



# Essentials

## of WRAML3 and EMS Assessment

- A practical guide for conducting and supervising comprehensive as well as abbreviated memory assessments
- Demonstrates the value of and way to integrate objective and subjective assessment findings
- Provides useful strategies for interpreting global and specific test results

**Wayne Adams, David Sheslow  
Trevor Hall**

**Alan S. Kaufman & Nadeen L. Kaufman, *Series Editors***

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# **Essentials of WRAML3 and EMS Assessment**

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# Essentials

of WRAML3 and EMS

Assessment

Wayne V. Adams  
David V. Sheslow  
Trevor A. Hall

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## DEDICATION

To you who have provided and continue to provide such wonderful memories: Nora, Jen, Elizabeth, Scott, Paul, Cana, Ellie, Aurora, and Elyse!

*Wayne*

I am filled with gratitude for all the sustained wonderful memories authored by my children, Annie and Paul, and, of course, my longest and best memory author, my wife, Liz.

*David*

To Carrie, Jadon, and Ian for lovingly residing in all my best memories!

*Trevor*



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## SERIES PREFACE

In the *Essentials of Psychological Assessment Series*, we have attempted to provide the reader with books that deliver key practical information in the most efficient and accessible manner. Many books in the series feature specific topics in a variety of domains, such as specific learning disabilities, social-emotional learning, neuropsychological assessment, cross-battery assessment, and adaptive behavior assessment. Books in this category are intended for professionals in psychology and education – and for graduate students in these or related disciplines – who are involved with any aspect of assessment and intervention. A second category of books in this series, such as *Essentials of Bayley™–4 Assessment*, is devoted to a single test. Books in this category offer a concise yet thorough review of an instrument, with special attention given to the details of administration, scoring, interpretation, application, and tips for best practice of the test. Students can rely on series books in both categories for a clear and concise overview of the important assessment tools and key topics in which they must become proficient to practice skillfully, efficiently, and ethically in their chosen fields. Experienced clinicians will feel equally at home with this series in their efforts to remain on the cutting edge of new research and new instruments (including revisions of old ones) in an array of diverse fields.

Wherever feasible, visual cues highlighting key points are utilized alongside systematic, step-by-step guidelines. Chapters are focused and succinct. Topics are organized for an easy understanding of the essential material related to a particular test or topic. Theory and research are

continually woven into the fabric of each book, but always to enhance the practical application of the material, rather than to sidetrack or overwhelm readers. With this series, we aim to challenge and assist readers interested in psychological assessment to aspire to the highest level of competency by arming them with the tools they need for knowledgeable, informed practice. We have long been advocates of “intelligent” testing – the notion that numbers are meaningless unless they are brought to life by the clinical acumen and expertise of examiners. Assessment must be used to make a difference in the child’s life or the adult’s life or why bother to test? All books in the series – whether devoted to specific tests or general topics – are consistent with this credo. We want this series to help our readers, novice and veteran alike, to benefit from the intelligent assessment approaches of the authors of each book.

In *Essentials of WRAML3 and EMS Assessment*, Drs. Adams, Sheslow, and Hall provide important insights into memory and memory testing alongside substantive guidance in administering and interpreting these two tests. The WRAML3 builds on the strong foundation of the test’s two prior versions, continuing to provide a psychometrically sound memory assessment tool that can be used with children and adults, including older adults. Among other enhancements, the third edition of WRAML includes an embedded Performance Validity measure, greater emphasis on Delayed recall and Working Memory, additional process scores that allow more nuanced interpretation, and an additional abbreviated format. Both beginning and seasoned practitioners familiar with assessment in general, and memory assessment in particular, will find useful material that goes well beyond that found in the WRAML3 administration and technical manuals. While the WRAML3 is a complex instrument, the approach found in these very readable chapters provides users a means to evaluate their technical and clinical competency, especially useful for those new to the instrument and for those supervising students and colleagues.

Further, the inclusion of the EMS in this volume helps readers become aware of a means to contrast individually administered test results with self- and observer-subjective estimates of a given adult’s

performance in everyday tasks, such as remembering the location of a new office recently visited, or the content of a phone message. Everyday memory (i.e. memory performance outside of the clinician's office) is often overlooked. This volume shows how to use EMS results to generate practical, meaningful, and person-centered recommendations in combination with formal testing results (e.g. the WRAML3). This volume, therefore, will provide sound professional, practical guidance in how to conduct tailored, user-friendly, and functionally meaningful memory assessments.

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Neag School of Education, University of Connecticut

## ACKNOWLEDGMENTS

**T**he original WRAML appeared in 1990, which is before some reading this were born! Over the years, we would like to feel that the test has been on a path of steady improvement and greater helpfulness. Accordingly, we would be remiss not to express sincere gratitude for our associations with those at Wide Range, Inc. and our more recent friends at Pearson, as well as for the many WRAML users, clients, students, and colleagues who, over the years, have been sources of learning, encouragement, challenge, and useful suggestions. Good memories!



## **ESSENTIALS OF MEMORY MEASUREMENT USING THE WRAML3 AND THE EMS: INTRODUCTION AND OVERVIEW**

**M**emory is fundamental in determining who we are, what we become and what we perceive our past to have been. It is sometimes overlooked that activities as varied as psychotherapy, job training, and forming friendships are dependent on reasonably intact memory systems for such interactions to succeed. Those who pause to reflect on it usually marvel that the phenomenon of recall is a “by-product” of electrical connections and chemical interactions within our brains. Many have awe for those few who can remember with complete clarity the activities of a day randomly chosen from many years ago or correctly reproduce days or weeks later material only briefly perused. Less dramatically, we ourselves can recount events such as annual holiday get-togethers over the last few years, with only slight distortions of the differing locations and happenings of those times. We can also be stunned when we evaluate someone and discover after a mid-session break that they do not remember meeting us or the tasks just completed.

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*Essentials of WRAML3 and EMS Assessment*, First Edition.

Wayne V. Adams, David V. Sheslow, and Trevor A. Hall.

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Memory is so fundamental to cognition that it received prominent attention early by both test pioneers, Binet and Wechsler. It may be surprising to learn that Wechsler developed a memory scale (i.e., the *Wechsler Memory Scale* [Wechsler, 1945b]) before any of his standardized child- or adult-focused intelligence instruments! This book focuses on two recent additions to the long list of increasingly sophisticated memory tests that have since evolved. In the pages that follow, it is the intent of the authors to provide a solid understanding of the *Wide Range Assessment of Memory and Learning, Third Edition* (WRAML3) (Adams & Sheslow, 2021) and the *Everyday Memory Survey* (EMS) (Hall et al., 2021) so that their purpose, administration, and interpretation are clearly understood. Whether used as stand-alone measures or parts of a comprehensive testing battery, it is hoped that users will be able to better address relevant referral questions with greater diagnostic sophistication, leading to meaningful recommendations that bring about a better quality of life for those at the center of the assessment, as well as those working with them.

## **IS MEMORY ASSESSMENT NEEDED?**

Is memory assessment really needed? That is a reasonable question to ask at the outset of this book. After all, psychologists have no shortage of test instruments available, but most users have a shortage of available time. When have you heard a trainee or seasoned clinician say, “I have too much time to evaluate this client?”

In the “real world,” memory is largely an ignored phenomenon unless it is not working properly. Teachers who have had a severely brain-injured student return to the classroom, or families with an aging parent entering dementia know only too well the transformative impact of altered memory, not only on the affected persons but also on those who know and interact with them. And as discussed in Chapter 2, the paradox about memory is that while it has been studied for centuries, we still have limited understanding of how it actually works.

The increasing impact of neuroscience on psychology and the lay public (e.g., ads for medications that purport to have a positive impact on memory loss, and almost daily news stories around memory loss) have led to an increased awareness that memory is a critical aspect of human cognitive functioning. Rapid Reference 1.1 lists common

## *Rapid Reference 1.1*

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### **A Sampling of Common Pediatric and Adult Conditions Triggering Referrals for Psychological Assessments which Often Uncover Memory Deficits**

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#### **Typical Common Referrals for Children and Adolescents**

Traumatic Brain Injury  
Sports Injuries  
Motor Vehicle Accidents  
Abuse

Acquired Brain Injury  
Stroke  
Infectious/Inflammatory Conditions  
Near Drowning  
Cardiac Arrest  
Critical Care Intervention

Attention Deficit/Hyperactivity Disorder  
Brain Tumor  
Cancer Treatment  
Brain Infections  
Prenatal Alcohol/Substance Exposure  
Seizure Disorders  
Intellectual Disability  
Autism Spectrum Disorder  
Genetic Disorders  
Learning Disability  
Substance Abuse

#### **Typical Common Referrals for Adults**

Traumatic Brain Injury  
Sports Injuries  
Motor Vehicle Accidents  
Falls

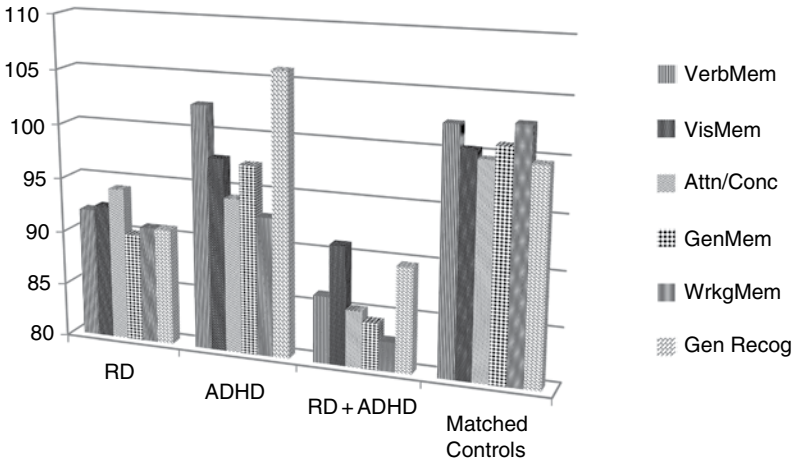
Acquired Brain Injury  
Stroke  
Infectious/Inflammatory Conditions  
Near Drowning  
Cardiac Arrest  
Critical Care Intervention

Attention Deficit/Hyperactivity Disorder  
Brain Tumor  
Cancer Treatment  
Brain Infections  
Alcoholism and Other Substance Abuse  
Seizure Disorders  
Thyroid Disorders  
Kidney Disorders  
Liver Disorders  
Hypoxia (e.g., cardiac arrest)  
Medication Side Effects  
Dementia  
Mild Cognitive Impairment  
Normal Pressure  
Hydrocephalus

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referral conditions that often lead to assessments typically yielding results showing that memory has been negatively impacted. Triggered by acute events or chronic conditions, the importance of obtaining an estimate of memory functioning as part of any comprehensive psychological assessment should not be underestimated.

To further press the argument that some kind of memory assessment in many cases is a reasonable inclusion, let us take a look at the very common referrals of Developmental Learning Disorder (LD) and Attention Deficit/Hyperactivity Disorder (ADHD). Such referrals of children and adults are made every day in schools, and to agencies and to those in private practices across the country, yet, few psycho-educational assessments typically include much by the way of memory assessment other than possibly a few short-term memory tasks. A dissertation study (Weniger & Adams, 2006), however, suggests that for those with LD or ADHD, memory deficits are fairly common, and for those with both conditions, memory deficits may be pervasive and even profound. Figure 1.1 shows the results of that study using the WRAML2. (Given the degree of overlap between WRAML2 and WRAML3, it is reasonable to expect similar results, but that assumption needs empirical replication.) You can see that for those with ADHD, generally immediate verbal memory performance is not that different than matched controls. As expected, the Attention/Concentration Index is lower than controls, and Visual Immediate Memory is a bit lower, primarily from lower performance on a task making perceptual-motor demands, a common finding in the literature (Ek et al., 2007; Pitcher et al., 2003). Of even more interest are the results for children with Developmental Reading Disorder; those children show uniformly lower performance on all the immediate memory indexes, including Working Memory. Of greatest interest though are the dramatically lower results of those children with both disorders (about 40% of those who present with ADHD), and these results were replicated even on the recognition memory tasks that assess a rather robust form of memory storage. If these data can be replicated, it would suggest that an ADHD or LD assessment that does not include some in-depth memory assessment is incomplete, especially given the academic



**Figure 1.1 WRAML3 Standard Score performance of children with ADHD, RD (reading disorder), and both disorders, compared to matched controls.**

*Note:* RD = reading disorder, ADHD = attention deficit hyperactivity disorder, RD + ADHD = having both the prior conditions, VerbMem = Verbal Immediate Memory Index, VisMem = Visual Immediate Memory Index, WrkgMem = Working Memory Index, and Gen Recog = General Recognition Index.

concerns (which are heavily memory related) that trigger most of these assessments. How often are memory compensatory strategies part of the recommendations for helping ADHD children (or adults) with reading delays?

On the other end of the population demographic are older individuals who are living longer than their parents and, as such, present with a higher frequency of concerns around potential effects of dementia, especially of the Alzheimer's type, as well as mild cognitive impairment. Unique to the older age group is the need for repeated assessments over time to tease apart "normal" decline in memory function vs. that possibly related to an additional degenerative process. Accordingly, comprehensive as well as abbreviated batteries of memory tests have increasingly become part of the older adult's assessment experience.

Because of the health and safety importance of turning neuropsychological test data into useful recommendations related to everyday functioning, as noted above, this book also includes the EMS,

a standardized self- and other-report survey of everyday memory performance. When used together, the authors feel confident that combining each test's results will greatly enhance the number and usefulness of the recommendations included in the typical psychological report and debriefing session.

## **ORGANIZATION OF THIS BOOK**

In the chapters that follow, the authors hope to better familiarize you with both the WRAML3 and EMS. Chapter 2 provides a brief overview of research with which those assessing memory should have familiarity, both for appreciating the empirical basis upon which memory assessment was founded, as well as the neurological basics involved in this core set of cognitive processes. The subsequent chapters are devoted to the use of the WRAML3 and EMS, highlighting interpretation more than administration or psychometric details of the instruments since those are covered thoroughly in their respective manuals. As the chapters progress, you will find that the interpretive focus becomes more complex eventually including several case vignettes for illustration and discussion. Relatively few conventional case studies have been included since full psychological assessments tend to be lengthy, and therefore their case studies also tend to be lengthy and, at times, tedious, therefore often skimmed or skipped by the reader. Hopefully, including shorter vignettes will be easier to follow.

A later section of the book is devoted to the EMS that, as the name suggests, focuses upon perceived capability with memory tasks of everyday life. (Readers wondering why a pediatric version is not available will find the answer in the introductory EMS chapter!) The EMS is a measure intended to be used in conjunction with a formal memory test measure such as WRAML3, and provides a brief, structured opportunity for the client and their significant other to each furnish input on how well typical memory-laden daily life experiences are performed. The scale is intentionally concrete and grounded in everyday experiences to which almost all people can relate. By using EMS input from both the client and someone who knows the client well, areas of

perceived memory concern can be flagged. Once substantiated, tailored remediation recommendations can be offered in areas of identified concern, based on EMS findings, memory test results, and other relevant data uncovered during a comprehensive evaluation. One of the most common complaints heard from laypeople and especially from other professionals when sent a psychological report is, despite many pages of test results, there are few practical and specific recommendations that can be used to remediate the deficits that triggered the referral. For those working with adults, using the EMS and WRAML3 together will provide useful test results on a broad array of memory functions as well as provide ecologically meaningful targets for useful recommendations; hopefully, that will address the justifiable criticism.

The book concludes with a selection of common WRAML3 and EMS questions which have been presented to the authors by trainees, colleagues, or users contacting us personally or by email.

The authors have deliberately tried to keep the tone and content of this volume practical for both the experienced clinician as well as someone just starting a professional career in assessment. The reader will notice inclusion of the supplemental helps that those using the *Essentials* series have come to expect such as “Rapid Reference,” “Don’t Forget,” “Caution,” and “Test Yourself” inset boxes. In addition, the authors have included subtest administration checklists that can be used to help establish and maintain WRAML3 administration competency; these are especially intended for use by supervisors or the professionals themselves as they video and review practice administrations as is commonplace in therapy training, but, curiously, occurs much less in learning assessment skills.

Readers of this book will encounter several terms used for those being evaluated (e.g., client, patient, examinee, and participant) and those doing the evaluation (e.g., clinician, examiner, evaluator, and test user); in the pages that follow, the terms are used interchangeably reflecting terminology found in various clinical settings.

The authors have mercifully made no attempt to be exhaustive in their topical discussions other than those related directly to the two test instruments. For them, there is a thorough emphasis on practical

content and clinical utility. It is hoped that by utilizing this volume, the reader will become increasingly confident in how to use and interpret the WRAML3 and/or EMS, as well as feel more able to exploit the instruments' strengths and clinical subtleties to better assist those who are referred with suspected or known memory and learning issues.

Finally, the authors are aware that most readers will not pick up this book and read it from cover to cover in one sitting! Instead, it is more likely that on many occasions, specific chapters or subsections of chapters will be selected to answer specific questions or gain more background or understanding of some specific part of the WRAML3 or EMS. Consequently, there is some redundancy found whenever a section depends on principles or content stated earlier but is needed again for clarity for those who did not read the earlier narrative or for whom that reading occurred a while ago. We ask some forbearance from those whose interest will be so captured that they will read this volume right through from beginning to end. To their advantage, repetition is a proven vehicle for improving recall!



# MEASURING MEMORY: FOUNDATIONS

**G**enerating meaning from these words is a notable memory achievement. You have to remember procedural aspects, like where to start on the page and to use your eyes to scan in the direction common for your written language. You also need to remember what the various letter configurations and word combinations represent spatially, phonetically, and holistically. Then you need to remember what meaning to assign those many phonetic and spatial combinations. You also need to remember the meaning from the beginning of a sentence until the end of the sentence, and the beginning of the paragraph until its end. Obviously, without memory, reading would be impossible; and actually, without memory, life as we know it could not exist.

As a central feature of human cognition, memory is represented in nearly all day-to-day functions, be they intellectual, emotional, academic, social, vocational, or recreational. Memory provides meaning

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in terms of who we are and it preserves our identity. Without the ability to recall our personal history, we would be in a near state of confusion and constant dilemma. Indeed, the greatest tragedy of most dementias is that they eventually take from us who we are and what we know of ourselves and others. Memory allows us to acquire skills and knowledge to perform our jobs and to recognize and respond appropriately to our loved ones. Simply stated, memory is a ubiquitous necessity for a life most would consider a quality existence.

While memory is a central cognitive process, it is also a vulnerable brain function due to its being highly interconnected and dependent on other aspects of cognition. Various injuries and illnesses, minor or devastating, can affect the efficiency of the brain's storing new memories and/or retrieving those already stored. Generally speaking, if there is going to be some cognitive compromise resulting from an injury or illness to the brain, it is highly likely that memory in some form will be among those processes negatively impacted. It is well known that difficulties with memory and attention are the two most common complaints following a brain injury, even if that injury is mild. Therefore, and akin to intellectual functioning, memory prowess is widely variable across individuals, from very impaired to highly advanced, with such differences apparent even in early childhood. There are also variable developmental trajectories associated with age; for example, visual memory seems to develop more rapidly and show decline in adulthood earlier than verbal (more about developmental trajectories in Chapter 10). Consequently, it should not be surprising that psychologists, neuropsychologists, neuroscientists, and physicians have devoted, and continue to devote much attention to memory and its measurement.

As noted in Chapter 1, a good portion of this book features the WRAML3, one of the most utilized comprehensive memory batteries currently available for assessment of memory functions from childhood to older adulthood. This volume also includes the introduction of a new complementary assessment tool, the *Everyday Memory Survey*. The WRAML3 is intended to reliably sample a variety of memory functions that are of clinical and theoretical importance for children, adolescents,

and adults. The EMS provides reliable subjective personal accounts of memory performance demanded in navigating daily life; both the client and another familiar with the client contribute their opinions about how much challenge is posed performing specific everyday, functional recall tasks. Incidentally, the EMS was developed and normed at the same time as the WRAML3, sharing a significant portion of cases. By sharing standardization samples in this way, the authors used a psychometrically sound manner to bring together two important arenas that are often left disconnected, namely formal test performance of memory (i.e., the WRAML3) and perceived capacity to perform everyday memory demands (i.e., the EMS). When the WRAML3 and the EMS are used in concert, the evaluator has an empirical basis to comment on memory performance demonstrated both in the clinic and in the everyday world.

Memory can be broken down into a multitude of forms, or *types*, each of which has a seemingly endless number of variations of task, process, and stimuli. Depending upon one's theoretical orientation, distinctions among memory processes may carry such labels as abstract, meaningful, verbal, figural, spatial, associative, free recall, cued, sequential, recognition, short-term, long-term, rote, retrieval, procedural, episodic, working, semantic, and ecological—among others. There is no uniformly accepted terminology used to describe the subprocesses of memory. This diversity in memory terminology is rivaled only by the hundreds of terms designed to reflect specific aptitudes and personality characteristics.

A single task may carry multiple classifications legitimately because of the complexity of memory and the corresponding theories of memory, and their terminology often overlaps. Some have even considered

### **DON'T FORGET**

The WRAML3 formally measures memory and learning using a traditional one-to-one testing format. The EMS provides a subjective estimate of clients' perception of how well they are performing everyday life tasks that make memory demands, and validation (or lack of it) of that perception from a caregiver.

the classic definition of *learning* as also defining *memory* (e.g., see Kolb & Whishaw, 2021). However, although the distinction may be to some degree artificial (anything recalled must have been *learned*), the WRAML3 distinguishes between memory and learning by providing two subtests that allow the examiner to actually witness new visual and verbal learning occurring over multiple learning trials. The EMS, by design, captures estimates of perceived competency in recall involved in everyday demands that are also often impacted more by situational factors beyond memory alone. Although clinical utility was emphasized in the development of the WRAML3 and EMS, and is an important focus throughout this volume, researchers will also find both tests valuable because of their sound psychometric qualities, as well as content coverage of more varied memory functions across a broader age range than is available in most, if not all, other standardized instruments.

What follows in the remainder of this chapter are two sections that might be labelled, “what all clinicians using memory tests should know.” The first looks at our memory-testing legacy and the second focuses on basic neuroanatomy of memory. Such background will

### **DON'T FORGET**

The EMS, by design, captures estimates of perceived competency in recall involved in everyday demands that are also often impacted by other factors beyond memory alone.

hopefully serve as a useful backdrop to appreciate how the areas have evolved, as well as provide a foundation for better understanding (and interpreting) the cognitive process these tests are measuring.

## **HISTORICAL FOUNDATIONS**

Unlike some domains of psychological testing, memory assessment had a relatively strong empirical base upon which to build. That foundation has had many contributors. Hans Ebbinghaus is generally recognized as among the first to study memory. His now classic “forgetting curve” was published as part of numerous findings related to more than a decade of research on memory and forgetting (Ebbinghaus, 1885). Ebbinghaus operationalized what we now think of as *immediate memory* using digit

span and nonsense syllable tasks. He showed that the amount to be remembered affects performance and having a way to *chunk* information improved performance. The meaningfulness of the information to the learner was shown to positively impact retention too.

A contemporary of Ebbinghaus was Alfred Binet, famous for creating the first measures of intellectual ability. Less known is Binet's interest in many facets of memory. This focus is perhaps one reason that 20% of his first intelligence test (the 1905 Binet-Simon Scale) consisted of questions directly assessing immediate verbal and visual memory abilities.

While Sigmund Freud did not investigate memory per se, his revolutionary theory was heavily reliant on assumed and diverse memory mechanisms. Later, Karl Lashley (1950) (long-term memory), George Miller (1956) (and his "7 ± 2" rule), Alexander Luria (2006) (the case of S and his unlimited long-term memory), and many others contributed an enormous amount of research that helps us better understand memory. A lengthier treatment of research "pioneers" who contributed both directly and indirectly to memory assessment can be found in comprehensive sources like Haberlandt (1997); Squire and Schacter (2002); and Kolb and Whishaw (2021).

Memory research continues, embracing new technologies, such as using fMRI imaging techniques, focusing on such contemporary and applied topics as investigating the impact of blast injuries on memory of soldiers (Newsome et al., 2015); memory impairment following pediatric intensive care admission (Leonard et al., 2022); estimating performance validity when assessing learning and memory (Nayar et al., 2022); memory as is related to central nervous system disease or injury (Backman et al., 2005; Baron, Fennell, & Voeller, 1995; Cullum, Kuck, & Ruff, 1990; Cytowic, 1996; Gillberg, 1995; Knight, 1992; Lezak et al., 2019; Mapou & Spector, 1995; Mitchell, 2008; Reeves & Wedding, 1994; Weissberger et al., 2017); and memory decline as it impacts activities of daily living (Farias et al., 2003; Jefferson et al., 2006; Mlinac & Feng, 2016).

Yet, despite over a century of research on the topic of memory, the clinical assessment of developmentally typical and disordered memory

## DON'T FORGET

The two most common complaints of individuals following a closed head injury are difficulties with attention and memory, so both should be assessed.

mood regulation from memory, as well as distinguishing immediate memory from short-term and longer-term memory (see especially Fuster, 1995; Miller, Bigler, & Adams, 2003; Riccio & Reynolds, 1998; Riccio, Reynolds, & Lowe, 2001), and understanding the differential effects brain insults have on memory at different developmental stages.

We have known for a long time that certain neurological disorders of adulthood tend to occur in the elderly but as noted in Table 2.1, may also appear as early as 30 years of age. These “senior disorders” typically have a profound impact on memory, and the type of memory loss that a person displays may have diagnostic implications for that disorder. Table 2.1 lists the four most common forms of dementia which differ in how much and when memory is impacted, especially in their early stages of onset. Determining the presence and severity of dementia is a common reason for referral for those doing memory testing. While there are four discrete columns, in reality, there are probably different subtypes of each form of dementia, and people can have more than one kind and at different stages.

## PUTTING IT INTO PRACTICE

Prescribed medication use and its inadvertent mistaken ingestion are common contributors to memory difficulties, so should be examined carefully when gathering history, especially in adults.

has been fraught with problems (Fuster, 1995; Miller, Bigler, & Adams, 2003; Prigatano, 1978; Riccio & Reynolds, 1998), many of which stem from difficulties separating intertwined constructs such as executive functioning, attention, and

Also, in obtaining a thorough history, examiners should be looking for conditions such as those found in Rapid Reference 2.1 even for referrals not explicitly focused on memory concerns. If any are part of the “current status” or “past history” of the client, at least a memory screening may be indicated.