes that involved understanding or using spoken or written language. Manifestations included an imperfect ability to listen, speak, read, spell, or do mathematical calculations. The term included such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental dysphasia. It excluded those children with learning problems primarily due to visual, hearing, or motor handicaps, mental retardation, primary emotional problems, poor teaching, or other environmental, cultural, or economic circumstances.

Since that time, modifications to the definition have been recommended based on the following factors. The group of disorders encompassed is quite heterogeneous. Difficulties persist past childhood. The common denominator appears to be a defect in acquiring and using information. There are additional social learning disabilities. One handicapping condition does not necessarily rule out the presence of an underlying separate learning disability. Therefore, in 1988 the Interagency Committee (Kavanaugh and Truss, 1988) recommended the following descriptive definition:

Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities or of social skills. These disorders are intrinsic to the individual and are presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance), with socioenvironmental influences (e.g., cultural differences, insufficient or inappropriate instruction, psychogenic factors), and especially with Attention Deficit Disorder, all of which may cause learning problems, a learning disability is not the direct result of these conditions or influences.

Whew!

It is not the purpose of this text to detail the particulars of each variety of specific learning disability. Terminology used in DSM III-R (which classified them as Developmental Disorders) and in the neurological literature, as well as a brief description of essential features, follows:

1. Developmental Arithmetic Disorder (dyscalculia): Impaired development of appropriate arithmetic skills.
2. Developmental Expressive Language Disorder (expressive