



The Watson Centre Society for Brain Health

Interdisciplinary Cognitive Remediation program

Powered by ABI Wellness

Information Package, Prepared for ICBC



Watson Centre Society
FOR BRAIN HEALTH

Table of Contents

Table of Contents.....	1
1. Executive Summary.....	2
2. Process Flow.....	3
3. What is the Watson Centre Society for Brain Health 4-pillar program, powered by ABI Wellness? ...	4
a. Watson Centre Society for Brain Health	5
b. ABI Wellness and the ABI Wellness 4 Pillar Service Platform	5
4. Target Population and Admission Criteria	6
a. Target Populations.....	6
b. Admission Criteria	7
5. Overall Benefits of the Watson Centre Society for Brain Health program	8
a. Clinical Benefits.....	8
b. Functional Outcomes and Cost Savings	8
6. Pricing Structure.....	10
a. Current offering	10
7. ABI Wellness Program Policies.....	11
a. Attendance and Engagement Policy	11
b. Approval Policy	11
c. Program Discharge and/or Renewal Policy.....	11
d. Payment Policy.....	11

1. Executive Summary

The Watson Centre Society for Brain Health 4-Pillar program powered by ABI Wellness (ABIW), provides an evidence-based, interdisciplinary model which has illustrated significant long-lasting effects on an individual's functional outcomes (including return to work) and overall quality of life.

The program is eligible for use for individuals suffering Acquired Brain Injury including Traumatic Brain Injury, 3-months following their injury, with the intention to assist these individuals to improve their mental performance (processing information, communicating, reading, writing decision making) and allow them to return to work.

The program consists of proprietary, capacity building cognitive enhancement training, aerobic exercise, and mindfulness meditation. The program is delivered through a technology service platform that integrates non-invasive, proprietary cognitive training exercises and tools, with live tracking and reporting on all program activities.

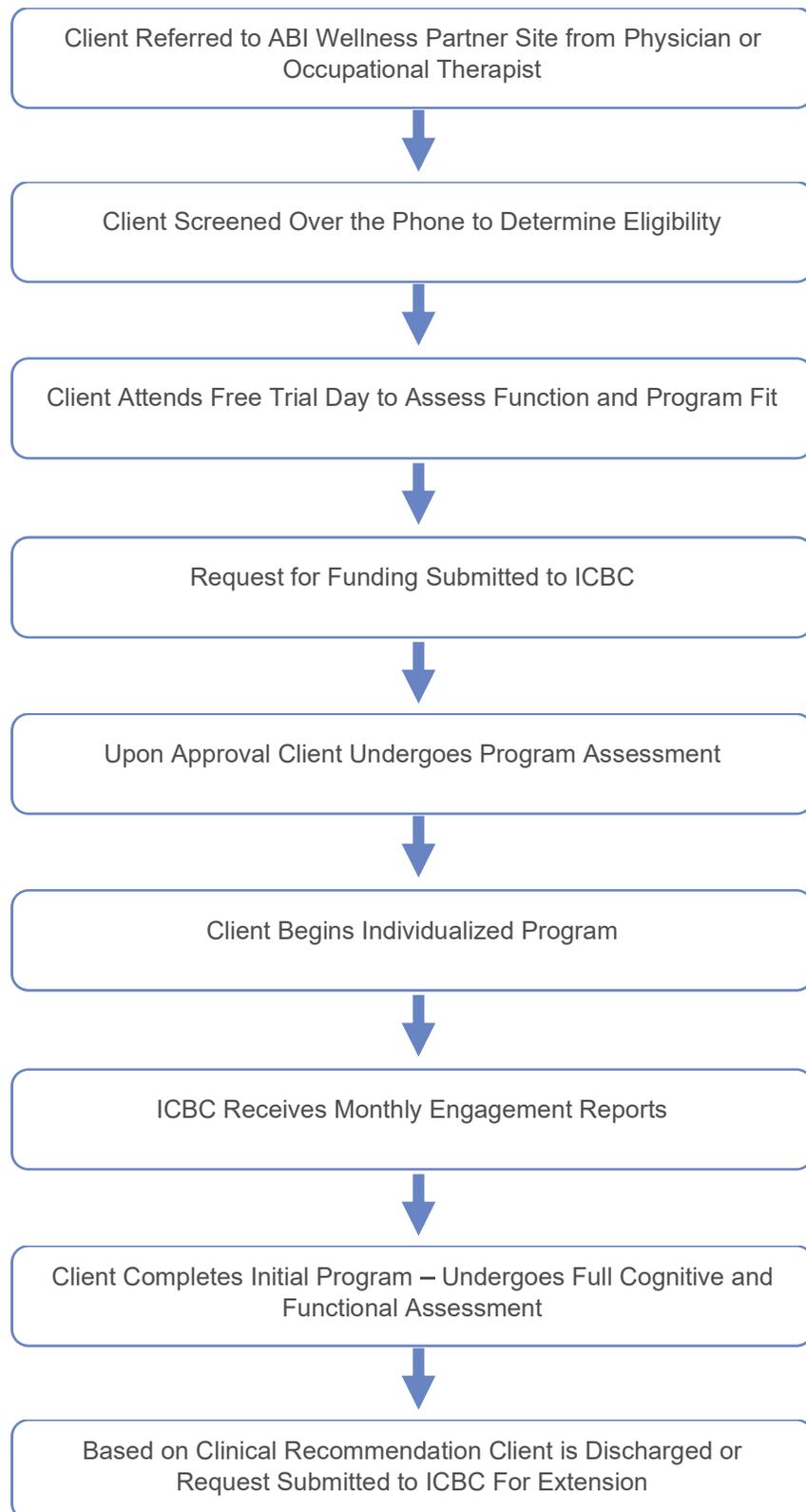
As illustrated through research issued by ABIW, the program has powerful return to work outcomes, at just under 80%¹, for a population primarily consisting of individuals with complex-mild TBI and severe TBI. Significantly, all members who returned to their work post treatment have sustained return to work 6-months and 12-months post-program. Currently, all cases served to date have been post 3-months injury. In addition, the program has illustrated an improvement in the overall quality of life for a client, which includes mental, emotional, social, and overall cognitive functioning. These results were further corroborated by a UBC study which showed significant impacts on individuals' depression and anxiety.²

Watson Centre Society for Brain Health is committed to bringing this program to transform TBI and ABI care in the region; primarily through an evidence-based, interdisciplinary program with measurable outcomes for complex clients. These outcomes include significantly improving an individual's overall health and wellness, increasing their return to work outcomes, and increasing claims savings for clients. ABIW supports this mandate by providing Watson Centre Society for Brain Health with the integrated tools and service platform to deliver this cutting-edge care.

¹ ABIW Wellness Research, based on licensee patient data, as of May 1, 2019. Outcomes will be updated as sample size grows.

² Changes in brain network organization and brain-behaviour relationships following a 3-month intervention program for individuals with chronic TBI. <https://abiwellness.com/wp-content/uploads/2019/03/IBIA-Poster-1.pdf>

2. Process Flow



3. What is the Watson Centre Society for Brain Health 4-Pillar Program, Powered by ABI Wellness?

a. Program Design



The program consists of a blend of 4 key pillars:

- **Cognitive, capacity building therapy:** This therapy consists of key proprietary cognitive exercises developed by Barbara Arrowsmith-Young. This non-invasive therapy is conducted through a mixture of computer and physical exercises, with assistance and supervision of a trained facilitator.
- **Aerobic Exercise:** As part of the program, an individual does tailored aerobic exercise (meeting their mobility needs) to elevate heartrate and improve cognitive functioning.
- **Mindfulness and counseling:** Mindfulness is dosed throughout the program, with optional 1:1 counseling available at some sites to ensure that mental health needs are adequately met.
- **Integrated Health tracking:** The entire program is monitored through live engagement reporting; which tracks individual engagement within each component and activity at any point in the program. This provides ABI Wellness Partner Sites and ICBC the opportunity to have a shared understanding of a client’s progress and growth in the program. In addition, the program tracks the client’s overall quality of life and cognitive outcomes throughout.

Comprehensive 4-Pillar Program	Part-time Integrated Program
4 Pillars (Cognitive, Aerobic Exercise, Mindfulness, Integrated Health)	4 Pillars (Cognitive, Aerobic Exercise, Mindfulness, Integrated Health)
*Access to 4 cognitive tools	*Access to 1 cognitive tool
240 program hours (4 months – 50 Sessions) 4 or 5 days per week 4-5 hours per day	96-144 program hours (6 months – 50 Sessions) 2 days per week 3 hours per day
Cognitive = 160 min/day Access to all 4 Cognitive Exercises	Cognitive = 80 - 100 min/day 1 cognitive exercise used
Aerobic Exercise = 40 min/day Mindfulness = 20 min/day Integrated Health	Aerobic Exercise = 40 min/day Mindfulness = 20 min/day Integrated Health
4 months suggested minimum length of program (renewable based on assessment and engagement reporting)	6 months suggested minimum length of program

a. Watson Centre Society for Brain Health



Since 2016, Watson Centre has provided care to individuals with acquired brain injuries across Canada and internationally. Through delivering exceptional outcomes in the healthcare space, and transforming individuals' lives, Watson Centre has built an international reputation for delivering quality care, receiving referrals from the US and beyond. Co-founded on the need for better care in this underserved population, Howard Eaton and Mark Watson started with research

conducted in 2015 with UBC to assess the effectiveness of the program. Initial positive findings combined with demand from the community, Watson Centre Society for Brain Health was started. Mark Watson as CEO of ABI Wellness now focuses on the system platform and design, while Josh Poirier leads the clinical care and community mandate. Josh is supported by a team of experienced professionals including Helene Thierault, a local OT, among several others.

Since its advent, the centre has served over 50 clients with severe, moderate and complex-mild TBI and many other forms of ABI in BC. Among the many personal success stories, the centre also boasts a 77% return to work rate in working populations, and significant overall quality of life improvements. The centre operates as a nonprofit and has strong partnerships with March of Dimes, Brain Injury Canada, and several other providers in the region.

Further details and case studies are available at: www.watsonbrainhealth.com

b. ABI Wellness and the ABI Wellness 4 Pillar Service Platform



ABI Wellness is the technology and IP provider that powers the 4-Pillar Program. Since 2017, ABI Wellness has focused on developing a brain injury service platform that would deliver lasting cognitive change and change the landscape for brain injury recovery in Canada and beyond. Co-founded based on initial research conducted in 2015, Howard Eaton and Mark Watson developed a program that is interdisciplinary, scaled and research based. Through 2 initial studies conducted at UBC, the ABI Wellness Service platform showed strong signals in improving cognitive function, reducing overall depression and anxiety, and following clinical

implementation sustained improvements over time.

ABI Wellness is a BC based company and is advised by a strong Scientific Advisory Board. ABI Wellness has licensed 5 sites to date (4 in BC) to deliver this platform.

Further details regarding the program is available in the following section as well as on the website:

www.abiwellness.com

4. Target Population and Admission Criteria

a. Target Populations

The following table and descriptions highlight our general target populations. The adaptability and clinical efficacy of our program makes this program effective for a wide range of ABI with varying severity levels:

Traumatic Brain Injury	Non-Traumatic Brain Injury	
Concussion/Mild TBI	Stroke	Brain infections/inflammation
Moderate TBI	Anoxia	Other ABI
Severe TBI	Cancer/Tumor	

1. Concussion and Mild Traumatic Brain Injury

- a. **Reported Improvements in Symptoms:** Mental “fog”, can’t think clearly; difficulty following conversations; difficulty with attention/ concentration; difficulty learning new information; word finding problems; slowed reaction times; Headaches; fatigue; trouble with planning; depression; increased irritability; anxiety; emotional fluctuations; changes in personality; increased impulsivity; sleep disturbances;
- b. **Sample Length of Program:** 4-month program, 4 days per week, 5 hours per day. Alternatively, 2 days per week, 3 hours per day over the course of 6 months.

2. Moderate to Severe Traumatic Brain Injury

- a. **Reported Improvements in Symptoms:** Fatigue; difficulty with sleeping; slurred speech; headaches; chronic pain; delayed/ slow information processing speed; challenges making plans, organizing or beginning tasks; challenges with communicating including understanding conversations, word finding, speaking in proper sentences, understanding cues, initiating and ending conversations; poor concentration and easily distracted; difficulty with short term memory; difficulty learning; difficulty with reasoning and judgement; difficulty making decisions; perseveration on a single topic/idea/activity; depression; anxiety; anger; limited emotional response to situations; loss of identity; anxiety related to future injuries/setbacks; engaging in risky behaviour; impulsivity; saying inappropriate things; isolation; difficulty with social and work relationships.
Sample Length of Program: 6 to 9-month program, 4 days per week, 5 hours per day. Depending on the rate of progress, some participants may continue past the original program length. This is managed on a case-by-case basis.

3. Stroke and Non-traumatic Brain Injury

- a. **Reported Improvements in Symptoms:** Symptoms and outcomes can be similar to mild, moderate and severe brain injuries. In addition, clients have reported improved range of motion and control in their side of neglect.
- b. **Sample Length of Program:** 6 to 9-month program, 4 days per week, 5 hours per day.

b. Admission Criteria

The following criteria and indicators provide a degree of detail on general admissibility. Ultimately the trial day will provide a clear determination of whether a client is suitable to be enrolled in the ABI Wellness program.

The overall general guidelines for screening include:

1. **Ongoing Cognitive Issues:** This can include **Cognitive Deficit** (impaired ability to acquire new information/knowledge), **Cognitive Dysfunction** (brain fog, loss of reasoning, memory, and other neurological abilities), and **Cognitive Impairment** (trouble remembering, learning new things, concentrating and decision making). All types of ongoing cognitive issues following brain can benefit from the program regardless of the nature of the injury.
2. **Ability to Engage in Program:** The most critical factor that determines a successful client in the ABIW program is engagement. Concentration and attention are common cognitive functions affected following brain injury, however as long as an individual is capable of engaging for a minimum of 5-10 consecutive minutes at a time, then they should begin to see benefit from the program.
3. **Length of time since injury:** Due to complications that often arise in the first few months following injury, it is typically suggested that eligible clients are **a minimum of 3-months** post injury. Eligible participants can enter the program multiple years post injury, as chronic brain injury clients, and there is no cap at the upper limit. However, this is up to the professional, medical determination of the lead facilitator.
4. **Mobility:** Some of the cognitive exercises require fine motor skills in order to fully engage. Clients with some fine and gross motor skills of the upper extremities should be able to fully engage and benefit from the program. There are a number of adaptations beyond the use of a stationary bike/treadmill, based on the individual's mobility issues, and exercises may be adapted to include low impact and other modified routines. See the table below for potential adaptations, and further detail is provided during training and review of case studies.
5. **Stabilized symptoms at rest:** Eligible Participants of the ABIW program may present with many of the following common symptoms at the beginning of the program including;
 - Sensitivity to light, sound, movement
 - Dizziness
 - Headaches/ migraines
 - Vision issues
 - Increased difficulty in regulating emotions
 - Nausea
 - Physical pain (i.e. muscle ache)

As long as the above symptoms are manageable (e.g. not constant—67 % or more of the time, and the client is able to focus visually 5 minutes +) then there may be no reason for a client to be excluded from participating in the program.

5. Overall Benefits of the Watson Centre Society for Brain Health program

a. Clinical Benefits

Research completed in partnership with the University of British Columbia explored the impact the cognitive rehabilitation pillar would have on individuals with chronic TBI. A follow up study focused on individuals with mild TBI and the full 4-pillar ABI Wellness program. Findings from the first study suggested that the program caused changes in functional brain networks that were linked to behavioral changes related to fluid intelligence (generalized cognition) - see <https://www.heliyon.com/article/e00373/>. The second study found similar improvements in cognition linked to reorganization of brain networks. Additionally, significant reductions in anxiety and depression were noted following the intervention - see <https://abiwellness.com/wp-content/uploads/2019/01/UBC-Research-Abstract.pdf>

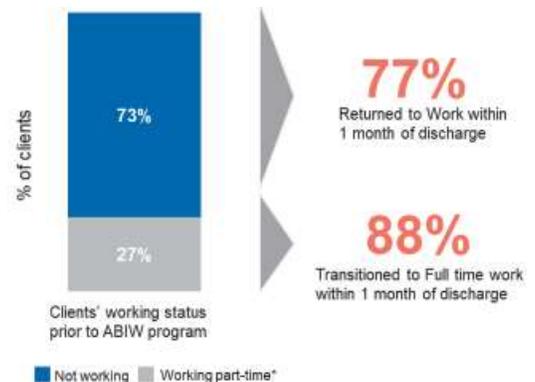
Since 2015, the ABI Wellness program has been used by the Watson Centre Society for Brain in Burnaby, BC. To date, over 50 individuals have gone through the ABI Wellness program. The results from the cognitive rehabilitation indicate improvements across the various cognitive areas of interest. In particular, substantial improvement is seen in the assessment that focuses on processing speed, attention, concentration and cognitive flexibility; all areas severely impacted by brain injury.

In addition, the TBI-QOL has been imbedded into the ABI Wellness program. This assessment was created and validated for individuals with TBI and looks at the quality of life for individual across 4 health domains (physical, emotional, cognitive and social). Initial results show improvements across all domains, with an emphasis on emotional and cognitive domains.

b. Functional Outcomes and Cost Savings

Within the working population of clients that have gone through the ABI Wellness program 73% were not working prior to enrolling. 27% of clients were working part-time. Within 1-month of the completing their individualized program, 77% of clients who were not working, were now working. 88% of the individuals working part-time prior to the program were now working full-time following the program.

100% of clients who returned to work 1-month post-program continued to work at 6-months and at 1-year post program.



*Part-time work refers to working 20 hours or fewer, including volunteering with a registered institution.
Watson Centre Society for Brain Health Internal Data as of May 1, 2019

Client Population	1 month	6 months	1 year**
% of Participants sustained return to work			
	~	100%	100%**
% of Participants at Work Post Program			
Overall Population	77%	79%	70%**

**1-year dataset still in development. (50% of clients are not yet 1-year post discharge from the program)
Watson Centre Society for Brain Health Internal Data as of May 1, 2019

Key to assessing the value of this care intervention, is to understand the potential impact on mapping return to work outcomes to potential claim benefits. Through the following illustrative scenarios showcasing different levels of injury and potential claims assigned, it is clear that a targeted Watson Centre intervention leveraging the ABI Wellness Platform, could have a significant impact on long-term claims benefits.

Illustrative Client Scenario	Illustrative, Status Quo Outcome³	Watson Centre Program Option	Potential Net Financial Benefit⁴	Overall Health Outcomes
Complex mild TBI, 6 months post-injury, MVA	24-month disability claim Failed return to work with persisting issues,	6-9-month program Return to work with no limited/no issues, able to resume former role	\$36K - \$48K claim savings	Sustained Return to work
Moderate-severe TBI, 12-20 months post-injury, post-MVA	60-month disability claim No return to work with persisting issues	12-15-month program Triaged return to work, able to resume activities of daily living, and ramped up into former role	\$120K – \$132K claim savings	Sustained Return to work
Severe TBI, 12 – 20 months post-MVA	100-month disability claim No return to work with persisting issues	12 – 24-month program Triaged return to work, able to resume activities of daily living, and ramped up into former role	\$228K - \$252K	Sustained Return to work, potentially stabilized to specific timing/role
Severe TBI, 12 – 36 months	Long-term disability No anticipated return to work \$1 M claim	12 – 36-month program Triaged return to work, able to resume activities of daily living, and ramped up into former role	\$952K - \$568K	Sustained Return to work, potentially stabilized to specific timing/role

³ Assuming approximate disability claim of around \$3,000 per month (approximate). Used as a benchmark estimate for illustrative purposes.

⁴ Claim savings, net cost of program

7. ABI Wellness Program Policies

a. Attendance and Engagement Policy

ICBC agrees to pay for the recommended program duration as long as the client adheres to the following requirements:

1. The Client must attend a minimum of 75% of available days in the program.
2. The Client must meet a minimum engagement rated as “Adequate” on days attended.

If a client fails to meet the stated attendance and engagement criteria, ICBC holds the right to withdraw payment.

b. Approval Policy

The ABI Wellness program has a minimum program length of 4-months (50 sessions) that is mandatory for all clients. Once an insurance provider approves the program, the expectation is that the insurer will cover and approve a minimum 4-month program period. This is subject to the client adhering to the Attendance and Engagement Policy. The insurer is also able to request/be provided monthly reporting to monitor engagement and attendance to insure adherence.

It is understood that program length is based off the client’s needs as determined by the trained ABI Wellness facilitator and a clinical health care provider. The insurer holds responsibility regarding funding the length of the program and ABI Wellness nor its partners share in the responsibility if a client is discharged or funding is ceased prior to full recovery.

Upon completion of initial program, clinical recommendation may recommend continuing the rehabilitation program

Based on the client’s initial assessment, a minimum program length recommendation is made. As per ABI Wellness policy, clients must complete a minimum of 4-months. Upon completion of 4-months, the client will undergo a full assessment. Based on the findings, a recommendation can be made for the client to continue. Given the client’s needs and requirements, ABI Wellness requests a review/cycle time within 1 month of program renewal submission in order to ensure site capacity and availability for the client.

c. Program Discharge and/or Renewal Policy

Upon completion of the program, all clients must undergo a functional assessment from a certified Occupational Therapist, which may include a job skill assessment. Following the recommendation of the OT, a recommendation will either be made to discharge the client from the ABI Wellness program or for their rehabilitation to be extended.

d. Payment Policy

Under the understanding that the minimum program length is 4-months, upon approval of the program, ICBC can pay fees on a monthly basis, on the first of every month, e.g. Jan 1 for the program to commence in January. ABI Wellness and its partners are open to accepting monthly installments.