

## Traumatic Brain Injury (TBI) Outcome Domains and Descriptions

Outcome Domain Name (equivalent to CDE Sub-Domain)	Relevant Population	Domain Description and Relevance in TBI
Academics	Pediatric	Children with TBI have been found to have significant academic difficulties characterized by school failure and deficits in academic achievement such as reading, math, and written language.
Adaptive and Daily Living Skills	Pediatric	Adaptive and daily life functioning consists of multiple domains and involve the ability to “adapt” to (e.g., adjust, vary, fit one’s behaviors / actions) and manage one’s surroundings to effectively function in home, school and community life. This domain also includes children’s functional activity and activity limitations.
Behavioral Function	Adult	Behavioral dysfunction is commonly reported following TBI and may contribute to difficulties in return to work/school, personal relationships and social functioning. Common examples are aggression and childlike behavior.
Cognitive Activity Limitations	Adult	Cognitive activity measures describe the impact of neuropsychological impairments on cognitively loaded real-world tasks such as instrumental activities of daily living, functional communication, and health and safety-related behaviors.
Effort/Symptom Validity	Adult & Pediatric	Poor results on tests of memory and cognition may be due to lack of effort or malingering. Tests in this domain help to evaluate the likelihood that cognitive impairment explains the participant’s/subject’s test results.
Family and Environment	Pediatric	This domain includes moderators of outcome related to family and environment as well as the consequences to family.
Global Outcome	Adult & Pediatric	Global outcome measures summarize the overall impact of TBI incorporating functional status, independence and role participation.
Health-Economic Measures	Adult	Health-economic measures assess the magnitude of benefit in relation to costs spent; e.g., they identify the most cost-effective therapeutic procedure in terms of cost per Quality Adjusted Life Year (QALY).
Infant and Toddler Measures	Pediatric	Childhood and adolescence represent a wide range of developmental levels and even most pediatric measures are inappropriate for infants and toddlers. Therefore, limited special measures are included for this age range.
Language and Communication	Pediatric	Deficits in language comprehension and expression and in speech articulation are common after TBI. Measures of language use in context (pragmatics) are particularly sensitive to TBI effects.

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Military Studies	Adult	Additional measures specifically designed for and/or in widespread use in military populations are included in this domain. If an instrument/measure is already categorized using another outcome domain it is NOT included in this domain to prevent listing instruments/measures multiple times within the same population.
Neuropsychological Impairment	Adult & Pediatric	Objective measures of neuropsychological functions such as attention, memory and executive function are very sensitive to the effects of TBI and often affect everyday activities and social role participation.
Patient Reported Outcomes (Future Multidimensional Tools)	Adult & Pediatric	No single measure to date can adequately capture the multiplicity of difficulties that individuals with TBI may face. This domain includes emerging large-scale measurement tools for patient reported outcomes across several domains for generic medical populations, neurological compromise, and TBI-related complaints.
Perceived Generic and Disease-Specific Health-Related Quality of Life	Adult & Pediatric	TBI may create significant limitations in multiple areas of functioning and well-being, often reducing perceived quality of life with regard to multiple generic and disease specific dimensions.
Physical Functioning	Adult & Pediatric	Individuals with TBI (particularly severe TBI) may manifest difficulties in physical or neurological functioning including cranial or peripheral nerve damage, impairment in motor functioning, strength and/or coordination, or impairment in sensation. These impairments may contribute to difficulties in performing day-to-day activities safely and independently.
Post-concussive/TBI-Related Symptoms	Adult & Pediatric	TBI-related symptoms include somatic (e.g., headaches, visual disturbances), cognitive (e.g., attention and memory difficulties) and emotional (e.g., irritability) symptoms. They are commonly reported after TBI or concussion and may persist in some cases at all levels of TBI severity.
Psychiatric and Psychological Status	Adult & Pediatric	Psychological issues associated with TBI that affect outcomes include adjustment problems, personality changes (e.g., impulsivity), or mood disturbances. In the context of pediatric TBI, psychological/psychiatric variables are behavioral and emotional constructs related to positive or negative functioning. In addition, substance use disorders (SUD) are prevalent among persons with TBI and can have a substantial impact on long-term outcomes. These variables may be premorbid or posttraumatic in occurrence. Etiologies are both biologic and environmental.

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Recovery of Consciousness and Memory Recovery	Adult & Pediatric	Duration of coma, level of consciousness and rate of memory recovery contribute significantly to functional outcome, and play a key role in treatment and disposition planning.
Social Cognition	Pediatric	Social cognition refers to the cognitive processes necessary for successful social interaction. A growing body of literature has documented impairments in this domain after TBI, in some cases independent of other cognitive impairments.
Social Role Participation and Social Competence	Adult & Pediatric	Participation is defined by the World Health Organization (WHO) as “involvement in life situations”, and commonly includes engagement in endeavors within one’s community. TBI affects many areas of participation including work/ productive activity, recreation and leisure pursuits, and social/ family role function.
Sports-Related Studies	Adult & Pediatric	Additional measures specifically designed for and/or in widespread use in sports are included in this domain. If an instrument/measure is already categorized using another outcome domain it is NOT included in this domain to prevent listing instruments/measures multiple times within the same population.