

BRAIN INJURY ASSOCIATION OF PENNSYLVANIA  
POSITION PAPER

Treatment Standards for Traumatic Brain Injury

Compiled by the Medical/Scientific Advisory Committee, January, 2003  
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Overview and Definitions: Recommendations for management of conditions such as traumatic brain injury (TBI) may be classified according to the strength of the evidence supporting the recommendations. According to one classification scheme, practice standards are based on the strongest evidence from well-controlled research studies. Guidelines are based on "moderate clinical certainty," from less well-controlled studies and/or consensus of experts in the field. Practice options are strategies for patient management that are based on inconclusive evidence or for which there is conflicting opinion.

Standards for Brain Injury: Very few practice standards (as defined above) exist for TBI care, because of the lack of evidence from well-controlled research to date. However, many recommendations of a less formal nature have been compiled. The following sections summarize some of the published recommendations for the management and care of TBI and related groups.

*Acute TBI Management:* Acute emergency and neurosurgical care is the area in which most, if not all, of the actual standards for TBI care exist. The following publications contain summaries of these standards based on research evidence:

1. Severe TBI....J Neurotrauma 13:641-734, 1996
2. Severe TBI update....J Neurotrauma 17:451-627, 2000
3. Penetrating TBI....J Trauma 51 (supplement), 2001
4. Prehospital Management of TBI...J Neurotrauma 19 11-174, 2002

The specific topics covered in these publications include proper assessment and treatment for oxygenation and blood pressure, assessment and monitoring of consciousness, hospital transport decisions, use of designated Trauma Systems, monitoring of intracranial pressure, the use of certain drugs in acute care, management of intracranial bleeding, etc.

*Rehabilitation of TBI:* Standards for rehabilitation of TBI, as defined above, do not yet exist.<sup>1</sup> Rehabilitation guidelines and options for TBI have, however, been summarized in several publications. These are primarily based on expert opinion/ consensus and / or "soft" research evidence.

1. The NIH Consensus Conference (1999) released a set of general recommendations for TBI rehabilitation. Some highlights/ emphases included: TBI rehabilitation needs are lifelong; treatment must be individualized; family involvement is critical; cognitive and behavioral assessment and treatment as well as substance abuse treatment should be included in comprehensive programs. Discussion of these and other recommendations is included in the published proceedings of the conference: Journal of the American Medical Association, 1999 (Sep 8); 282(10) 974-83. The NIH also published a pamphlet devoted to the conference proceedings.

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<sup>1</sup> There are several professional groups and task forces working on standards development and literature reviews that could lead to standards development for TBI rehabilitation. For example, the Evidence Based Guidelines Group on Neurobehavioral Consequences of TBI within the ACRM has task forces working on compiling treatment standards and guidelines for aggression and irritability, affective disorders, and cognition.

2. The Commission on Accreditation of Rehabilitation Facilities (CARF), each year, publishes a *Standards Manual for Medical Rehabilitation*. This Manual includes overall standards for medical rehabilitation, as well as both general and specific standards for brain injury rehabilitation. To be accredited in medical rehabilitation and specifically in brain injury rehabilitation, providers must undergo a clinical and administrative site visit every three years that confirms that they are complying with CARF standards. For 2002, CARF has 31 pages of general and specific standards that are applicable to brain injury rehabilitation programs along the continuum of care, from inpatient to long-term residential treatment. The CARF brain injury standards seek to ensure that an accredited program has the commitment, capabilities, and resources to ethically meet the unique medical, physical, cognitive, psychosocial, behavioral, vocational, educational, and recreational needs of persons with acquired brain injuries. A CARF brain injury program demonstrates coordination, interaction, and feedback among all components of its continuum of care. The CARF interdisciplinary team includes the person served and the family/ support system and professionals from a wide variety of disciplines depending on specific needs. More information is available on the CARF website ([www.carf.org](http://www.carf.org)).

*Cognitive Rehabilitation* is another area that is relevant to TBI rehabilitation, although not unique to it. In 2000, standards, guidelines and options for cognitive rehabilitation of TBI and stroke were summarized along with a detailed review of controlled research literature by a Task Force of the American Congress of Physical Medicine and Rehabilitation's Brain Injury Special Interest Group. The results, which were based on a thorough review of literature up to and including 1998, were published in the *Archives of Physical Medicine and Rehabilitation* v. 81 (December 2000), 1596-1615. Highlights of the findings included:

- 20 of 29 :Class I: studies (controlled studies providing the strongest evidence) supported the effectiveness of cognitive rehabilitation for persons with acquired brain injury or stroke.
- 8 of the 12 "Class I" studies focusing specifically on TBI supported the effectiveness of cognitive rehabilitation. The rehabilitation methods in these studies addressed attention, functional communication, memory, and/ or problem solving.

*Substance Abuse Disorders and Treatment for People with Disabilities:* Although not specifically geared to brain injury, guidelines for substance abuse (SA) treatment for those with cognitive and physical disabilities may be relevant to many persons with TBI. These guidelines were compiled by the Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment and are summarized in the website of the National Guideline Clearinghouse: [www.guideline.gov](http://www.guideline.gov). Highlights include recommendations on how to make accommodations to SA programs to meet the needs of those with disabilities; how to screen for disabilities among people attending SA treatment; and how to adapt counseling techniques to accommodate cognitive, communication and sensory deficits.

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