

Education, support services, and community resources for patients with mild traumatic brain injury

British Columbia has a great many resources to assist patients with mild traumatic brain injury; they are collected here for your easy reference.

ABSTRACT: Physicians face specific challenges with patients who have mild traumatic brain injuries. While contemporary research emphasizes the importance of early patient education and suggests risk factors that predispose some individuals to prolonged or incomplete recovery, a diagnosis may not be made until well after the time of injury. Even when the need for treatment is recognized, funding for treatment may be hard to obtain. Information about mild traumatic brain injury, including contact information for community resources and support services and the names of useful books, articles, and web sites can assist physicians in the treatment of these patients.

The majority of people with mild traumatic brain injury (mTBI) have some postconcussion symptoms during the first month postinjury.¹ Most brain-function recovery takes place within 6 months and little further improvement is likely after a year.² “Sequelae include problems in cognition, behavior, the constellation of signs and symptoms that make up the postconcussive syndrome, other psychopathology and a surprisingly high rate of disability.”³ Symptoms may worsen over time, and the person may become increasingly disabled.⁴ People with incomplete recovery 3 to 6 months postinjury—Ruff’s “miserable minority”—are herein referred to less pejoratively as patients with CPCS: continuing post-concussion symptoms.

Physicians can help their mTBI patients by passing on information about community resources and support services (see “Support services” on page 503 and “Community resources” on page 504). Physicians can also help by knowing about the full range of symptoms and the many problems that can stem from an mTBI.⁵ Patients with stressful lives, difficult

jobs, high self-expectations, comorbid complaints, premorbid health problems, or a history of brain injury are at risk for prolonged or incomplete recovery, as are women, patients over age 40, and those engaged in the stress of litigation. While patients injured in auto accidents, at work, or as victims of crime may get funding for treatment for mTBI, this is unlikely to happen unless the physician makes it clear in initial medical reports that a brain injury is involved and continues to report postconcussion symptoms even when severe comorbid problems exist.

Patients seen in the ER after a serious fall or an auto accident, as well as anyone with a known or suspected brain injury, should be given a hospital “head sheet”⁶⁻⁸ before discharge that describes signs of acute distress to

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watch out for and the physical, cognitive, and behavioral changes that might occur.

Physicians should assume that anyone hospitalized after a major-impact accident or with face or head trauma may have a brain injury, even when this is not diagnosed. This means taking precautions to prevent secondary brain damage, soliciting family reporting of abnormal behavior, and investigating for posttraumatic amnesia. Unless evidence suggestive of brain injury is noted in a patient's early clinical records, the patient may not receive needed treatment.

Patient education

Early patient education on the effects of mTBI is essential. Written material on mTBI should be provided and helpful web sites recommended (see "Information for physicians and patients" on page 508). Physicians who are less familiar with mTBI might want to send their patients to a brain-injury-oriented psychologist for a brief educational session. Patients should be told about common mTBI symptoms,⁵ be advised to take it easy for a while, and be warned that some problems may persist for a few weeks and others may only become apparent once normal activities are resumed.⁹ Patients should also be advised to resume activities gradually, not drive, not exercise, and not make important decisions until they are symptom-free. They should see a physician if they continue to have somatic, cognitive, behavioral, or psychological symptoms. At the same time, they should be reassured that most people recover completely from mTBI and they probably will too. Note that the term "brain injury" may increase patient anxiety, making the term "concussion" preferable when speaking to patients and their families (oral communication, U. Wild, neuropsychologist, 29 Au-

gust 2005; written communication, J. Stanger, director, Fraser Health Acquired Brain Injury Program, 16 March 2006).

Since mild traumatic brain injury is associated with diminished reaction time and risk of secondary injury, written instructions should be given regarding when a patient can safely return to regular or high-risk activities. No child should return to sports activities until at least a week after symptoms disappear.^{10,11}

When a patient's symptoms persist beyond a week or two, or are disturbing to the patient, the physician can suggest some simple coping strategies such as:

- Resting when a headache starts.
- Taking naps when tired.
- Minimizing position changes if these cause vertigo.
- Avoiding noisy or busy environments, stressful activities, and anything requiring concentration.
- Allowing more time to complete tasks and avoiding situations where there is pressure to do things quickly.
- Walking away from situations when irritable or emotional.
- Asking people to speak slowly, explain things simply, or write down anything important.
- Taking a break when unable to understand something and returning to the task at a predetermined time when rested, alert, and operating at maximum efficiency.
- Spending some quiet time alone after work or school to relax, re-energize, and shift focus before re-joining the family.

The physician can also suggest (and an occupational therapist can help the patient implement) compensatory techniques such as:

- Structuring daily life, building in routines, and scheduling breaks and rest times.
- Using a daily planner, calendar, note-

book, audio recording equipment, kitchen timer, watch alarm, and self-adhesive notes to deal with forgetfulness.

- Breaking complex tasks into manageable components.
- Writing out step-by-step procedures for any potentially confusing activity, from preparing a meal to crossing the street.
- Making to-do lists and ticking off what is done.

If symptoms continue, the patient may need to limit activities, reduce his or her workload, work only part-time, or stop working until the cognitive deficits improve. Both skilled and unskilled work may be beyond the patient's current capabilities: "TBI survivors tend to have less tolerance for tedious work than other people; they frustrate more easily; and they have a hard time following directions or functioning in busy environments. Moreover, they can't always monitor what they're doing well enough to know whether their work is progressing. They may also react negatively to advice or criticism. Emotional outbursts and altered social skills, in fact, are said to cause more job dismissals than long-term cognitive deficits."¹² Once a person with a brain injury is fired, he or she is unlikely to work again.¹²

Patients should be assured early on that they are not imagining their problems. They should also be told that despite cognitive or functional losses their level of intelligence has not changed. When a patient's deficits continue over time, it may become harder for the patient to dismiss these as "only temporary," and anger, anxiety, and depression may complicate the clinical picture. Meanwhile, the patient's interpersonal relationships may deteriorate as family, friends, and co-workers become less tolerant of changes in the patient's personality

and behavior, losing hope that the patient will eventually return to his or her preinjury state.

Input from family members can provide the physician with insight into the patient's behavioral and emotional problems. Referral to a psychiatrist or psychologist who is knowledgeable about traumatic brain injury may be warranted, especially when there is evidence of anxiety, depression, adjustment problems, loss of self-esteem, inappropriate behavior, mood swings, emotional outbursts, irritability, anger, apathy, inability to deal with frustration or stress, relationship problems, substance abuse, or work- and school-related problems.

Physicians can offer counseling services or refer patients for counseling that might include:

- Educating the patient about anger management.
- Teaching simple relaxation techniques.
- Providing emotional support.
- Examining stressors and suggesting how to deal with them.
- Encouraging daily physical exercise to increase self-confidence.
- Helping with recognition of deficits and ways to deal with these.
- Addressing self-esteem, relationship, and intimacy issues (including sexual dysfunction, if any), and work-related problems.

Pain issues and sleep problems may have to be addressed as well. Since patients with traumatic brain injuries are "more likely to experience detrimental side effects from [psychopharmacological] drugs than people without TBI, additional caution should be used in prescribing and monitoring psychopharmacologic treatment."¹³ The physician should confer with a psychiatrist with an interest in brain injury before prescribing antidepressants, anti-anxiety medication, sleep aids, or medication for behav-

ioral management or cognitive enhancement.

Support services

Unfortunately, too many people with CPCS slip through the cracks in the health care system. Without family or third-party funding support, they may become substance abusers or violent offenders.^{14,15} The criminal justice system then becomes involved as a health issue turns into a societal one (written communication, J. Simpson, former brain injury case manager, now consultant at Fraser Valley federal prisons, 28 July 2005). Even when patients do have support, treatment for mTBI can still be delayed, resulting in a prolonged period of rehabilitation.¹⁶ Physicians can help patients receive prompt treatment by referring them to regional health authority brain injury programs and health care professionals familiar with mTBI, including most neuropsychologists and some psychiatrists, clinical psychologists, and occupational therapists.

Lawyers who specialize in brain injury (often called "neurolawyers") are usually very knowledgeable about treatment options, local brain-injury-oriented health care providers, and community resources. Most will gladly share this information with physicians and patients, regardless of whether the patient requires a lawyer's services. In many cases, a neuro-lawyer can access funding for treatment that might not otherwise be available for patients with mild brain injuries sustained in auto or work accidents. The names of neurolawyers can be found in *Headline* magazine (phone 604 274-1251 for a free copy).

When a patient with mTBI is not in an early intervention program (see "Brain injury programs in BC," page 504), a neuropsychological assessment may be needed. A neuropsychologist can assess the patient's deficits,

provide patient education during a brief preliminary screening session, and suggest how to access information and services. Early screening of this kind can help identify patients at high risk for CPCS.

Psychological intervention

Psychological intervention should be strongly recommended for patients with CPCS (a third-party insurer may cover the cost even if the request is initially refused). Brain injury significantly increases the risk of major depression and is a risk factor in anxiety disorders and other psychiatric conditions. "An estimated 18% of patients with mTBI develop a psychiatric illness by one year postinjury."¹⁷ Early diagnosis and treatment of depression may improve psychosocial functioning, psychological distress, postconcussive symptoms, and neurobehavioral difficulties, improving the outcome and quality of life for these patients.¹⁸ Regrettably, referral to a psychologist may not happen until severe psychological problems have arisen^{19,20} or there has been a downward spiralling for many years (oral communication, C. Jung, psychologist, Chuck Jung & Associates, 29 August 2005). Many BC neuropsychologists and some clinical psychologists treat patients with mTBI.

While traditional forms of psychotherapy may be beneficial for patients with premorbid psychological problems, a more pragmatic approach might be needed for patients with persistent problems stemming primarily from the brain injury itself.²¹ A cognitive therapy program that includes psychotherapy, occupational and vocation interventions, and adaptive strategies training may be appropriate.²² "Given that mTBI patients typically suffer from attentional problems, weakened anterograde memories and difficulties in executive functioning, it makes

sense to provide clinical assistance in these specific areas... Cognitive retraining has been shown to be effective, particularly in high-level patients... [However,] if one expects to return to preinjury functioning levels at the end of cognitive treatment... cognitive remediation may be set up for failure.²¹ Patients with CPCS often need to recognize and accept the changes in themselves before they can learn strategies to compensate for their deficits or develop realistic new goals. Some patients find group psychotherapy helps them in this regard.²¹ Others benefit from seeing a clinical psychologist with an interest in mTBI.

A clinical psychologist can treat the behavioral problems and personality changes that may arise after a brain injury and become more pronounced over time.²³ Persistent behavioral problems after a brain injury (loss of emotional control, poor judgment, inappropriate sexual behavior, aggression, disordered speech, an inability to initiate or complete tasks or make decisions) may stem from cognitive impairments.²³ By contrast, some personality changes (lack of self-reliance, reduced sensitivity to others, increased irritability, rapid mood changes, anxiety, depression) may stem from the patient's reactions to his or her deficits. Neuropsychologists are more likely to focus on cognitive remediation and compensatory strategies than clinical psychologists, who may refer patients needing coping and compensatory strategies to brain-injury-oriented occupational therapists.

The treating psychologist may address chronic pain issues, posttraumatic stress disorder, anxiety, depression, ongoing stressors in the patient's life, interpersonal relationships, psychosocial adjustment, stress management, and anger management. Some patients may also need grief counseling to mourn what they've lost so they

can begin to move toward goals that are more realistic for them now.

Since cognitive, behavioral, and personality changes can place a significant burden on a patient's family, the treating psychologist may have to deal extensively with family issues. For some patients, marital and family therapy may be warranted. While a supportive family is often cited as being crucial for a successful outcome with mTBI patients,²³ the likelihood of divorce or separation increases with time. Five to six years postinjury has been found to be a "watershed for relationship breakdown,"²⁴ as negative perceptions of the brain-injured person become more entrenched. The severity of a brain injury does not relate strongly to the long-term stress experienced by family members,²⁴ a disproportionate number of whom develop depression, anxiety, and psychosomatic disorders.²³

Occupational therapy

Occupational therapy assessment and treatment may be appropriate for anyone with ongoing symptoms 3 months postinjury (see "Rehabilitation resources in BC," page 506). An occupational therapist or related service provider might:

- Help the patient set realistic goals and move toward them.
- Coach the patient about life skills, time management, compensatory techniques, and coping strategies.
- Advise the patient about structuring daily activities and establishing routines.
- Develop protocols to deal with issues that repeatedly create problems.
- Identify problematic behaviors and strategies to change these.
- Provide emotional, psychosocial, and cognitive-behavioral support.

- Oversee social and community reintegration.
- Suggest modifications to home, work, or school environments to reduce distractions.
- Design a graduated return-to-work program.
- Provide job coaching.
- Meet with employers or prospective employers.
- Supervise the patient's progress.

Other therapy

Patients with CPCS for 6 or more months postinjury may also need vocational counseling and speech-language therapy, as well as contact with a brain injury support group (see "Rehabilitation resources in BC," page 506 and "Regional resources in BC," page 507). As well, all physiatrists are trained in brain injury rehabilitation. While they don't all have an interest in mTBI, they should know a physiatrist who does.

Memory improvement courses^{25,26} and books can also be helpful for people with mTBI, as can adaptive strategies developed for patients with Alzheimer disease.

Community resources

Resources for mTBI patients in British Columbia include programs to assess and treat brain injury, services to assist with rehabilitation, and a variety of other support services provided by regional health authorities, associations, and societies.

Brain injury programs in BC (in alphabetical order)

ABI Outreach Services (604 603-7592) is a contracted service provider for the Community Brain Injury Program (see below). While most people referred here are addicts, alcoholics, or homeless, anyone with CPCS who has trouble functioning in the world can be referred. Referrals may be made

by physicians, family or community members, and patients. Services may involve locating housing and advocating with the BC Ministry of Employment and Income Assistance. The program is based in Vancouver's Downtown Eastside but is open to people elsewhere as well. The program coordinator will travel to other locations in the Lower Mainland as needed. ABI Outreach has gotten many people with brain injuries off the streets and functioning again. Phone for referrals in other areas.

The **Chronic Disease Self-Management Program** (University of Victoria—Centre on Aging, Head Office in Ladner, 866 902-3767, www.coag.uvic.ca/cdsmtp/) runs a free 6-week patient education course (Living a Healthy Life with Chronic Conditions) throughout the year at multiple locations in each health region. People with CPCS are welcome.

Community Brain Injury Program (Vancouver Coastal Health/GF Strong Rehabilitation Centre, 604 737-6335) accepts patients with ongoing problems. Referrals may be made by physicians, family members, and patients. The patient's needs are matched with contracted service providers and referrals are made. The life skills coaching provided to someone with mTBI may include the teaching of memory aids and time management skills, and helping the patient learn to organize and structure his or her life. Patients with severe CPCS may be referred to Cheshire Homes Society (604 540-0686, www.cheshirehomes.ca) or a similar facility that provides residential rehabilitation services to people with brain injuries. A patient with Part 7 funding from ICBC (see below) will only be accepted in the program when there is less than \$5000 in that patient's Part 7 account. Someone with an open tort claim can apply for the program, but service provider

costs may have to be repaid.

Community Brain Injury Program for Children and Youth (604/877 451-5511, www.cbip.bc.ca) provides publicly funded rehabilitation and support services to people under 19 who sustained a brain injury in the past year and do not have third-party funding. When a referral is made more than 1 year postinjury—as often happens with mTBI—a neuropsychological assessment may be done and advice given on community resources.

Early Response Brain Injury Service or ERBIS (Vancouver Coastal Health/GF Strong Rehabilitation Centre, 604 714-4186) is an early intervention program for people with mTBI. When an mTBI diagnosis is made in hospital, ERBIS should be informed and the patient contacted. Physician referrals can also be made. Educating patients, identifying risk factors, and suggesting coping strategies are usually done by phone. When mTBI symptoms significantly affect someone's life or recovery may be prolonged, the person may meet with the ERBIS coordinator at GF Strong. A list of community or GF Strong therapists may be given to anyone requiring treatment (or to a third-party funder), and the coordinator may consult with psychiatrists and others at GF Strong, or with other community resources, on a patient's behalf.

Fraser Health Acquired Brain Injury Program (604 933-2050) is open to people with mTBI who have limited (or no) third-party funding. The program provides short-term rehabilitation, neuropsychological assessments, and community support services. Referrals by patients themselves are allowed, but a diagnosis of acquired brain injury must be physician-verified or medically documented.

Fraser Health Concussion Clinic (604 933-2050) is a new early inter-

vention program for people 16 years or older in the Fraser Health region with mTBI. A goal of the program is to have every patient in the region with known or suspected mTBI referred to the clinic. This includes patients seen at any Fraser Health emergency room, local clinic, or physician's office. The program is based in Coquitlam but serves the entire Fraser Health region. Referrals by physicians, hospitals, third-party funders, family or community members, and patients themselves are allowed, and there are no funding restrictions for the initial education and support done by phone. Ideally, patients should be referred to the clinic within 4 weeks of injury. While the initial patient contact is by phone, patients are then assessed and treated at the clinic as warranted. When long-term services are required, a patient may be referred to Fraser Health Acquired Brain Injury Program (see above).

GF Strong Acquired Brain Injury Program (Vancouver Coastal Health/GF Strong Rehabilitation Centre, 604 734-1313, www.vch.ca/gfstrong/programs/abi) occasionally accepts patients with mTBI. Erna Burda is in charge of admissions and decides which GF Strong program a patient should be referred to. Physicians can contact her directly at 604 737-6272.

Gorge Road Hospital Acquired Brain Injury Program (250 995-4700) is open to adults with mTBI who remain symptomatic 3 to 6 months (or more) postinjury. A psychiatrist determines the rehabilitation provided.

Health Authority programs are also available in the Interior, on Vancouver Island, and in Northern BC. Interior Health's Brain Injury Services (250 870-4662) tries to address the needs of people with mild traumatic brain injuries. An mTBI pilot program

should start in late 2006 and will be modeled on the early response programs at GF Strong and Fraser Health. For information on the Vancouver Island Health Authority Brain Injury Program, contact Judith Armstrong (250 370-8455). For the Northern Health Authority Acquired Brain Injury Program, contact Jana Pirsell (250 565-7473).

Hospital psychiatry departments often have staff with an interest in brain injury or know of neuropsychiatrists with an interest in mTBI.

ICBC (Insurance Corporation of BC) does not have a dedicated brain-injury rehabilitation program for people with mTBI, but some treatment may be covered under Part 7. Once a patient reports a mild traumatic brain injury to his or her adjuster, the family physician is contacted. ICBC will accept a diagnosis of mTBI only when a physician can provide objective evidence (loss of consciousness, focal neurological deficits, MRI report) to support it. However, ICBC may cover treatment recommended by the Fraser Health Concussion Clinic (see above), ERBIS (see above), or a service provider they routinely refer people to. ICBC's Head Injury Department handles all mTBI cases when this is the only injury sustained, but it does not provide rehabilitation. It only deals with the litigation of tort claims (written communication, G. Lee, HID manager, 29 August 2005).

Self-Management Program for Chronic Mild Traumatic Brain Injury (Vancouver Coastal Health/GF Strong Rehabilitation Centre, 604 734-1313, ext 2126) requires a physician referral. Patients must be at least 6 months postinjury. The goal of the 10-session program is to improve functional performance and increase performance satisfaction, not return the patient to a pre-morbid functioning level. The patient is helped to accept

his or her level of functioning and given the skills to move on. Adaptive and compensatory strategies are taught and cognitive-behavioral approaches are used. All sessions except the first (which is done at GF Strong) and the last (which is done by phone) take place in the patient's home or work environment. Patients are encouraged to take part in the Chronic Disease Self-Management Program (see above) after completing this.

Semiahmoo House Society's Acquired Brain Injury Program (604 535-2820) has a drop-in group in Newton and a day program in South Surrey that requires Fraser Health referral. While people with mTBI may initially feel they don't fit in or their problems aren't severe enough, a patient with little or no family support who is not working (or the physician feels shouldn't be working) may find the life skills training and other services helpful. The patient will also be directed to an appropriate support group.

Spectrum Society Acquired Brain Injury Program (604 323-1433) is a community-based program funded by the Ministry of Health. Most referrals come from Vancouver Coastal Health or Fraser Health. Physicians can also refer patients with third-party funding or financial support from their families. A community support worker may be assigned to someone with CPCS who lives at home and needs help with safety issues or regaining independence.

Sunny Hill Hospital Brain Injury Team (604 453-8300) works predominantly with children under 12 who have moderate-to-severe brain injuries, but occasionally offers support services to children with mTBI. A physician with a patient under 12 who has severe CPCS can contact Louisa Pulfrey (ext. 8416) for information.

UBC Neuropsychiatry Clinic (604 822-7066) only sees patients

with mTBI who are 6 or more months postinjury. No one involved in litigation is seen. While treatment is psychopharmacology-based, extensive psychotherapy may be provided when warranted. In some situations, patients may be referred elsewhere for counseling.

WorkSafeBC's Brain Injury Program is being expanded throughout the province and currently operates in the Lower Mainland. The focus is on early recognition of mTBI and early education. This may be coordinated with a graduated return-to-work program that begins as early as 2 weeks postinjury. A neuropsychological assessment may be done early on when symptoms continue, and specific treatment may be recommended if the person is not ready to return to work. The patient's treating physician can make referrals to specialists through the Visiting Specialist Clinic at WorkSafeBC (general inquiries, 604 232-7787). Assessment and treatment is through community-based facilities throughout the Lower Mainland.

Rehabilitation resources in BC Back in Motion (604 273-7600) in Richmond recently started an early intervention program for people with mTBI. While only WorkSafeBC currently refers patients, the program coordinators hope that physicians will start referring patients as well.

Columbia Health Centre (604 687-5911) in Vancouver has a Concussion Clinic for people who are at least 6 months postinjury. The centre's Head Injury Assessment and Treatment Services (HATS) program is appropriate for patients with CPCS. Both programs are run from a Vancouver office and are open to people throughout the province on a fee-for-service basis. Referrals by physicians and patients are welcome. An attempt to find funding sources will be made

when needed. When no funding can be found, program fees may be reduced. Contact Theresa Wong at theresa.wong@columbiahealth.ca.

Columbia Speech-Language Services (604 875-9100) works with people who have communication disorders stemming from a brain injury. This includes patients with mTBI who have word-finding problems or exhibit rambling, disorganized, or perseverative speech; have difficulty understanding what they hear or what they read; and have other cognitive communication impairments.

Community Therapists or CTI (604 681-9293, www.communitytherapists.com) provides occupational therapy services throughout the province. While CTI no longer works exclusively with brain injury survivors, most of their occupational therapists (OTs) do brain injury rehabilitation. Their brain injury programs are designed for people with moderate-to-severe brain injuries, but physicians can refer patients to them for education on mTBI, functional assessments, and at-home help with safety issues, personal care, problem solving, and medication management. CTI will also link people with mTBI with local community resources. They can usually find third-party funding for someone who may not have this (oral communication, L. Hirsekorn, director of operations, CTI, 15 March 2006). Contact the service coordinator (ext. 138) for more information.

Parley Services (604 738-9149, www.parleyservices.com) offers support management services throughout BC for people with acquired brain injuries and other neuropsychological impairments. The services offered focus on behavioral problems and psychosocial needs. The goal is to create an environment at home, work (or school), and in the community that empowers the patient and increases

functional capacity and self-reliance. The patient may be directed to appropriate community resources and health care professionals, and given help in applying for financial support and locating affordable housing. Contact Bobbi Hoadley for more information.

Spectrum Rehabilitation Services (250 763-0289) works with mTBI patients throughout the Okanagan and in Kamloops. ICBC, WorkSafeBC, and personal injury lawyers send people with mTBI here, as do treating physicians and self-referring patients. An OT first determines the patient's needs, then community rehab workers provide one-on-one assistance, which may include job coaching, facilitating a patient's return to work, providing emotional support and at-home support or high-level life skills training, and developing pragmatic coping strategies. Rehabilitation is on a fee-for-service basis, but costs may be reduced for patients paying privately. Contact Carole Kennedy at spectrumrehab@telus.net for more information.

Waldee Services (604 936-6886, www.waldee-rehab.com) works exclusively with people who have traumatic brain injuries, offering community-based one-on-one rehabilitation throughout the Lower Mainland, Fraser Valley, and Vancouver Island. Both lawyers and insurers send people with mTBI to them for assessments and treatment, and referrals by physicians, family members, and patients are allowed. Rehabilitation services are pragmatic and goal-oriented, and may include life skills training, job coaching, learning compensatory techniques, and addressing behavioral issues. Support services for family members are available.

Regional resources in BC

Brain injury organizations throughout the province have drop-in programs. These organizations run (or can rec-

ommend) support groups, and can usually suggest local brain-injury-oriented health care providers.

- **Bulkley Valley Brain Injury Association** (250 877-7723) offers case management services, assistance with accessing rehabilitation programs, one-on-one emotional support, family support, and social and recreational activities.
- **Central Okanagan Brain Injury Society** (Kelowna: 250 762-3233; Vernon: 250 306-2064; www.cobis.org) has a large staff of community support workers and offers case management services and a fee-for-service employment program.
- **Comox Valley Head Injury Society** (250 334-9225) primarily runs support groups.
- **Fraser Valley Brain Injury Association** (604 866 557-1913, www.fvbia.org) offers case management services and runs support groups and drop-in programs throughout the Fraser Valley.
- **Kamloops Brain Injury Association** (Kamloops: 250 372-1799; Salmon Arm: 250 833-0369; www.kbia.ca) has many services and programs, including case coordination and life skills support. Their manual, "Brain Injury Services and Resources for Kamloops," includes the names of medical specialists who treat people with acquired brain injuries.
- **Lower Mainland Brain Injury Association** (604 521-0833, www.lmbia.org) offers drop-in programs. Their web site has useful sections on everyday strategies and community resources.
- **Nanaimo Brain Injury Society** (250 753-5600, www.nbis.ca) offers rehabilitation and case management services, disability benefits assistance, and workshops focusing on issues ranging from trauma recovery to life skills strategies and anger

Information for physicians and patients

Anderson SD, Franklin J. Anderson-Franklin MTBI/PCD Symptoms List. www.stonemountainbooks.com/resources/mtbisymptoms.pdf.

Centers for Disease Control. Facts for physicians about mild traumatic brain injury. www.cdc.gov/ncipc/pub-res/tbi_toolkit/physicians/mtbi/facts.htm.

Centers for Disease Control. Heads up: Facts about concussion and brain injury and where to get help. www.cdc.gov/ncipc/tbi/default.htm.

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Osborne CL. *Over My Head: A Doctor's Own Story of Head Injury*. Kansas City, MO: Andrews McMeel; 2000.

Queen Elizabeth II Health Sciences Centre, Halifax, NS. Mild brain injury recovery. www.cdha.nshealth.ca/patientinformation/nshealthnet/0395.pdf.

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management.

- **Prince George Brain Injured Group Society** (250 564-2447, www.pgbig.ca) offers case management services, short- and long-term rehabilitation (on a fee-for-service basis), and support and educational programs. Their cognitive-based programs are geared to people with mTBI.
- **South Okanagan Similkameen Brain Injury Society** (250 490-0613, www.sosbis.com) offers case management services.
- **Vancouver Island Head Injury Society** (250 598-9339, www.biasvi.org) offers case management services.

Other resources in BC

Accelerated Learning (604 263-3332, info@esii.org) is a one-on-one cognitive training program designed to overcome cognitive and learning deficits, including problems with organizing and processing information. Intact cognitive skills are used to strengthen weaker cognitive areas. Anecdotal evidence shows outstanding results with brain injury survivors (oral communication, E. Reycraft, director, Accelerated Learning, 17 March 2006). The program takes several months to complete and an hour of home study and exercises should be done daily. Fees are on a sliding scale. Family members can be trained to administer the program to patients outside the Lower Mainland.

Adult Learning Development Association or ALDA (604 683-5554, www.alda-bc.org/starthere) helps people with cognitive problems gain independence. Referrals by physicians and patients are welcome. ALDA provides employment assistance and runs a workshop series (Breaking Down Barriers) that focuses on psychosocial behavior, communication and time management skills, and other issues

relevant to people with CPCS. The programs are government-funded and free. People with open WorkSafeBC claims can participate, but only limited assistance is given to anyone with an open ICBC claim. Assessments and psychological counseling can be done on a fee-for-service basis. ALDA works exclusively in the Lower Mainland.

BC Coalition of People with Disabilities Advocacy Access Program (604 872-1278) can help people with CPCS apply for financial assistance or disability benefits through federal and provincial government programs.

BC Society of Training for Health and Employment Opportunities or THEO BC (866 377-3670, www.theobc.org) has employment and education-related programs throughout the province for people with disabilities and mental health problems. Leisure activity programs are also offered. People with cognitive problems from mTBI are welcome.

Learning Disabilities Association of BC (604 873-8139, www.ldac-taac.ca/chapters/bc-e.asp) and **Children and Adults with Attention Deficit Disorder** (604 222-4043, www.vcn.bc.ca/chaddvan) can be contacted about remedial programs and treatment modalities appropriate for people with cognitive or behavioral problems stemming from a brain injury.

Pacific Coast Brain Injury Conference (www.pcbic.org) takes place yearly, offering physicians and others an opportunity to learn more about brain injury. Brain injury survivors and their families can apply for subsidies to attend. Some of the brain injury organizations above run smaller conferences.

Planned Lifetime Advocacy Network or PLAN (604 439-9566, www.plan.ca) can help set up personal support networks for people with mTBI. When this is done early on,

friends and family may be involved. Unfortunately, PLAN usually is not contacted until a person with mTBI has become estranged from family and friends. PLAN can also assist with financial issues and applying for disability benefits.

Vocational Rehabilitation Services (Vancouver Coastal Health/GF Strong Rehabilitation Centre, 604 734-1313) helps people with disabilities overcome barriers to employment. Physicians can refer patients whose CPCS makes it difficult to work.

Competing interests

Ms Franklin could experience a nominal financial reward if this article substantially increased sales of her book on this subject.

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