

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
<b>1992</b> Alexander, 1992	Descriptive; cross sectional	USA	23 MTBI (61% male)	Up to 5 years	GCS 13–15, LOC < 15 min, PTA < 24 hr	Y	Y	Y	Y	43% of participants reported dizziness, 30% depression, 87% headaches; 48% needed work compensation.
Englander, Hall, Stimpson, & Chaffin, 1992	Descriptive	USA	77 MTBI (68% male)	3 months	GCS 13–15, LOC (any), admitted < 3 days to hospital	Y PCS 3 months	Y PCS 3 months	Y Return to work	N/A	At 3 months, 26% reported symptoms, 88% returned to work (average at 8 weeks), and 16% desired to see doctors because of their symptoms.
Kay, Newman, Cavallo, Ezrachi, & Resnick, 1992	Descriptive; longitudinal (summarized from 4 studies; originals not published)	USA	808 mild head injury; number of MTBI not reported	1 week, 3 months, 6 months, and 1 year	GCS, LOC, and PTA not reported	Y PCS	Y PCS	Y Return to work	Y	At 3 months, 84% returned to work. At 1 year, 11% were unable to return to work and reported headache, fatigue, forgetfulness, and sleep disturbance. The authors concluded that MTBI was a subset of MHI. MHI patients might or might not have injuries to their brain, but MTBI patients must have injuries to the brain.
<b>1993</b> Alves, Macciocchi, & Barth, 1993	Interventional	USA	587 MTBI (67% male) were randomly assigned into 3 groups (routine, information, and information + reassurance)	3, 6, 12 months	GCS 13–15, LOC and PTA not reported, admitted to hospital < 2 days	Y PCS	Y PCS	N/A	N/A	50% of all participants reported headaches and 15% dizziness. There were no differences in the number of complaints among 3 groups, although the number of symptoms increased at 6 and 12 months, compared to 3 months.
Arcia & Gualtieri, 1993	Descriptive	USA	32 MTBI (39% male)	> 3 years	GCS and PTA not reported LOC < 1 hr	Y	Y	N/A	N/A	Participants who reported subjective complaints tended to have lower performance in all tests. Subjective complaints were reliable to objective test performance.

Note. This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

continued

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
<b>1994</b>										
Bohnen et al., 1994	Descriptive; comparison study with healthy subjects	USA	231 MTBI (66% male)	5 years	GCS not reported, LOC < 20 min, PTA < 60 min	Y	Y	N/A	N/A	Age, gender, and neurological and emotional complications were related to low cognitive performance, MTBI. At 1 to 5 years after injury, MTBI participants reported more severe complaints than control.
<b>1995</b>										
Bigler & Snyder, 1995	Descriptive	Europe	4 MTBI (50% male)	5–12 months	GCS > 13, LOC 0–brief, PTA 5–15 min	Y	Y	N/A	N/A	There was no difference in ventricular-to-brain measure among MTBI patients who demonstrated different neuropsychological scores.
Bohnen, Jolles, Twijnstra, Mellink, & Wijnen, 1995	Descriptive; comparison between MTBI	USA	22 MTBI (54% male), 11 with PCS, 11 w/o PCS	> 1 year	GCS 15, LOC < 15 min, PTA < 1 hr	Y	Y	N/A	N/A	MTBI and PCS reported lower in sustained attention, depression was correlated with PCS emotional scale; at 12 to 34 months after injury, both MTBI with or w/o PCS performed the same level of their neurobehaviors.
Cicerone & Kalmar, 1995	Descriptive	USA	50 MTBI (38% male)	3–52 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	N/A	N/A	LOC had an inverse relationship with severity of symptoms. Frequently reported symptoms were headache, sleep disturbance, numbness, hearing loss, change in taste or smell, anxiety, depression, problems in memory or concentration, dizziness, imbalance, and sensitivity to noise and light.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
<b>1996</b>										
Cattelani, Gugliotta, Maravita, & Mazzucchi, 1996	Descriptive	Italy	53 MTBI (62% male) with PCS	2–60 months	GCS > 13, LOC < 20 min, PTA < 7 hr, admit < 7 days	Y PCS	Y PCS	N/A	N/A	Longer PTA and LOC, as well as higher mean score of MMPI, were related to abnormal findings in radiology readings.
Cicerone et al., 1996	Descriptive; comparison between MTBI	USA	20 MTBI with PCS (10 in good outcome or resume work and 10 in poor outcome)	> 3 months	GCS not reported, LOC < 30 min, PTA < 24 hr	Y	Y	Y Return to work	N/A	Participants who received neurorehabilitation program with good outcome group reported improved cognitive functioning for 46%, PCS for 75%, improved attention, decreased cognitive dysfunction and severity. Other 10 participants received the same intervention but had poor outcomes.
Mittenberg, Tremont, Zielinski, Fichera, & Rayls, 1996	Experimental study (2 groups of MTBI)	USA	58 MTBI (69% male), 29 in control, 29 in experiment	6 months	GCS 13–15, PTA < 24 hr	Y	Y	N/A	N/A	Brief early psychological intervention could reduce PCS symptoms. Participants in intervention group reported fewer symptomatic days (0.5 vs. 1.3) and lower mean severity of symptoms.
<b>1997</b> No studies from 1997 met criteria										
<b>1998</b>										
Deb, Lyons, & Koutzoukis, 1998	Descriptive	USA	134 MTBI (68% male)	1 year	GCS > 13, LOC (any)	Y	Y	Y	Y	25% met the requirement for moderate disability. More than half (55.2%) reported PCS, and 17.2% met the assumption of psychotic problems.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
Ingebrigtsen, Waterloo, Marup-Jensen, Attner, & Romner, 1998	Descriptive	Norway & Sweden	100 MTBI (66% male)	3 months	GCS > 13, PTA: the authors considered all participants with PTA as also having LOC (<1, 1-5, 6-15, > 15 min)	Y	Y	Y Sick leave/ return to work	Y	Mean PCS was 3.1 symptoms; 40% reported 3 or more symptoms, and 62% reported at least 1 symptom at 3 months. Participants who were off work or who had higher PCS reported higher RPQ score. PTA, GCS, HISS, alcohol abuse, and duration of sick leave were not significantly correlated with PCS or RPQ.
<b>1999</b> Bell, Primeau, Sweet, & Lofland, 1999	Descriptive; comparison study (to migraine)	USA	20 MTBI (45% male) compared to migraines and chronic non-headache pain	> 1 year	GCS 13-15, LOC < 30 min	Y	Y	N/A	N/A	MTBI group reported higher depression and cognitive disability than participants in migraine and chronic nonheadache pain groups.
Ruffolo, Friedland, Dawson, Colantonio, & Lindsay, 1999	Descriptive	USA	50 MTBI (62% male)	6-9 months	Participants with GCS 13-15, LOC < 20 min, PTA < 24 hr were included, but there was no report about all three variables among the participants	Y	Y	Y Return to work	N/A	42% returned to work at 6-9 months after injury; 12% went to the same level, while 30% needed to modify their job. Social interaction, difficulty of job (decision making), and discharge to home were related to return to work, while cognitive impairment at 1 month after injury could not predict return to work.
<b>2000</b> Levine, Dawson, Boutet, Schwartz, & Stuss, 2000	Descriptive	USA	12 MTBI (58% male)	3-4 years	GCS 13-15, LOC not reported, PTA < 6 hr	Y	Y	N/A	N/A	At 6 hr after injury, 11 MTBI gained GOAT > 74, R-SAT negatively correlated with physical SIP (50%) and psychological SIP (34%). There was no correlation between CT results and R-SAT score.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260-272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
Ponsford et al., 2000	Descriptive; comparison study (to other minor trauma)	Australia	84 MTBI (62% male) compared to 53 other minor injuries	1 week and 3 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	N/A	N/A	WAIS-R score was very low at 1 week after TBI, but it was improved after 3 months, though 24% still suffered from at least 1 PCS. PTA did not correlate with PCS. Student status, female gender, history of head injury/neurological/psychological problem, and having motor-vehicle crashes were factors related to poor outcomes at 3 months.
<b>2001</b>										
Echemendia, Putukian, Mackin, Julian, & Shoss, 2001	Descriptive; comparison study to normal controls	USA	29 MTBI (90% male) compared to 20 control	2 hr, 2 days, 1 week, and 1 month	GCS, LOC, and PTA not reported	Y	Y	N/A	N/A	MTBI reported lower performance in all measures at 2 hr, improved from time to time, and reported the same performance as control at 1 month.
Haboubi, Long, Koshy, & Ward, 2001	Descriptive	UK	639 MTBI (74% male)	2 and 6 weeks	GCS 13–15, LOC < 15 min	Y	Y	Y Return to work	Y	Of 391 employed MTBI, 219 were unable to return to work at 2 weeks after the injury, 49 were still off sick after 6 weeks. Common PCS complaints were fatigue, headache, dizziness, irritability, sleep disturbance, poor concentration, and poor memory.
Hanna-Pladdy, Berry, Bennett, Phillips, & Gouvier, 2001	Descriptive; comparison study (among MTBI)	USA	44 MTBI (45% male), 22 with PCS, 22 without PCS	35% < 1 year, 65% 1–15 years	GCS 13–15, LOC < 11 hr (37.4% = none, 9% > 1 hr), PTA < 24 hr (57.5% = none)	Y	Y	N/A	N/A	PCS groups reported more subjective symptoms than non-PCS. MTBI reported more symptoms than non-MTBI. PCS + MTBI + stress reported higher PCS and lower performance in all cognitive functions.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
Hartlage, Durant-Wilson, & Patch, 2001	Descriptive; comparison study (to healthy participants)	USA	70 MTBI (45% male) with persistent neuro-behavioral problems compared to 40 normal control	6–12 months	GCS, PTA, and LOC not reported	Y	Y	N/A	N/A	Within 6 months after injury, 39 behaviors were reported by MTBI more than normal control. Of those 39, MTBI still reported 36 more behaviors than normal control at 12 months.
Lees-Haley, Fox, & Courtney, 2001	Descriptive; comparison study (to other trauma)	USA	24 MTBI (58% male) compared to participants with other injuries	Not reported	GCS 13–15, LOC < 60 min, PTA < 24 hr	Y	Y	N/A	N/A	MTBI reported more frequent short-term memory loss, reading problems, and partial LOC, but there was no difference in total number of items endorsed by both groups.
Levin et al., 2001	Descriptive; comparison study (to general trauma)	USA	60 MTBI (82% male), compared to 52 general trauma	> 3 months	GCS 13–15, LOC < 20 min	Y	Y	Y Community integration	Y	At 3 months, MTBI developed depression more than GT (11:3). Mean CES-D score of those MTBI was 22.14. MTBI also reported higher VASD and PTSD but lower social support and community reintegration. Among those MTBI with depression, social support and community reintegration score was also lower than for MTBI without depression.
McCauley, Boake, Levin, Contant, & Song, 2001	Descriptive; comparison study (to general trauma)	USA	95 MTBI (21% male), compared to 85 general trauma	3 months	GCS 13–15, LOC < 20 min	Y	Y	Y	Y	At 3 months, 3.30% of MTBI reported PCD compared to 15.3% among GT and 30.8% among moderate TBI. For past MDD, 7.9% MTBI met the criteria, while 21.4% met current MDD criteria (both MDD were lower than moderate TBI and GT). MTBI with PCD reported poorer GOS, higher anxiety, higher depression, and lower social support and social reintegration.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
McCullagh, Oucherlony, Protzner, Blair, & Feinstein, 2001	Descriptive; comparison study (among MTBI)	Canada	57 MTBI (56% male); comparison between GCS 15 and GCS 13–14	6 months	GCS 13–15, LOC < 20 min, PTA < 24 hr	Y	Y	Y Return to work	N/A	MTBI with GCS 13–14 had longer PTA duration and higher rate of CT abnormality than those with GCS 15. There was no significant difference of any neurobehavioral, somatic, or psychological outcomes between MTBI with GCS 15 and with GCS 13–14.
Santa Maria, Pinkston, Miller, & Gouvier, 2001	Descriptive	USA	50 MTBI with PCS (gender not reported)	3 months–10 years	GCS not reported, LOC < 20 min	Y	Y	N/A	N/A	MTBI was not associated with PCS reported. In low symptom group, gender was not a revealed difference, but MTBI had a higher symptom count than control. In high symptom group, males had more stable scores than females did, but MTBI was not different from control.
Trahan, Ross, & Trahan, 2001	Descriptive; compared depressed participants, normal controls	USA	40 MTBI (50% male)	Not reported	GCS 13–15, LOC < 30 min	Y	Y	N/A	N/A	Gender, race, and education were not associated with PCS in MTBI. PCS among MTBI and normal control was not different. PCS was highly related to depression, anxiety, and physical and cognitive symptoms.
<b>2002</b> McHugh, 2002	Descriptive	Canada	26 MTBI	1 week; 4 and 7 months	GCS 13–15, PTA < 24 hr	Y	Y	N/A	N/A	At 4 months, 19.2% of MTBI met PCS criteria. Neurological profiles of MTBI with PCS significantly differed from MTBI with PCS and matching normal control.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. *A review of the literature. Journal of Neuroscience Nursing, 39*(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
Cicerone & Azulay, 2002	Descriptive; comparison study (to healthy participants)	USA	32 MTBI (gender not reported) with PCS compared to 32 normal control	> 3 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	N/A	N/A	PCS group had more attention disturbance than control. There was no difference of any measures between participants > 12 months and < 12 months after injury. There was no difference in any measure between participants with different PTA and LOC.
De Kruijk et al., 2002	Descriptive	The Netherlands	79 MTBI (56% male)	Initial admission, 2 weeks, and 6 months	GCS 14–15, LOC < 15 min, PTA < 1 hr	Y	Y	N/A	N/A	Headaches 61%, dizziness 18%, neck pain 17%. Participants who reported headaches, dizziness, or pain at admission also reported those symptoms at 6 months after injury. Rate of full recovery increased from 50% to 78% when the initial symptoms decreased from 3 to 0.
Sparrow, 2002	Descriptive	USA	38 MTBI (45% male)	3 weeks and 3 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	N/A	N/A	There was no relationship between coping resources and PCS. Stress was a significant predictor for PCS.
Ponsford et al., 2002	Experimental design (2 groups of MTBI)	Australia	202 MTBI (gender not reported), 79 in experiment, 123 in control	5–7 days and 3 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	N/A	N/A	Experiment group received an information booklet about common symptoms, time course, and coping strategies. Experiment group reported less PCS at 3 months, and less frequency of symptoms listed in the Checklist-90-Revised score.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
Suhr & Gunstad, 2002	Descriptive; comparison study (between MTBI, to depressed and healthy participants)	USA	63 MTBI (38% male), 31 w/o and 32 with depression, compared to 25 depressed and 50 control	> 6 months	GCS 13–15, LOC < 30 min	Y	Y	N/A	N/A	Participants were young (undergraduate students, more female than male). Depression was associated with PCS, while MTBI was not. PCS reported for MTBI and control was not different.
<b>2003</b> Bryant, Moulds, Guthrie, & Nixon, 2003	Descriptive: MTBI with known PTSD	USA	24 MTBI with stress (33% male)	6 months	GCS 13–15, PTA < 24 hr	N/A	Y Depression, stress	N/A	N/A	After 5 weeks of intervention, 8% of participants in cognitive behavioral therapy group reported PTSD, compared to 58% of control group. Six months after injury, 17% of intervention group met PTSD criteria, compared to 58% of normal control group.
Emanuelson, Andersson, Bjorklund, & Stalhammar, 2003	Descriptive	Sweden	101 MTBI (65% male)	3 weeks, 3 months, and 1 year	GCS 13–15, LOC < 30 min	Y	Y	N/A	N/A	MTBI reported different score of SF-36 at 3 weeks and 3 months, but the scores were not different at 3 months and 1 year.
Evered, Ruff, Baldo, & Isomura, 2003	Descriptive; MTBI with known PCS	USA	129 MTBI with PCS (54% male)	> 3 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	N/A	N/A	63.5% had emotional pathologies that led to impairment following MTBI.
Rapoport, McCullagh, Streiner, & Feinstein, 2003a	Descriptive; comparison study (of depression between different age groups)	USA	210 MTBI (40% male); 30% were older than 60 years old	49 days	GCS 13–15, PTA < 24 hr	Y	Y	N/A	N/A	MTBI older than 60 years of age reported a lower rate of depression when compared to those who were younger.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
Rapoport, McCullagh, Streiner, & Feinstein, 2003b	Descriptive	USA	170 MTBI (gender not reported)	49 days	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	Y Return to work	N/A	15.3% met criteria for major depression. MTBI with depression reported more dysfunction, distress, and neurobehavioral disturbance. GOS and return to work were not different among those with and w/o depression.
Ruttan & Heinrichs, 2003	Descriptive	Canada	122 MTBI (38% male)	> 3 years	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y Depression	N/A	N/A	Depression and anxiety measured through MCMI-II; no correlation of depression and cognitive performance.
Smith-Seemiller, Fow, Kant, & Franzen, 2003	Descriptive; comparison study (to chronic pain)	USA	32 MTBI (59% male), compared to 63 chronic pain	> 1 year	GCS 13–15, PTA < 24 hr	Y	Y	N/A	N/A	There was no difference of the endorsed PCS symptoms between MTBI and chronic pain participants.
Savola & Hillbom, 2003	Descriptive	Europe	224 MTBI (76% male)	2–6 weeks and 8–30 months	GCS 13–15, LOC < 30 min	Y	Y	N/A	N/A	22% had PCS; 81% of those with PCS had at least 2 symptoms at 1 month after injury. Age was not associated with PCS (16–49 years). LOC, PTA, dizziness, and headache at emergency department were predictors of PCS.

*Note.* This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. A review of the literature. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

**Table 1.** Chronological Table of Studies: Adults with Mild Traumatic Brain Injury (MTBI) and Their Outcomes (*continued*)

Authors	Design	Location	Participants	Time Since Injury	MTBI Determinants	Outcomes				Results
						Health and Functioning	Psychological and Spiritual	Socioeconomic	Family	
2004 Kashluba et al., 2004	Descriptive; comparison study (to healthy participants)	Canada	110 MTBI (67% male) compared to 118 normal control	1 month and 3–4 months	GCS 13–15, LOC < 30 min, PTA < 24 hr	Y	Y	Y	Y	Compared symptoms at 1 and 3 months, and between MTBI and control group. Number of symptoms between MTBI and control was not significant, but MTBI rated symptoms as more severe. Symptoms decreased after 3 months.
Stranjalis et al., 2004	Descriptive	Greece	100 MTBI (gender not reported)	3 hr and 1 week	GCS 15, LOC and PTA not reported	Y S-100B level only	N/A	Y Return to work	N/A	32% of the participants had an elevated level of S-100B. Among those, 37.5% failed to return to work, compared to 4.7% of those who had a normal level of S-100B.

*Note.* CES-D = Center for Epidemiological Studies-Depression Scale; CT = computed tomography; GCS = Glasgow Coma Scale; GOAT = Galveston Orientation and Amnesia Test; GOS = Glasgow Outcome Scale; GT = general trauma; HISS = Head Injury Severity Score; LOC = loss of consciousness; MCMI-II = Millon Clinical Multiaxial Inventory II; MDD = major depressive disorder; MHI = mild head injury; MMPI = Minnesota Multiphasic Personality Inventory; PCS = postconcussion symptoms; PTA = posttraumatic amnesia; PTSD = posttraumatic stress disorder; RPQ = Rivermead Postconcussion Symptoms Questionnaire; R-SAT = Revised Strategy Application Test; S-100B = protein S-100B; SF-36 = Short Form 36 Health Survey; SIP = Sickness Impact Profile; VASD = Visual Analogue Scale of Depression; WAIS-R = Wechsler Adult Intelligence Scale-Revised; Y = yes.

This table is part of the following article: Petchprapai, N. & Winkelman, C. (2007). Mild traumatic brain injury: Determinants and subsequent quality of life. *Journal of Neuroscience Nursing*, 39(5), 260–272.

*continued*

## Table 1 References

- Alexander, M. P. (1992). Neuropsychiatric correlates of persistent postconcussive syndrome. *Journal of Head Trauma Rehabilitation, 7*(2), 60–69.
- Alves, W. M., Macciocchi, S. N., & Barth, J. T. (1993). Postconcussive symptoms after uncomplicated mild head injury. *Journal of Head Trauma Rehabilitation, 8*(3), 48–59.
- Arcia, E., & Gualtieri, C. T. (1993). Association between patient report of symptoms after mild head injury and neurobehavioral performance. *Brain Injury, 7*(6), 481–489.
- Bell, B. D., Primeau, M., Sweet, J. J., & Lofland, K. R. (1999). Neuropsychological functioning in migraine headache, non-headache chronic pain, and mild traumatic brain injury patients. *Archives of Clinical Neuropsychology, 14*(4), 389–399.
- Bigler, E. D., & Snyder, J. L. (1995). Neuropsychological outcome and quantitative neuroimaging in mild head injury. *Archives of Clinical Neuropsychology, 10*(2), 159–174.
- Bohnen, N., Van Zutphen, W., Twijnstra, A., Wijnen, G., Bongers, J., & Jolles, J. (1994). Late outcome of mild head injury: Results from a controlled postal survey. *Brain Injury, 8*(8), 701–708.
- Bohnen, N. I., Jolles, J., Twijnstra, A., Mellink, R., & Wijnen, G. (1995). Late neurobehavioural symptoms after mild head injury. *Brain Injury, 9*(1), 27–33.
- Bryant, R. A., Moulds, M., Guthrie, R., & Nixon, R. D. (2003). Treating acute stress disorder following mild traumatic brain injury. *American Journal of Psychiatry, 160*(3), 585–587.
- Cattelan, R., Gugliotta, M., Maravita, A., & Mazzucchi, A. (1996). Post-concussive syndrome: Paraclinical signs, subjective symptoms, cognitive functions and MMPI profiles. *Brain Injury, 10*(3), 187–195.
- Cicerone, K. D., & Azulay, J. (2002). Diagnostic utility of attention measures in postconcussion syndrome. *Clinical Neuropsychology, 16*(3), 280–289.
- Cicerone, K. D., & Kalmar, K. (1995). Persistent postconcussion syndrome: The structure of subjective complaints after mild traumatic brain injury. *Journal of Head Trauma Rehabilitation, 10*(3), 1–17.
- Cicerone, K. D., Smith, L. C., Ellmo, W., Mangel, H. R., Nelson, P., Chase, R. F., et al. (1996). Neuropsychological rehabilitation of mild traumatic brain injury. *Brain Injury, 10*(4), 277–286.
- De Kruijk, J. R., Leffers, P., Menheere, P. P., Meerhoff, S., Rutten, J., & Twijnstra, A. (2002). Prediction of post-traumatic complaints after mild traumatic brain injury: Early symptoms and biochemical markers. *Journal of Neurology, Neurosurgery, and Psychiatry, 73*(6), 727–732.
- Deb, S., Lyons, I., & Koutzoukis, C. (1998). Neuropsychiatric sequelae one year after a minor head injury. *Journal of Neurology, Neurosurgery, and Psychiatry, 65*(6), 899–902.
- Echemendia, R. J., Putukian, M., Mackin, R. S., Julian, L., & Shoss, N. (2001). Neuropsychological test performance prior to and following sports-related mild traumatic brain injury. *Clinical Journal of Sport Medicine, 11*(1), 23–31.
- Emanuelson, I., Andersson, H. E., Bjorklund, R., & Stalhammar, D. (2003). Quality of life and post-concussion symptoms in adults after mild traumatic brain injury: A population-based study in western Sweden. *Acta Neurologica Scandinavica, 108*, 332–338.
- Englander, J., Hall, K., Stimpson, T., & Chaffin, S. (1992). Mild traumatic brain injury in an insured population: Subjective complaints and return to employment. *Brain Injury, 6*(2), 161–166.
- Evered, L., Ruff, R., Baldo, J., & Isomura, A. (2003). Emotional risk factors and postconcussional disorder. *Assessment, 10*(4), 420–427.
- Haboubi, N. H., Long, J., Koshy, M., & Ward, A. B. (2001). Short-term sequelae of minor head injury (6 years experience of minor head injury clinic). *Disability and Rehabilitation, 23*(14), 635–638.
- Hanna-Pladdy, B., Berry, Z. M., Bennett, T., Phillips, H. L., & Gouvier, W. D. (2001). Stress as a diagnostic challenge for post-concussive symptoms: Sequelae of mild traumatic brain injury or physiological stress response. *Clinical Neuropsychology, 15*(3), 289–304.
- Hartlage, L. C., Durant-Wilson, D., & Patch, P. C. (2001). Persistent neurobehavioral problems following mild traumatic brain injury. *Archives of Clinical Neuropsychology, 16*, 561–570.
- Ingebrigtsen, T., Waterloo, K., Marup-Jensen, S., Attner, E., & Romner, B. (1998). Quantification of post-concussion symptoms 3 months after minor head injury in 100 consecutive patients. *Journal of Neurology, 245*(9), 609–612.
- Kashluba, S., Paniak, C., Blake, T., Reynolds, S., Toller-Lobe, G., & Nagy, J. (2004). A longitudinal, controlled study of patient complaints following treated mild traumatic brain injury. *Archives of Clinical Neuropsychology, 19*(6), 805–816.
- Kay, T., Newman, B., Cavallo, M., Ezrachi, O., & Resnick, M. (1992). Toward a neuropsychological model of functional disability after mild traumatic brain injury. *Neuropsychology, 6*(4), 371–384.
- Lees-Haley, P. R., Fox, D. D., & Courtney, J. C. (2001). A comparison of complaints by mild brain injury claimants and other claimants describing subjective experiences immediately following their injury. *Archives of Clinical Neuropsychology, 16*(7), 689–695.
- Levin, H. S., Brown, S. A., Song, J. X., McCauley, S. R., Boake, C., Contant, C. F., et al. (2001). Depression and posttraumatic stress disorder at three months after mild to moderate traumatic brain injury. *Journal of Clinical and Experimental Neuropsychology, 23*(6), 754–769.
- Levine, B., Dawson, D., Boutet, I., Schwartz, M. L., & Stuss, D. T. (2000). Assessment of strategic self-regulation in traumatic brain injury: Its relationship to injury severity and psychosocial outcome. *Neuropsychology, 14*(4), 491–500.
- McCauley, S. R., Boake, C., Levin, H. S., Contant, C. F., & Song, J. X. (2001). Postconcussional disorder following mild to moderate traumatic brain injury: Anxiety, depression, and social support as risk factors and comorbidities. *Journal of Clinical and Experimental Neuropsychology, 23*(6), 792–808.
- McCullagh, S., Oucherlony, D., Protzner, A., Blair, N., & Feinstein, A. (2001). Prediction of neuropsychiatric outcome following mild trauma brain injury: An examination of the Glasgow Coma Scale. *Brain Injury, 15*(6), 489–497.
- McHugh, T. S. (2002). Natural history of cognitive, affective, and physical symptoms of postconcussion syndrome following mild traumatic brain injury. *Masters Abstracts International, 42* (02), 687 (UMI No. MQ82543).
- Mittenberg, W., Tremont, G., Zielinski, R. E., Fichera, S., & Rayls, K. R. (1996). Cognitive-behavior prevention of postconcussion syndrome. *Archives of Clinical Neuropsychology, 11*(2), 139–145.
- Ponsford, J., Willmott, C., Rothwell, A., Cameron, P., Kelly, A. M., Nelms, R., et al. (2002). Impact of early intervention on outcome following mild head injury in adults. *Journal of Neurology, Neurosurgery and Psychiatry, 73*(3), 330–332.
- Ponsford, J., Willmott, C., Rothwell, A., Cameron, P., Kelly, A. M., Nelms, R., et al. (2000). Factors influencing outcome following mild traumatic brain injury in adults. *Journal of International Neuropsychological Society, 6*(5), 568–579.
- Rapoport, M. J., McCullagh, S., Streiner, D., & Feinstein, A. (2003a). Age and major depression after mild traumatic brain injury. *American Journal of Geriatric Psychiatry, 11*(3), 365–369.
- Rapoport, M. J., McCullagh, S., Streiner, D., & Feinstein, A. (2003b). The clinical significance of major depression following mild traumatic brain injury. *Psychosomatics, 44*(1), 31–37.
- Ruffolo, C. F., Friedland, J. F., Dawson, D. R., Colantonio, A., & Lindsay, P. H. (1999). Mild traumatic brain injury from motor vehicle accidents: Factors associated with return to work. *Archives of Physical Medicine and Rehabilitation, 80*(4), 392–398.
- Ruttan, L. A., & Heinrichs, R. W. (2003). Depression and neuro-cognitive functioning in mild traumatic brain injury patients referred for assessment. *Journal of Clinical and Experimental Neuropsychology, 25*(3), 407–419.
- Santa Maria, M. P., Pinkston, J. B., Miller, S. R., & Gouvier, W. D. (2001). Stability of postconcussion symptomatology differs between high and low responders and by gender but not by mild head injury status. *Archives of Clinical Neuropsychology, 16*(2), 133–140.
- Savola, O., & Hillbom, M. (2003). Early predictors of post-concussion symptoms in patients with mild head injury. *European Journal of Neurology, 10*(2), 175–181.
- Smith-Seemiller, L., Fow, N. R., Kant, R., & Franzen, M. D. (2003). Presence of post-concussion syndrome symptoms in patients with chronic pain vs. mild traumatic brain injury. *Brain Injury, 17*(3), 199–206.
- Sparrow, B. J. (2002). Coping resources and the development of persistent postconcussional syndrome after a mild traumatic brain injury. *Dissertation Abstracts International, 64*(09), 4669 (UMI No. 3106598).
- Stranjalis, G., Korfiatis, S., Papapetrou, C., Kouyialis, A., Boviatisis, E., Psachoulia, C., et al. (2004). Elevated serum S-100B protein as a predictor of failure to short-term return to work or activities after mild head injury. *Journal of Neurotrauma, 21*(8), 1070–1075.
- Suhr, J. A., & Gunstad, J. (2002). “Diagnosis Threat”: The effect of negative expectations on cognitive performance in head injury. *Journal of Clinical and Experimental Neuropsychology, 24*(4), 448–457.
- Trahan, D. E., Ross, C. E., & Trahan, S. L. (2001). Relationships among postconcussional-type symptoms, depression, and anxiety in neurologically normal young adults and victims of mild brain injury. *Archives of Clinical Neuropsychology, 16*(5), 435–445.