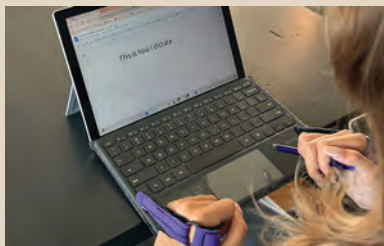




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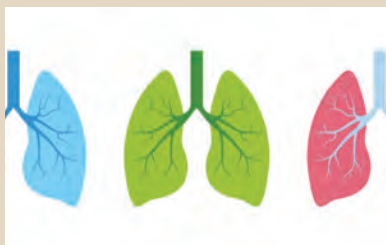
... what it's all about

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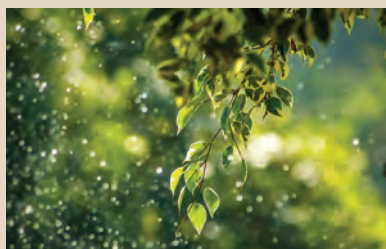
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Celebrate TFL's achievements at the 2024 AGM

By Christine Gordon

Our wise and intrepid Peer Leader Nancy Lear, who passed away in 2021, taught us that there are no clients at Technology for Living (TFL), only members. The difference matters: a client is a recipient of service while a member is an owner. TFL's bylaws stipulate that 51% of the Board of Directors must be either PROP or TIL members. You become a member as soon as you receive any service from TFL.

Membership brings a responsibility to participate in any meaningful way that you can; like attending workshops, responding to surveys, joining peer events and volunteering for committees. One of the most important events of the year is the Annual General Meeting, which provides a snapshot of the year behind us and an outlook for the year ahead. It gives members an opportunity to directly exercise their ownership through their votes.

TFL has an important story to tell about this past year. The Simon Cox Student Design Competition was the biggest ever with 24 teams with students from 7 post-secondary institutions participating to develop assistive technology that can benefit TFL members. The Youth Assistive Technology program is reaching out

to adolescents and their families and providing technology that fits for Gen Z kids. Our peer led Climate Futures initiative, in collaboration with Praxis Spinal Cord Institute, is providing state of the art cooling vests to members so they can weather the increasingly hot summers. PROP has undertaken to learn more about members who live with Obesity Hypoventilation Syndrome and to develop effective ways of meeting their needs. Our Open Doors project spans the province, providing automatic door openers that allow recipients more freedom and independence.

There are many more TFL stories that you need to know about. Resolve to attend the AGM and exercise your franchise.



Christine Gordon is the Chair of Technology for Living's board.



Technology for Living round up

TFL Staff BBQ 2024



On July 3rd, Technology for Living held its annual staff BBQ in Vancouver. The event brought together team members and peers, giving those who often work remotely across British Columbia a chance to mingle with office-based colleagues in person. Everyone enjoyed a welcome break from daily routines, sharing stories and catching up over good food and enjoying the good weather.

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Kinsmen Golf Tournament

The Kinsmen Foundation of British Columbia recently hosted its Annual Charity Golf Tournament, bringing together community members for a day of friendly competition and philanthropy. One of the beneficiaries of the Kinsmen's generosity is TFL's Automatic Door Opener project. This annual tournament serves as a wonderful example of how the Kinsmen Foundation continues to make a positive impact in our community.



Apply for a free air conditioner

Here's a tip we would like to pass on to our peers. Last summer, one of our board members, Jane Stillwell, learned about the opportunity for low-income individuals with disabilities: free air conditioning units provided by BC Hydro's Energy Conservation Assistance Program (ECAP). If you think you might be eligible, to find out more go to the BC Hydro website (<https://tinyurl.com/52hh97jp>) and apply for a free air conditioner.

Once you apply, BC Hydro will email you a reference number and request proof of income and landlord consent documents. Within a few days, a contractor will contact you to arrange the installation. The contractors were professional and courteous, and the installation took just 15 minutes. The unit is vented through a nearby window, operates quietly, and comes with a remote control.

Always be ready for a hot day!



BITS & BYTES FROM TIL

We are thrilled to announce that one of TIL's local community partners, Leafi Home, has launched its inaugural smart home product, 'Nova'. Nova is a compact, sleek device that transforms blinds that utilize a tilt wand into smart blinds. One of the most impressive aspects of their design is that it can be installed completely tool-free within minutes, and it will not damage your walls if you ever need to uninstall it.

Other key features of Nova include integration with Amazon Alexa or Google Home, a long battery life (up to a year before recharging), and customizable programming in the app. Check out www.leafihome.com for more info.

CONTACT US!

We are always happy to discuss any member's needs. Simply phone us at **604.326.0175** or send an email to info@technologyforliving.org

TIPS & TRICKS

Did you know many smart bulbs that TIL provides to its members, for voice or phone control, can also change colour? Experiment with the colours and brightness to find colours that suit your vision needs throughout the day. Also, add a little holiday ambiance by changing a bulb orange at Halloween, green at Christmas, or red for Valentine's Day.

iOS Mobility Accessibility

By Wayne Pogue

In today's digital age, smartphones are essential tools that connect us to the world. For users with mobility challenges, accessing and using smartphones can pose significant hurdles. Apple's iOS platform offers a range of features designed to make iPhones and iPads usable for everyone, regardless of their physical abilities. Here's a look at the key iOS mobility accessibility features that empower users to navigate, communicate, and interact with their devices more easily.

Switch Control

Switch Control allows users with physical disabilities to control their iOS device using adaptive switches or the screen. It provides customizable scanning options to navigate through apps, music, and settings by highlighting items sequentially. This feature supports various Bluetooth-enabled switches and assistive devices, offering flexibility in device interaction.

AssistiveTouch

AssistiveTouch offers a virtual on-screen menu that replaces physical buttons and gestures for users who find them challenging. It enables users to perform gestures like pinching or multi-finger swiping with a single touch. Custom actions can be programmed for specific tasks, tailored to individual needs.

Voice Control

Voice Control allows users to navigate and interact with their iOS device using

voice commands. This feature supports hands-free operation and precise control over text input, editing, and navigation within apps. It can execute commands like opening apps, adjusting settings, and composing messages through voice input.

Touch Accommodations

Touch Accommodations provide adjustments to touchscreen sensitivity and response for users with motor skill impairments. Features include *Hold Duration*, which adjusts how long a touch must be held before it's recognized, and *Tap Assistance*, which registers taps when fingers are lifted, reducing the need for precise timing.

Siri Shortcuts

Siri is an intelligent personal assistant developed by Apple. It uses voice commands, voice search, and voice-controlled device commands to perform actions and answer questions.

Siri Shortcuts automate tasks and create personalized workflows using voice commands or tapping options on the screen. This feature enhances productivity and simplifies complex actions that may otherwise be difficult to perform manually. Users can create shortcuts for everyday tasks like sending messages or controlling smart home devices. Siri Shortcuts integrate with various apps and services, allowing users to streamline their workflows and save time.



INHALE / EXHALE

What is 'Frog Breathing'?

Glossopharyngeal breathing (GPB), also known as "frog breathing", is a technique using muscles in the mouth and pharynx to push volumes of air (gulps) into the lungs and held down by the vocal cords. The gulping motion is repeated until your chest is full of air. Individuals who are ventilator and/or bilevel dependent can use this technique to sustain ventilation for several hours. GPB can improve voice and cough efficacy. Did you know that competitive free divers use this technique to increase lung volumes and breath-holding time? Have you mastered the "frog breathing" technique? We would love to hear from you!

CONTACT US!

If you need respiratory advice or support please contact the PROP team at
📞 1.866.326.1245

IDEA CORNER

Let's Take a Breath

In a seated position, keep your knees bent. Relax your shoulders, head, and neck. Fill your lungs completely to the point where you feel your abdomen is full. Hold your breath for four counts. Then, through pursed lips, slowly exhale for eight counts. Repeat.

Sleep Better, Live Better with BiPAP Therapy

By Michael Bossaer



Getting a good night's sleep can be tough. But there's help! BiPAP therapy has revolutionized respiratory and sleep care. This innovative treatment uses pressurized air through a mask to keep airways open, helping users breathe easier and sleep deeper.

BiPAP isn't just about better sleep – it's about better living. It can sharpen your mind, brighten your mood, strengthen your immune system, and improve your overall quality of life. The benefits extend far beyond the bedroom, too. BiPAP therapy can reduce hospital visits, lower risks of heart problems and strokes, and boost cardiovascular health.

To get the most out of your BiPAP, aim for at least 4 hours of nightly use. This covers about three sleep cycles, giving your body the support it needs for optimal recovery. During these cycles, your body focuses on regenerating organs, enhancing cognition, and bolstering your immune system.

With BiPAP support, your body can dedicate more energy to these crucial processes.

The efficacy of BiPAP therapy is closely tied to patient compliance, particularly the duration of nightly use. Research shows that consistent use is key to achieving maximum therapeutic

benefits. By optimizing oxygenation levels and minimizing the physiological stress of untreated sleep-disordered breathing, BiPAP therapy contributes significantly to better overall health outcomes.

At PROP, our respiratory therapists are your sleep support team. We're here to help you make the most of your BiPAP therapy. We'll work with you to adjust pressure levels, find the perfect mask fit, optimize comfort settings, and overcome any hurdles you face. We understand that mask comfort and leak management can be challenging, but we're here to guide you through these issues.

Quality sleep is crucial for your overall health.

By using your BiPAP consistently, you're taking a big step towards feeling your best and living your healthiest life. Remember, PROP is always here to help with any questions or supply needs. Whether you're experiencing leaking issues, have questions about your BiPAP, or need supplies replenished, don't hesitate to reach out. Let's work together to unlock the power of great sleep and help you be at your best every day!

MEET LEKHA JHALAWAT



We're excited to mark a year since Lekha joined the Peer Team as our YAT Peer Coordinator. Armed with an MBA from New York Tech, Lekha brings a global perspective from over three years of experience with children in India, the United States, and Egypt. She enjoys connecting with diverse social groups and ensures young voices are represented in our peer initiatives, such as TFL's adaptive gaming tournament, creating an inclusive environment where youth feel empowered to express themselves.

CONTACT US!

We are always happy to discuss any member's needs. Simply phone us at **604.301.4208** or send an email to **peer@technologyforliving.org**

TIPS & TRICKS

The Neil Squire Society's Creative Employment Options program offers personalized support for job seekers with a self-declared disability. Available in-person or virtually, the program helps participants become job-ready through individualized career development, assistive technology assessments, and job-search support, among other benefits. www.neilsquire.ca

Courage to Come Back Awards

By Monica Gärtner

As a person with a disability, I have faced many emergency department visits due to Osteogenesis Imperfecta, a brittle bone disease. I survived being hit by a car twice and falling from my wheelchair, resulting in five fractures. Last spring, I was admitted to hospital with pneumonia. During my stay, the medication I received did not consider my body size, leading to complications, including the collapse of both lungs. Subsequently I was nominated for and won the *Courage to Come Back Award*, and I would like to share my acceptance speech with the readers of the *Balance*.



Good evening ladies and gentlemen, esteemed dignitaries, guests, Lorne and Coast Mental Health's *Courage to Come Back* awards team, it is with great pleasure that I address you this evening.

I used to work in a call centre. One day management gave us a box of chocolates. In the box was an orange shaped marzipan ("martsiiipaan" in German) ball. I put it on my desk for later, but it rolled onto the floor. I asked my colleague to pick it up and he looked at me awkwardly. Again, I asked him to pick up my "martsiiipaan" ball. He hesitantly looked around my desk and he was relieved. I asked him, what did you think I said? He said, "I thought you asked me to pick up your maxi pad!" He not only misheard, but he made an assumption. Assumptions are what I faced in the hospital, and assumptions are what people with disabilities face every day.

Because I lived I will continue to make it my mission to educate the health care community on ableism, which they desperately need.

Because I lived I will continue to fight for people with disabilities who possess the inherent right to live with

dignity, lead fulfilling independent lives and deserve equitable recognition and appreciation within society, mirroring the respect afforded to all.

Because I lived I will continue to do book signings for *Overcoming the Impossible - A Life of Trials and Triumphs*, including public speaking engagements.

Because I lived I will continue to support non-profit organizations like the Canadian Assisted Travel Society.

Because I lived I will continue to work with my agent at HectiQ to promote acting roles for people who are differently able like myself.

Before I leave you, I would like to quote a few lines from Mother Teresa poem entitled *Life is Life*:

Life is a promise, fulfill it
Life is a struggle, accept it
Life is a tragedy, confront it
Life is too precious, do not destroy it
Life is life, fight for it

Thank you to everyone and especially Lorne and Coast Mental Health's *Courage to Come Back* awards team, sponsors, my nominator Denis Vallencourt, my sister Anita, my nieces Emily and Nicole, and my God.

A Game-Changer for Mobility: The Action Trackchair®

By Marnie Essery



While researching equipment for the Ladysmith disabled sailing club, Chris Loscerbo, a 65-year-old Italian-Canadian, discovered the Action Trackchair®. Intrigued by this uniquely designed all-terrain wheelchair on tracks, Chris dove into extensive research about the product and its manufacturer. Recognizing its potential, he reached out to the US-based company. After thorough discussions and negotiations, Chris successfully secured an agreement to become their Vancouver Island franchise owner, aiming to make this life-changing technology more accessible in his region.

As a quadriplegic for 32 years following a diving accident, Chris understands the importance of mobility aids. Before his injury, he was an entrepreneur with six businesses and a potential mayoral candidate for Winnipeg. The accident dramatically altered his life, forcing him to relearn everything, including how to hold his infant daughter.

Chris praises the Action Trackchair®: "I have no limits when I use it. I can go anywhere and do so much more for myself. I can traverse all types of terrain, including sand and snow, and even climb steps. I can plow my driveway, visit beaches, and explore mountains." The chair has significantly enhanced his independence, allowing him to pursue his passions for cooking, gardening, and outdoor activities.

The Action Trackchair® comes in various models, with a basic version starting at approximately \$20,000. Additional attachments are available for customization.

Its versatility makes it an invaluable tool for those with mobility challenges, opening up new possibilities for outdoor adventures and daily tasks.

Chris's experience with the Action Trackchair® complements his other adaptive pursuits, such as disabled sailing. Using sip-and-puff technology, he navigates sailboats, competing in events like the Mobility Cup across Canada. He encourages others to try disabled sailing, noting its affordability and social benefits.

Keenly interested in spinal cord injury research, Chris participates in various studies and clinical trials. He's even tested robotic equipment that allowed him to take a few steps outside his wheelchair. This aligns with his life motto: "Don't be afraid of anything! If I can do it, others can too."

The Action Trackchair® represents more than just a mobility device for Chris; it's a symbol of his resilience and determination. It enables him to continue pushing boundaries and inspiring others, demonstrating how adaptive technologies can help overcome adversity and find new ways to thrive.

As a franchise owner, Chris aims to make the Action Trackchair® more accessible to others in his region, potentially changing lives just as it has changed his. His story showcases the transformative power of innovative mobility solutions and the importance of never giving up in the face of challenges. Chris lives in Chemainus B.C. and can be contacted by email: Chris_Loscerbo@telus.net.

MORE INFORMATION

actiontrackchair.com

Adaptive Sailing Association of BC
(asabc.or)

Disabled Sailing Association - Vancouver - OceanShaker
(tinyurl.com/yc5nwnn7)

Mobility Cup
(mobilitycup.com)

Lessons from a Disabled Sailor
(thenauticalnomad.com)

Accessible Technology for Education

By Ainsley Wood

June 2nd, 2020 is the day I became a tetraplegic (quadriplegic): I was playing with my little brother when I fell from a tree, and my life was changed in an instant. Early on, the reality of my severe physical limitations undermined previous certainties: I began to question if I would be able to pursue a post-secondary education like I had always planned. After all, if I could not even hold a pen, how could I succeed in school or live independently? Working through these challenges, I discovered that accessible technology could bridge the gap between my physical limitations and my dream to achieve academic success.

The quest for adaptive strategies

There are many physical barriers I have encountered when it comes to completing coursework. Taking notes and completing writing assignments are things I am cognitively capable of, but while other students can quickly jot down an idea with a pen, it is not that simple for those with physical disabilities that affect the upper extremities.

As any quadriplegic student will tell you, a most frustrating challenge is being held back by something as simple as writing with a pen because of a lack neuromuscular control in the upper limbs.

While some have suggested a scribe support, for me, using a person to take notes disrupts my engagement with the material, it creates a disconnection from the task.

So how do I take notes? Write essays? Complete projects? Figuring all this out has indeed taken time, but after a few years of trial and error, I have found the tools that work for me and help me to succeed.

Technology I use

To conquer schoolwork, I came up with a preferred set of accessible technology that I fine-tuned over time through trial and error.



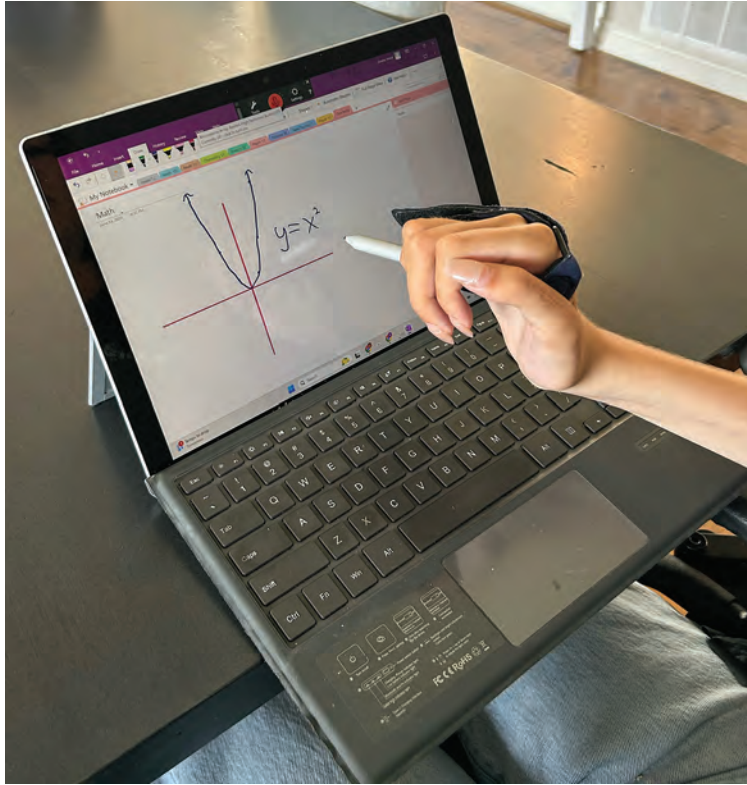
My equipment includes:

- › Microsoft Surface Pro Laptop
- › Touchscreen styluses in universal cuffs
- › Dragon Dictation Software
- › Microsoft OneNote for Math & Science
- › Portable charger

For most of my schoolwork, I rely on a Microsoft Surface Pro laptop. This device's touchscreen is crucial because it's very difficult for me to use a mouse or the small laptop touchpad. My keyboard doubles as a case that attaches to the laptop—an extremely helpful setup because it means fewer components. With this setup, I primarily rely on a few applications. For assignments and projects, I opt for Google Docs and Google Slides because they're easily shareable and have a very user-friendly format.

Due to my limited hand dexterity, I use touchscreen styluses in universal cuffs to navigate the computer. Mine are home-made, but universal cuffs are easily available on Amazon.

This method of typing can be fatiguing, so I use Dragon Dictation Software as my chosen tool for writing assignments. It has impressive speech-to-text accuracy in both French and English, and it adapts itself to your voice. Some people prefer to use headphones with a microphone, but I just find a quiet place and use my laptop microphone. The combination of a laptop, styluses, and dictation software enables me to write without physical barriers.



For maths and science, I use a different setup. Microsoft OneNote allows me to write complex equations on my laptop using the Surface Pen (a stylus for the Surface laptop) I place in a universal cuff. The app's key feature is its ability to convert documents to PDFs, which I can easily send to teachers for printing and grading. Additionally, OneNote lets you add PDF worksheets and write on them digitally. It's like using a pen on paper, but on your computer or tablet, which is great for math and science work.

A tip from experience: invest in a portable charger which extends your laptop's battery life during long school days, often lasting up to 8 hours.

Student Access: Sourcing Accessibility Technology

Dictation software and technology are essential but expensive tools. Fortunately, kindergarten to K-12 students with disabilities can access free technology through SET BC via school resource centres. For post-secondary students, it's more complex.

Assistive Technology BC (ATBC) provides technology, but only to those eligible for the Canada Student Grant for Services and Equipment for Students with Disabilities, which offers a non-repayable grant up to \$20,000 annually. Once postsecondary students are connected to their disability resource centre, they may be eligible for the ATBC Public Postsecondary Loan (PPL) program which provides assistive technology loans. (For most up-to-date and accurate details, check directly with ATBC.) Alternatively, bursaries like the Lisa Huus Memorial Fund can help. I recommend searching online for disability-specific bursaries, as many are available.

Advocating for your needs

All primary, secondary, and post-secondary schools have a legal obligation to address your accessibility needs to the point of undue hardship. Despite this requirement, it's still crucial to advocate for yourself. My most important tip is to provide teachers and professors with a clear list of the support measures you need to succeed, explaining why you need them and how they can best assist you. Some essentials include a quiet place to work, digital formatting, and receiving notes and/or slideshow presentations before class. For K-12 students, schools will connect you with a resource teacher.

In post-secondary education, it's the student's responsibility to reach out to their chosen institution's disability resource centre for support in arranging and advocating for appropriate accommodations.

In the fall of 2024, I will be starting my studies at the University of British Columbia in the Bachelor of Arts program, aiming to major in psychology. Every day, I am proud of myself, not just for my academic success, but for my ability to persevere when accessibility-related barriers get in my way. My academic success did not come easily; every day at school, I advocate for access to accessibility-related accommodations, find creative ways to complete assignments digitally, and go through a series of trials and errors to find success with these resources and technology.

The important thing to remember is that the technology and tools that are perfect for one person are not necessarily perfect for another. Because of this, it is essential to remind yourself that finding your perfect tools requires being open to change and not being afraid to try new things. I remind myself every time I enter a classroom that my intellectual abilities can never be hindered by my physical limitations as long as I continue to harness the ever-evolving arsenal and power of accessible technology.

The struggle with robotic care

By Taylor Danielson



In 2024, the dream of robotic assistants revolutionizing care remains mostly unfulfilled. Many once-promising systems gather dust, and high-profile projects like the *Robear* lifting system have been discontinued. This situation raises a pressing question: why has progress in care robotics been so challenging?

The answer lies in Moravec's Paradox: tasks humans find effortless often prove incredibly difficult for robots, and vice versa. Consider feeding someone with a spoon - simple for us humans, but a complex choreography for a robot. We intuitively adjust our movements based on subtle cues from the person we're feeding. For a robot, this requires precise calculations and real-time adjustments. Conversely, robots excel at repetitive, precise tasks on factory assembly lines, where every motion is the same and nuance is unnecessary.

This paradox explains why we've made astounding progress in industrial automation yet struggle with creating robots for everyday care tasks. Skills we've honed over millions of years - like gently bathing someone or interpreting subtle facial expressions - are extraordinarily challenging to program. It's like teaching a computer common sense or intuition.

To bridge this gap, we need a user-centred approach from the start. At Technology for Living, we champion a "member first" mentality, involving users at every step. This philosophy

aligns closely with Cornell University's EmPRISE Lab, led by Dr. Tapomayukh Bhattacharjee. Their mission is to "enable robots to improve the quality of life of people with mobility limitations by assisting them with activities of daily living." The lab focuses on teaching robots to navigate and interact in real-world home environments, adapting to the unpredictable nature of care tasks.

Dr. Bhattacharjee explains, "We are not only passionate about developing algorithms that solve fundamental problems in these domains but also strongly believe in developing real robotic systems, deploying them in the real world, and evaluating them with real users." This approach is crucial. It's not just about advanced algorithms; it's about replicating the subtle skills that make us human. By involving users throughout the process, we can teach robots not just the mechanics of care, but the art of it.

Despite the challenges, the future is promising. As we refine these user-centred methods, we're getting closer to robots that can truly make a difference. The goal isn't to replace human caregivers, but to augment and support them, enhancing the invaluable work they do and expanding the possibilities of care. By focusing on real-world solutions, we can create technologies that genuinely improve lives. It's a long road ahead, but one well worth traveling.



The quest for inclusive recreation in BC's North

By Chloe Gratton

Play is an essential part of life, from childhood through adulthood. As we grow older, our ideas of play might change of course like going to the movies with friends or enjoying a relaxing dinner. Recreational leisure is vital for anyone's well-being, but as someone with a disability, accessing many of these leisure activities often present challenges.

Northern BC, where I live, is considered a haven for outdoor enthusiasts. Hunting, fishing, hiking, and camping are popular, none of these activities are readily accessible to me due to physical limitations. I believe we could make them more inclusive through adaptive equipment, guided accessible tours, and wheelchair-friendly trails. As a kid, I attended a summer camp for people with various abilities. For one week, all barriers were removed. We enjoyed an in-ground trampoline with easy transfers and an adaptive climbing wall that let us reach new heights. This camp was an excellent model for inclusive design.

Prince George, the BC's largest northern city with 74,000 people, is great for outdoor activities, but indoor options for year-round fun are limited for me as a young adult living with a disability.

Overcoming boredom is essential when you live where it snows half the year.

I'd love to see adaptive indoors rock-climbing facilities, inclusive escape rooms, and more accessible retail spaces as stores are often cluttered and impossible for my wheelchair to navigate.

Prince George has two swimming pools and multiple bowling alleys designed with accessibility in mind. I appreciate this effort, but I require staff assistance for the full experience. More trained staff and adaptive equipment would help me participate more independently.

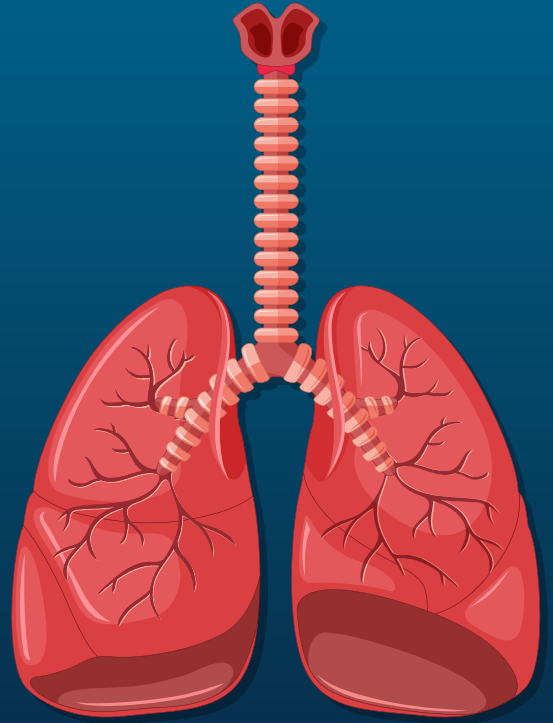
Proper ramp design is crucial for my accessibility. Last winter, I attended an event at a local business. The ramp wasn't designed properly, with stairs placed at the end corner without barriers or grit. I lost control of my chair, fell down the stairs and sustained a concussion. I'm still dealing with sleep issues, headaches, and anxiety about leaving the house. This experience highlighted the need for regular accessibility audits, education for businesses, and a system for people with disabilities to report issues and suggest improvements.

Creating an inclusive environment requires ongoing effort. I'd love to see more inclusive community programs and partnerships between disability advocacy groups and local businesses. Simply having a ramp isn't always enough to be fully wheelchair friendly.

Many ramps are made quickly and don't meet standard codes. Allowing all people of all abilities to enjoy recreation means creating an environment tailored to everyone's needs. Unfortunately, outside of specialized camps, there isn't much effort to create inclusive entertainment areas. But with community involvement and a focus on accessibility, we can change that. By addressing these challenges and implementing inclusive solutions, we can make Northern BC a place where everyone, regardless of ability, can enjoy recreational activities year-round.

My protocol for respiratory health

By Arjo



Disclaimer: This article is based on personal experience and should not be considered professional medical advice. Always consult with your healthcare provider before making changes to your respiratory care routine.

Two decades after my spinal cord injury (SCI), I have experienced more than 15 upper respiratory tract infections (URTIs) that required hospitalization. The most challenging incident occurred while I was traveling to a friend's wedding. I had to call 911 and ended up in the hospital, missing the entire event. Even more difficult was witnessing my family endure my suffering during that time. Having overcome multiple near catastrophes, I have gained a wealth of knowledge that I would like to share.

Pre-injury, a common cold was all but a minor nuisance. Post SCI, with 40% of normal lung capacity, only diaphragm breathing and a weak cough, a common cold can be life-threatening. I eat healthily, exercise regularly, use lung volume recruitment (LVR), a nebulizer and a BiPAP. Still, that is not always enough.

Before my new protocol

Commonly prescribed antibiotics and steroids caused me dangerous infections, so I was forced to change. My personal protocol used to be: when I noticed cold-like secretions in my throat and chest, I would observe the sputum's color—

yellowish sputum might indicate a bacterial infection, while clear sputum could suggest a viral infection. In response, I would minimize my activity, rest, and focus on recovery. If the sputum suggested a bacterial infection, I would take oral antibiotics and medications to dilate the airways for easier breathing and phlegm expulsion. Next, I would employ assisted coughing techniques. If these measures failed, hospitalization would be necessary.

Now I have become a lot more proactive: aggressive treatment with a saline nebulizer, at the slightest sign of nasal stuffiness. Any tickle or itch in the throat is a red alert for me. I use LVR and assisted coughing (AC) to remove chest secretions, as soon as they appear. I nebulize with Ventolin at the slightest sign of above normal chest production. I consult with a physician (GP) as needed, but ultimately consider antibiotics only as a last resort, likely via IV in a hospital.

I was referred to the Provincial Respiratory Outreach Project (PROP), one of the programs run by Technology for Living, late in my journey. PROP has tools and expertise that could be lifesaving. If you are not familiar with PROP, give them a call.

Lessons I learned from personal experience

In my experience, I've found it important to be active, engaged in life and not live in fear. The immune system can benefit from happiness and activity. At the slightest

sign of URTI, it's even more important than normal to ensure you are getting enough sleep. That said, I find it's best to spend much time sitting up, unless I do need sleep. I've found my lungs function better in an upright position.

Assisted Coughs (AC)

I have had to do two-person ACs, as often as every 15 minutes, 24 hours a day, for multiple days. This can strain the most committed care team. A backup team is required to prevent exhaustion. Funding sources may complain about the expense, but I solved the problem with a respirologist's prescription for one or two-person ACs, as needed. AC is physically demanding, as well, so consideration must be taken to protect care workers. Book an education session with a community physiotherapist and your team because technique is critical. ACs are compressive and only provide deflation. For inflation, see LVR. Always consult your health-care team before implementing new techniques.

Lung Volume Recruitment (LVR)

LVR provides inflation of the lungs, using an "ambu bag," a medical device about the size of a 2L pop bottle normally used for emergency breathing assistance. The technique involves "stacking" with successive pumps, to inflate the lungs fully, before forcefully exhaling. This provides the wonderful feeling of breathing deeply and completely, before coughing hard, even if one lacks the ability to do so. LVR helps expel any phlegm and associated microbes before you get sicker. Personally, I do LVR, for about five minutes, twice per day, before lunch and bed. Discuss the appropriate use and frequency of LVR with your respiratory therapist or doctor.

Nebulizing

A nebulizer is used to dispense medications which help opening the airways and making breathing easier in cases where someone cannot inhale deeply. It can also be used to dispense normal saline (NS), non-medicated and harmless, as a fog-like mist. NS can be relaxing and breaks down phlegm, so it can be expelled easier. NS also works wonderfully for clearing sinus infections. I start by breathing in the mouth and out through the nose. Then out one nostril only, keeping the other closed. Then in and out each nostril separately. For me, 10 breaths are all that is necessary for each set. I noticed that the saline mist sometimes causes my nasal tissues to swell, and it feels like the stuffiness returns, before calming down. I do this procedure preventatively every day, for 10 or 15 minutes, half an hour before sleep.

BiPAP assistance

I use a BiPAP (bilevel positive airway pressure) machine, similar to a CPAP. As the years went by, I found myself waking up feeling a bit down and not fully rested. Over time, I realized that my breathing had become shallower at night. Besides improving oxygenation, a BiPAP facilitates air movement throughout the lungs, decreasing the potential for bacterial growth.

Exercise

High level disabilities can make exercise challenging, but I make the best of it. My exercises consist of hand cycle 15 mins two days a week, wrist weights and rubber bands two days a week. Recently I added karaoke every day, for at least half an hour. Singing exercises the diaphragm deeply, forcing anything lurking in the lungs to move up and out. It takes at least three or four songs to get the effect, but it's worth it.

Devices I regularly use

An abdominal binder (AB) was prescribed shortly after my SCI. It provides extra support for breathing, speaking, coughing and posture. I also use a heart rate/blood pressure monitor and oximeter, if I have a developing condition, or just feel a little off. They are readily available, fairly inexpensive and provide valuable peace of mind.

Herbal/dietary

I tried garlic, ginger, herbal teas and medicine, and for me they don't have tangible effect. But I do take zinc for my respiratory health which can be found in seafood, red meat, poultry, beans, nuts, whole grains, mushrooms, broccoli and others.

Those are my secrets which are secrets no more. I can happily say I have successfully treated numerous respiratory conditions without the need for antibiotics or steroids. Given my history, this is a great accomplishment.

While these techniques have worked for me, everyone's needs are different. Always work closely with your health-care team to develop a respiratory care plan that's right for you. Good luck with your respiratory challenges, and don't forget to contact PROP to answer any questions. They are there to help you breathe easier!

CONTACT PROP

If you need respiratory advice or support please contact the PROP team at 📞 **1.866.326.1245**

Jora Singh Nadal's accomplishments highlight exceptional abilities as a young innovator

By Robin Whyte

Jora Singh Nadal, a grade ten student at University Hill Secondary School in Vancouver, recently won the Gold Medal Challenge Award (Digital Technology) at the 2024 Canada-Wide Science Fair in Ottawa. His winning project, *DeviceABLE*, is a hands-free computing app for people with disabilities. Jora also received the David Laugharne Award for the best use of innovative technology.



A quick online search reveals Jora's impressive track record in STEM (Science, Technology, Engineering, and Mathematics). Both Jora and his older brother Jodh, a second-year UBC engineering Presidential Scholar, have participated in regional and national science fairs and math competitions since elementary school, earning numerous awards and scholarships.

DeviceABLE, Jora's latest innovation, was inspired by his own experience with coding-induced wrist and back pain. Recognizing its potential to help people with disabilities who struggle with conventional typing, Jora set out to create an app that would be free, customizable, and hardware-free – improvements over existing technologies that are often expensive and cumbersome.

Developing *DeviceABLE* was no small feat. Jora credits his parents' advice to "keep going and follow your dreams" for helping him persevere through challenges. Check out the app's website here <https://deviceable.netlify.app/>

Despite his technological accomplishments, Jora maintains a balanced life. He enjoys sports, spending time with friends, and watching shows like *American Ninja Warrior*. Jora's interests extend beyond technology; given the chance to have dinner with any historical figure, he chose Albert Einstein. He finds Einstein's theories in physics fascinating and would love to understand the process behind the scientist's groundbreaking conclusions.

Jora's passion for his work is evident. Asked if he could trade lives with anyone for a day, he replied, "There is nobody; I'm doing everything I've always wanted to do in my own life with my coding and technology."

Jora's story is one of talent, hard work, and a genuine desire to make a positive impact through technology.

As Jora continues his educational journey, looking at his past achievements and current projects he can surely look forward to a rewarding future in the world of technology and innovation. His ability to identify real-world problems and create practical solutions, combined with his strong work ethic and supportive environment, positions him well for making meaningful impacts.

The development of *DeviceABLE* demonstrates Jora's technical skills and his awareness of social issues. By creating a free, accessible tool for people with disabilities, he shows a deep understanding of the broader implications of technology in society.

Jora's story also highlights the importance of nurturing young talent. The support from his family, school, and the broader scientific community has played a crucial role in his development. Jora Singh Nadal serves as an example of how young innovators can contribute meaningfully to technological advancement and social good.

Pathways to pain management through nature and nutrition

By Brandy Cook

Living with a disability, whether complete or incomplete, high-level or paraplegic, often puts pain management at the forefront of our minds. As someone 30 years post-injury, I've dealt with various levels of pain throughout my journey. In the early years after my accident, I relied heavily on pain medications—a necessary evil as I navigated life in a halo and hospital-loaned power chair.

Having been a quadriplegic for most of my life, I've explored many forms of relief as I experience more pain with passing years. What works and what doesn't? It depends on the individual, but I believe there are ways to manage pain that are free, non-addictive, and might even improve other aspects of your life.

A few years ago, I decided to help others. After 25 years of relying entirely on others for my care and quality of life, I needed to find something of my own—a way to give back.

I've always loved nature, food, cooking, and being outdoors. Now, I incorporate all of these to help others feel healthy, reconnect with nature, and relieve pain.

Nature and forest therapy

I became a Holistic Nutritionist and am pursuing a certification in nature and forest therapy with EcoWisdom Forest Preserve, a disability-led social enterprise focusing on accessible, inclusive approaches for promoting well-being through mindful nature connection. Working with people dealing with various levels of pain, we keep returning to nature and nutrition as key elements in pain management.

Forest bathing, a therapy practised for almost 50 years, can be enjoyed from the comfort of your home. Studies show that opening up the mind and senses to nature—whether it's a houseplant, a photo, a video, or simply the sky—can help with pain tolerance. Nature bathing has

been demonstrated to improve quality of life, especially for those living with disability and pain. It enhances physical health and reduces stress.

Beyond virtual nature experiences, simply viewing nature from a window can improve blood pressure, cardiovascular activity, muscle tension, and reduce hospital stays and medication use. Forest bathing programs are typically guided, prompting participants to notice their surroundings using their senses.

Research suggests that mindfulness can facilitate embodiment, resilience, and pain coping in those with chronic health conditions.



Brandy facilitating at an EcoWisdom/TFL/IFRC event in May 2024

Recently, I co-facilitated an EcoWisdom Accessible Nature Wellbeing Program in partnership with TFL and IFRC at VanDusen Gardens in Vancouver. Our participants with various disabilities experienced a guided mindful journey in nature, with most expressing a sense of relaxation and improved well-being afterwards.

When the weather allows it, I encourage people getting outside when possible. Trees and nature have healing properties, backed by science. Evolutionarily, the scents of soil and trees, along with bird sounds, have physiological effects on our bodies, invoking relaxation through associations with protection, food, and safety.

Immersive VR environments

Virtual reality offers another avenue for nature-based pain relief. By using pleasant sensory experiences to develop new neural pathways, VR can reduce pain through its influence on pain signalling pathways. It transports users into relaxing simulations, incorporating natural scenes, slow movement, guided sound, and breathing techniques to reduce stress and increase pain tolerance.

Nutrition as a healing tool

Nutrition is another powerful healing tool at our disposal. As a holistic nutritionist, I view the body as a whole, recognizing that pain often has an underlying root cause, frequently linked to inflammation. Incorporating beneficial foods and eliminating harmful ones can have a profound impact.

Here are some of my suggestions:

- 1 Add essential fatty acids (EFAs) to your diet. These are crucial for our neural "wiring". Start with flax meal, chia seeds, or hemp hearts in smoothies, porridge, or salads. If supplementing, ensure it contains both DHA and EPA.
- 2 Increase antioxidants to calm inflammation. Choose brightly coloured fruits and vegetables, especially purple ones like blueberries, purple cabbage, and red onion. Eat seasonal produce for maximum nutritional benefit.
- 3 Boost your water intake to an ounce per kilogram of body weight. This helps manage cortisol levels, reduce stress, and eventually aids in pain and inflammation control.

While adding these nutrients, also consider avoiding certain foods. Use high-quality oils like olive or avocado instead of processed ones. Limit overly processed and deep-fried foods, major contributors to inflammation. Reduce refined sugars, opt for honey (which has natural antibacterial qualities) and consume sweets sparingly.

Remember the importance of time in nature: research shows that two hours of mindful nature time per week significantly improves well-being.

Even pausing to enjoy houseplants can be beneficial.

Taking charge of your health can be straightforward. Small, gradual changes in diet and nature exposure can lead to significant improvements in pain management. I'm continually amazed by the results these simple changes can bring. We all seek agency over our bodies, and this approach to pain management through nature and nutrition is an excellent starting point.

Brandy is a graduate of the Canadian School for Natural Nutrition with a Natural Nutrition diploma and a Culinary Certificate. Visit Brandy's website: <https://www.vitaltimenutrition.ca>

She is also a Nancy Lear Scholarship recipient, selected and funded by EcoWisdom, to complete EcoWisdom's Nature & Forest Therapy Guide Certification.

For more info visit:

<https://tinyurl.com/2nzwar8b>



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Scan the QR code to make a meaningful impact.



AGM 2024

technology for living

Thursday, September 19 **6:00-7:00PM**

Join us on **Zoom** for our 2024 online AGM. Register in advance for this meeting at: <https://tinyurl.com/yenfbkr5>

After registering, you will receive a confirmation email containing information about joining the meeting.

For any technical support before or during the meeting please contact:

✉ tiltechs@technologyforliving.org
☎ 604.326.0175



We welcome special guest, **Monica Gartner**, actor, author, writer, speaker, and a long-time TFL member. This year she was the recipient of the 'Courage to Come Back Award'. She is currently finalizing some new, exciting TFL peer projects.

All required AGM documentation, including the Meeting Agenda, Meeting Minutes and the Independent Auditor's Report are publicly available on our website on the "ABOUT" page.

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