



Planning for the Long-Term Needs of Survivors and Their Families

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Aging with Traumatic Brain Injury

- What happens to people with brain injury as they get older?
- Are people with Traumatic Brain Injury at greater risk for age-related complications than the general population?

Risk for Medical Complications That Increase with Age

Table 1: Prevalence of chronic conditions by age group, 2005

Condition Prevalence Rate (%)

	12–29	30–49	50–64	65–79	80+
Alzheimer's/other dementia	0.0	0.1	0.2	1.1	4.3
Has cataracts	0.2	0.5	3.8	19.6	30.0
Has glaucoma	0.0	0.4	1.8	5.7	9.5
Has heart disease	0.5	1.3	6.4	17.1	25.3
Has urinary incontinence	0.4	1.4	3.6	9.6	16.3
Has high blood pressure	1.3	7.3	26.0	43.2	47.2
Has diabetes	0.6	2.3	8.3	15.0	13.4
Has arthritis or rheumatism	1.9	9.3	27.3	44.3	51.6
Has thyroid condition	1.2	4.6	8.5	12.0	13.9

This tabulation was prepared in the Statistics Canada Research Data Centre at McMas





Institute of Medicine

- 1998 2 Acts of Congress
- PL 105-277, the Persian Gulf War Veterans Act
- PL 105-368, the Veterans Programs Enhancement Act.
- Gulf War and Health: Volume 7: Long-Term Consequences of Traumatic Brain Injury (2008)





Sufficient Evidence of a Causal Relationship

- Penetrating TBI and unprovoked seizures.
- Penetrating TBI and premature death.
- Severe or moderate TBI and unprovoked seizures.



Sufficient Evidence of an Association

- Penetrating TBI and long-term unemployment.
- Moderate or severe TBI and dementia of the Alzheimer type.
- Moderate or severe TBI and parkinsonism.
- Moderate or severe TBI and endocrine dysfunction, particularly hypopituitarism.
- Moderate or severe TBI and growth hormone insufficiency.
- Moderate to severe TBI and long-term adverse social-function outcomes, particularly unemployment and diminished social relationships.
- Moderate or severe TBI, in the subset of patients who are either admitted into or discharged from rehabilitation centers or receive disability support, and premature death.
- TBI and depression.
- TBI and aggressive behaviors.
- TBI and postconcussion symptoms (such as memory problems, dizziness, and irritability).





Limited/Suggestive Evidence of an Association

- Moderate or severe TBI and diabetes insipidus.
- Moderate or severe TBI and psychosis.
- Moderate TBI and neurocognitive deficits.
- Mild TBI resulting in loss of consciousness or amnesia and unprovoked seizures.
- Mild TBI and ocular and visual motor deterioration.
- Mild TBI with loss of consciousness and dementia of the Alzheimer type.
- Mild TBI with loss of consciousness and parkinsonism.
- Mild TBI and posttraumatic stress disorder in Gulf War military populations.
- TBI and decreased alcohol and drug use in the 1-3 years after injury.
- TBI and completed suicide.



Inadequate/Insufficient Evidence to Determine Whether an Association Exists

- Moderate or severe TBI and brain tumor.
- Mild, moderate, or severe TBI that is survived for 6 months or more and premature death.
- Mild TBI and neurocognitive deficits.
- Mild TBI (without loss of consciousness) and dementia of the Alzheimer type.
- Mild TBI and posttraumatic stress disorder in civilian populations.
- Mild TBI and long-term adverse social functioning, including unemployment, diminished social relationships, and decrease in the ability to live independently.
- TBI and mania or bipolar disorder.
- TBI and attempted suicide.
- TBI and multiple sclerosis.
- TBI and amyotrophic lateral sclerosis.



TBI Mortality Data

- TBI Decreases life expectancy by 4 years
- 49x more likely to die due to aspiration pneumonia
- 22x more likely to die from seizures
- 4x more likely to die from pneumonia
- 3x more likely to die from suicide
- 2.5 times more likely to die from digestive conditions
 - Harrison-Felix, et al 2004



TBI Mortality Data

- Expect to live 30-40 yrs beyond injury for those under 30 at time of injury
 - Felicitti (2008)



TBI Mortality Data

- Hi rates of unemployment
- Seizures
- On Medications
- Problems with obesity
- Smoking
- Hypertension
- Hi rates of chronic pain
- Lo rates of screening for potential medical problems
- Social isolation
- Loneliness
 - Trudel (2005)



Successful Coping

- Coping involves actively working on problems
- Using humor
- Engaging in enjoyable activities
 - Anson and Ponsford (2006)



Successful Aging

- Caloric Restriction
- Physical Activity
- Cognitive Intervention
- Stress Reduction
- Social Programs
 - Depp, Vahia, Jeste (2010)



Anticipating Changing Need for Support

- Social supports
 - Family tends to fill the gaps
- Housing
 - Supportive housing to allow for emancipation
- Vocational support
 - Available for updates or to support changes in workplace

Anticipating Changes in Support Structures

- Caretaker burnout
 - Caretaker isolation
 - Ongoing burden of care esp where there is disruptive behavior
 - Over time increase in rates of depression and anxiety
 - Increased use of medical services
- Aging caretakers
 - Caretakers' health issues limit ability to care for survivor
 - Survivor likely to out-live parents
- Marital distress
 - 50-70% of marriages end in divorce





Ongoing Medical Care

- TBI as a chronic medical condition
- Caretakers have to manage complex medical needs
- Keeping track of medical history
 - Electronic medical records
 - Copies of treatment records
- Coordinating care between specialist physicians
 - Psychiatry
 - Internal medicine
 - Neurology
 - Psychiatry
 - Neuropsychologist/psychologist
 - Gynecology
 - Endocrinologist
 - Gerontologist



Legal Issues

- Wills and Estate planning
- Preparing for advocate succession



Challenges for Public Policy and Advocacy

- Public insurance coverage for preventative care
- Funding for services
- Life-long case management following DMR model

