

**BRAIN INJURY VISUAL ASSESSMENT
BATTERY FOR ADULTS
(biVABA)**

TEST MANUAL

MARY WARREN OT, PhD, FAOTA, SCLV

**Published by:
visAbilities Rehab Services Inc.**

Copyright © 2023 visAbilities Rehab Services Inc.

All Rights Reserved

This test manual may not be reproduced in whole or in part by any means, except for the personal use of the purchaser without permission from visAbilities Rehab Services Inc. For information contact: warren@visabilities.com

DISCLAIMER

The information in this manual is meant to provide a rationale for the assessments, and instructions and guidance on how to use assessment results to select interventions that enable the client to participate in daily occupations. In addition to instructions and descriptions of the assessments, the manual provides information on common types of vision impairment from adult acquired brain injury, their effect on occupational performance, and evidence-based interventions to improve compensation for the vision impairment. The information is not meant to substitute for the services of an ophthalmologist, optometrist, neurologist, neuropsychologist, or other health care or vision rehab professional.

We have made every effort to ensure that this revised manual is current, complete, and accurate. However, there may be unintentional typographical and content mistakes. The manual is not intended to provide a comprehensive compilation of all information available on visual assessment of adults with acquired brain injury. We urge you to make use of additional sources of material on this subject.

The author, Mary Warren, and publisher, visAbilities Rehab Services Inc., will not be held responsible or liable to any person or organization with respect to any loss, damage, or injury caused, or allegedly caused directly or indirectly by the information contained in this manual.

IF YOU DO NOT WISH TO BE BOUND BY THESE CONDITIONS, RETURN THE TEST BATTERY TO VISABILITIES REHAB SERVICES FOR A FULL REFUND. TO QUALIFY FOR A REFUND THE BATTERY MUST BE UNUSED AND IN GOOD CONDITION.

The author would like to thank the many persons who contributed to the biVABA.

Dr. Josephine (Jo) C. Moore, Professor Emeritus, University of South Dakota School of Medicine, for the use of her amazing, detailed illustrations. Dr. Moore's skill at making this most complex of subjects understandable to a generation of clinicians has benefitted countless clients. Her dedication has ensured that neuroscience continues to be an integral part of occupational therapy education.

Dr. Lea Hyvarinen, University of Helsinki, for granting permission to include the LeaNumbers Intermediate Acuity Test Chart and the LeaNumbers Low Contrast Flip Chart with 10M Optotypes in the battery.

Dr. Bertil Damato, Consultant, Ophthalmic Surgeon, St. Paul's Eye Unit Royal Liverpool University Hospital for permission to include the Damato 30 Point Multifixation Campimeter in the battery.

Yolanda Cate, MS, OTR/L, SCLV, CDE for her assistance in creating the Spanish version of the Warren Text Card

The wonderful occupational therapy practitioners who contributed to the development of the original battery in 1998 and the subsequent revisions.

PREFACE

In my early clinical career, I worked mostly with adults recovering from stroke or traumatic brain injury. I had been well-trained in how to address motor limitations using Bobath, Brunnstrom, and NDT interventions. But I didn't know anything about assessing or treating the client's visual processing deficits. Although I had graduated with an OT degree from a fine university, I had received little formal education on vision impairment. I knew that double vision was possible, but I don't recall that hemianopia was ever mentioned, and neglect was barely mentioned. I was aware of Jean Ayres' newly emerging sensory integration theory but was taught that it only applied to children. I knew that many of my clients didn't see well but as I had no idea how to evaluate or improve their vision, I focused instead on their physical and cognitive limitations, as did my OT colleagues. As my clients consistently failed to fully achieve their goals, I slowly began to suspect that maybe their vision was to blame. Frustrated by my lack of knowledge, I launched a self-study on how to assess and treat visual impairment from brain injury. I studied the work of Getman, Frostig, Cratty, Ayres and others. I researched the types of vision impairment associated with brain injury. Mentored by Dr. Moore, I eventually developed the visual perceptual hierarchy to serve as a framework for assessment and intervention.^{257, 258}

With a framework in place, I began to focus on assessments that would help me identify how vision impairment limited the client's ability to participate in occupations. I realized that the traditional diagnostic assessment that relies on tightly controlled test procedures and cut-off scores to identify types of vision impairment would not provide what I needed. Comparing my client's performance to other adults may help label the deficit but it would not enable me to fully understand how my client's vision facilitated or inhibited their occupational performance. I needed a *clinical tool* that would show me my client's strengths and weaknesses in using their vision for occupations. This desire became the rationale for selecting the biVABA assessments.

Using what I had learned, I identified four principles to guide the design of the biVABA.

1. A client's visual performance is not significant in terms of how it deviates from an established norm but how it interferes with functional ability.
2. OT evaluation should focus on identifying the client's strengths and weaknesses in using vision to participate in occupations.
3. Intervention is needed only when the client's ability to use vision prevents or interferes with performing a necessary or desired occupation.
4. Intervention should focus on maximizing strengths and minimizing weakness in the client's ability use vision to participate in occupations.

The subsequent assessments that I selected for the biVABA screen for impairment in the four visual areas that are most often impaired in brain injury. These visual areas include high and low contrast visual acuity, visual field, oculomotor function, and visual scanning and attention. Several assessments were designed by experts from ophthalmology and optometry; others I designed based on the research literature and clinical experience. The assessments do not use

cut scores or other diagnostic criteria to classify the client as having a specific type or level of vision impairment. Instead, they combine information from short, standardized assessments with key clinical observations to identify the effect of the client's vision on occupational performance. Cuing and do-overs are built into the assessments to provide insight into the client's ability to compensate and learn from their mistakes to improve their visual performance.

I consider my primary contribution to the biVABA to be information on how to interpret and use the assessment results to develop effective interventions that reestablish occupational performance. Besides detailed instructions for administering the assessments, the manual describes expected occupational limitations and how to interpret assessment results and use them to set goals and provide intervention. The appendices at the end of the manual provide additional information on evaluation and intervention and a complete list of references.

This updated manual represents the culmination of over 40 years of study, research, and clinical experience working with adults experiencing visual impairment from brain injury. OT's familiar with my work should already understand the framework that underlies my approach to assessment and intervention. But, if you are unfamiliar with this approach, I strongly encourage you to read sections 1 and 2 before moving onto the sections that describe test procedures, interpretation, and intervention.