

# thespin

BRITISH COLUMBIA PARAPLEGIC ASSOCIATION

SUMMER 2011

## BEST FOOT Forward

Is there an exoskeleton in your future?





# Able to do more

No matter what your bladder and bowel needs are, Coloplast offers a full line of products to keep you going.

Coloplast focuses on developing products that increase the quality of life for people who use them. Our mission is to make life easier for people with intimate healthcare needs. Coloplast products are designed for quality, security, convenience and optimal health.

**New**



**Peristeen® Anal Irrigation is a simple way to empty the bowel, preventing bowel accidents and/or chronic constipation.**

See how Peristeen Anal Irrigation, SpeediCath and other intermittent catheters, male external catheters and urine bags can help provide greater independence and control to live life with confidence.

If you would like to try one of Coloplast's catheters or find out about our other continence products, please call our Consumer Support Team at 1-866-293-6349 or email at [ca\\_conspeg@coloplast.com](mailto:ca_conspeg@coloplast.com)

Ostomy Care  
Urology & Continence Care  
Wound & Skin Care

Coloplast develops products and services that make life easier for people with very personal and private medical conditions. Working closely with the people who use our products, we create solutions that are sensitive to their special needs. We call this intimate healthcare. Our business includes ostomy care, urology and continence care and wound and skin care. We operate globally and employ more than 7,000 people.

The Coloplast logo is a registered trademark of Coloplast A/S. © 2011-04  
All rights reserved A/S, 3050 Humlebæk, Denmark.



Coloplast Canada  
3300 Ridgeway Dr. Unit 12  
Mississauga, ON L5L 5S29  
1-877-820-7008

[www.coloplast.ca](http://www.coloplast.ca)



# contents

SUMMER 2011

## features

### 8 Best Foot Forward

Exoskeletons for people with SCI have moved from the realm of science fiction into commercialization.

### 14 Berg Knows Bikes

Al Bergman has parlayed a pre-injury passion for pedal power into a highly successful home-based custom bicycle business.

### 16 Kitchen Love Affair

Chef Cory Parsons provides his seven ingredients for an accessible and functional kitchen.

## departments

### 6 gear & gadgets

New products, devices and aids to daily living that might make a difference in your life.

### 7 events

Add these dates to your calendar.

### 12 research

The injured spinal cord can be trained and stimulated to operate critical body functions without brain involvement.

### 18 technology

The Neil Squire Society can help you get more comfortable with your computer.

### 20 opportunities

The Governor General's Canadian Leadership Conference is seeking participants with SCI.

### 22 last word

Keeping your wheelchair tire pressure optimized can make your life a lot easier.

## cover

Paraplegic Radi Kaiof demonstrates the ReWalk exoskeleton, made by Israel's Argo Technologies. Photo courtesy Argo Technologies.



# Community.

HERE AT BCPA, THE WORD "COMMUNITY" IS CENTRAL TO WHAT WE DO and what we're about.

We're building community in several different ways.

First, we're helping to make the communities we call home more accessible. With cities and towns across BC experiencing historically low vacancy rates and unprecedentedly high rental and purchase costs, housing remains as high a priority as ever. On May 5, BCPA was proud to share the stage with our partners Kits Neighbourhood House and the Province of BC at a groundbreaking ceremony for an innovative, accessible and affordable housing development in the heart of Kitsilano. During the event, Premier Clark announced \$6.7 million in funding for the project. Of the 30 units being built, 10 have been designed specifically for people with SCI and related physical disabilities. This project, scheduled for completion in spring of 2012, will allow people with SCI to live independently in the community of their choice.

We're also building community online, by embracing new technologies to extend the reach of our Peer services. In partnership with Tyze Personal Networks, we're creating a framework for personal, private, and secure online networks that help people to connect, care and contribute. These personal networks coordinate support activities and encourage involvement, providing a practical service that helps families, friends, neighbours and professionals to create a connected circle of care. Put another way, they create community. We are excited to be launching this service this summer. For more information, visit [www.tyze.com](http://www.tyze.com).

Building community also means working in a committed partnership with the other valuable agencies and organizations that provide services to people with SCI. We're excited about the reconnection of the BC SCI Community Services Network. Comprising BCPA, the BC Wheelchair Sports Association, the BC Wheelchair Basketball Society, the Neil Squire Society, and the Sam Sullivan Disability Foundation (and all of its associated societies), the Network is working together to find innovative ways to connect our members to each other's services and to find ways in which we can work together on our common goals.

Whether building community with bricks and mortar, through the ether with online networks, or through strengthening of invaluable relationships with supporters and partners, community resides at the core of BCPA's services and activities. The fact that you're reading this issue of *The Spin* means that you're an engaged member of BC's SCI community as well. When you're done reading it, please pass it along to someone you think would be happy to join our community.



Chris McBride  
Executive Director, BCPA



## thespin

*The Spin* is the quarterly magazine of the British Columbia Paraplegic Association (BCPA). An online edition of *The Spin* is available on the BCPA website [www.bcpa.org](http://www.bcpa.org).

Executive Editor..... Chris McBride  
Managing Editor..... Cliff Bridges  
Assistant Editor..... Jennifer King  
Design..... Cliff Bridges  
Contributors..... Maureen Brownlee, Fernando Romero

### SUBSCRIPTIONS

Free subscriptions are available for BC residents and health professionals:  
T: 604.324.3611 TF: 1.877.324.3611 E: [info@bcpa.org](mailto:info@bcpa.org)

### ADVERTISING

Advertising rates and a publishing calendar for *The Spin* are available online at [www.bcpa.org](http://www.bcpa.org), or by contacting:  
Gary Steeves E: [gsteeves@bcpa.org](mailto:gsteeves@bcpa.org) T: 604.326.1210

### SUBMISSIONS

Submissions, suggestions and comments are greatly appreciated—please email these to [thespin@bcpa.org](mailto:thespin@bcpa.org) or send by regular mail to:  
Assistant Editor, *The Spin*  
BC Paraplegic Association, 780 SW Marine Drive  
Vancouver, British Columbia V6P 5Y7

### COPYRIGHT

You are welcome to reproduce material from *The Spin* after gaining permission from the Executive Editor. All reproduced material must be appropriately acknowledged.

The opinions expressed in *The Spin* are not necessarily those of BCPA. Also, BCPA does not endorse nor is responsible for the products or services advertised within *The Spin*.

Publications Mail Agreement #: 40684573  
ISSN #: 1922-9445

Return undeliverable Canadian addresses to:  
BC Paraplegic Association, 780 SW Marine Drive  
Vancouver, British Columbia V6P 5Y7 T: 604.324.3611

To update/change delivery address, email [thespin@bcpa.org](mailto:thespin@bcpa.org) or call 604.324.3611.

### BCPA HEAD OFFICE

780 SW Marine Drive, Vancouver, British Columbia V6P 5Y7  
T: 604.324.3611 TF: 1.877.324.3611 F: 604.326.1229  
E: [info@bcpa.org](mailto:info@bcpa.org)

### REGIONAL PEER CONTACTS

Fort St. John: Lori Slater, Peer Volunteer  
T: 250.787.1912 E: [peervolunteerfsj@bcpa.org](mailto:peervolunteerfsj@bcpa.org)

Kelowna: Rob Roseberry, Peer Associate  
E: [rroseberry@bcpa.org](mailto:rroseberry@bcpa.org)

Nanaimo: Bert Abbott, Peer Associate  
T: 250.616.1186 E: [babbott@bcpa.org](mailto:babbott@bcpa.org)

Prince George: Brandy Stiles, Peer Associate  
T: 250.563.6942 E: [bstiles@bcpa.org](mailto:bstiles@bcpa.org)

Quesnel: Lynn Turner, Peer Volunteer  
E: [peervolunteerq@bcpa.org](mailto:peervolunteerq@bcpa.org)

Vancouver: Brad Jacobsen, Peer Associate  
T: 778.231.0713 E: [bjacobsen@bcpa.org](mailto:bjacobsen@bcpa.org)

Victoria: Scott Heron, Peer Associate  
T: 250.812.0773 E: [sheron@bcpa.org](mailto:sheron@bcpa.org)

Williams Lake: Kary Fell, Peer Volunteer  
T: 250.398.6425 E: [peervolunteerwl@bcpa.org](mailto:peervolunteerwl@bcpa.org)

**BCPA Info Line: 1.800.689.2477**





**More choices.**

**More solutions.**

**More from the heart of Hollister.**

**Plus de choix.**

**Plus de solutions.**

**Plus près du coeur de Hollister.**

**Hollister**  
 Call us toll free for a free sample.  
 Communiquer avec nous pour obtenir un échantillon gratuit.  
**1.800.263.7400**

**Advanced**  
 MOBILITY PRODUCTS LTD

**SPRING INTO SUMMER TUNE-UP SPECIAL**

**BURNABY/KELOWNA/NANAIMO - 1.800.665.4442**

**WWW.ADVANCEDMOBILITY.CA**

**ADVANCING YOUR MOBILITY,  
 KEEPING YOUR INDEPENDENCE IN MOTION**



**NEW 2011 HONDA & DODGE IN STOCK!!!**



**HAND CONTROL SPECIALISTS**



**permobil**

**NEW M300  
 IN STOCK**



**BRING IN YOUR WHEELCHAIR (MANUAL OR POWER), SCOOTER, VEHICLE LIFT OR ANY OTHER MOBILITY DEVICE  
 AND RECEIVE A 15% DISCOUNT ON PARTS AND LABOUR TOWARDS YOUR SPRING SERVICE TUNE-UP.**



**\*\*\*Appointments must be made through an Advanced Mobility Service Coordinator and are subject to date availability.**

**You must mention this coupon at the time of making the appointment. No drop ins. Self-pay clients only. No custom parts, modifications or repairs based on our sole/fair discretion. Service must be completed at one of our 3 facilities. Expiry 09/30 /011.**



### WHEELCHAIR SLIPPERS

RehaDesign's Wheelchair Slippers are an ideal way to keep your wheelchair's tires from tracking dirt into your home and marking floors and carpets, while keeping your hands clean. Made of soft artificial suede, they can be put on in just a few seconds—and you don't need to leave your wheelchair to put them on or take them off. Wheelchair Slippers can be installed over just your tires, or easily stretched over the pushrims as well. They come in a variety of colours, and can be cleaned in a regular washing machine. For more information, visit [www.grovergear.com](http://www.grovergear.com).

# Innovations

New products, devices & aids to daily living that might make a difference in your life...

### CAN-AM SPYDER

Bombardier's Can-Am Spyder roadster is now sold in more than 58 countries and enjoys a growing following of paraplegic (and even some quadriplegic) riders, thanks to its trademark stability (it's steered like a car and doesn't require the rider to lean during a turn). It isn't quite out-of-the-crate ready for someone with an SCI, but with an available semi-automatic push button transmission, it's close. The main modification required is relocating the brake control from foot level to the handlebars. Do a quick browser search and you'll find that many people have done this, including Ontario's Bernie Floto, shown in the photo below. There's even an Australian company providing a DIY kit. Other mods that might be required are footplates and a way to pack along your wheelchair (there are several YouTube videos dedicated to this). Visit [www.can-am.brp.com](http://www.can-am.brp.com) for details.



### PENAGAIN

People with quadriplegia who have difficulty holding or writing with a standard pen might want to check out the PenAgain, a wishbone-shaped ergonomic writing tool. Less hand strength is needed to control the PenAgain because the forefinger rests in the "U" shape, naturally holding it in place with little hand grip required. We've heard reports from several BCPA peers that, with practice, the PenAgain helped them make a real improvement in their penmanship. Visit [www.penagain.com](http://www.penagain.com) for more information.



### THE CADDY

The Nuprodx Caddy is a personal storage system designed specifically for wheelchair users. An innovative sliding mechanism allows the Caddy to be accessible when you need it and hidden behind your knees when you don't. The standard version conveniently holds your smart phone, keys, sunglasses, wallet, or catheters, while a slightly bigger version even has room for your iPad. It's made from durable black nylon, and has clear plastic zippered front, side and back pockets. The Caddy mounts to your wheelchair's cross-bracing with an aluminum clamp that can be adjusted for tubing from 7/8" to 1-1/4". An Allen wrench is included for installation. Visit [www.nuprodx.com](http://www.nuprodx.com) for more information.







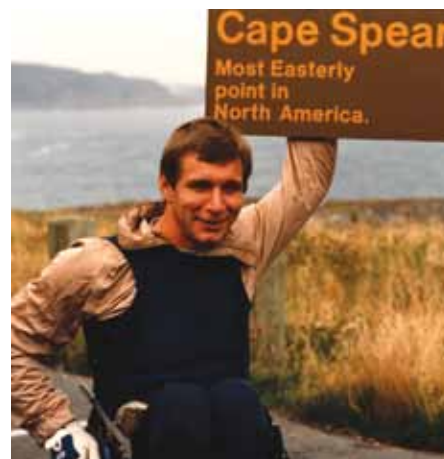
## Bus Stop Hop.

BCPA's 10th Annual Bus Stop Hop (BSH) takes place on August 7. Inspired by TV's *The Amazing Race*, BSH is a one-day team event that sees participants sprint across Vancouver using accessible transportation, completing fun activities and collecting points along the way. It's a chance to learn about accessible Vancouver. All participants receive a limited edition 10th Anniversary BSH T-shirt and a bag of goodies. Get hopping and register as an individual or team at [www.bcpa.org](http://www.bcpa.org). The BSH is a free event thanks to the support of TransLink.



## Ugly Ties.

In the final week of September, ugly ties will change lives during BCPA's first ever Ugly Tie Campaign. It's a fun and wacky way to raise awareness and funds for our Peer and Information Services programs. BCPA is asking Vancouver organizations and businesses to host an "Ugly Tie Day" in their workplace and sell "Ugly Tie" buttons (they're just \$5 each or \$20 if you'd like a tax receipt). For more information on how you or your workplace can support the Ugly Tie Campaign, visit [www.bcpa.org](http://www.bcpa.org) or check out our Facebook page (BCPA Peers).



## Rick's 25th.

Twenty-five years ago, Rick Hansen inspired an entire nation with his epic Man In Motion World Tour. This summer, Rick's 25th Anniversary Relay will retrace the Canadian segment of Rick's original Tour, engaging 7,000 participants from across Canada who have made a positive difference in the lives of others. The event kicks off on August 24th in Cape Spear, Newfoundland—the easternmost point in North America. To learn more about events in your area, or how you can celebrate or participate, visit [www.rickhansenrelay.com](http://www.rickhansenrelay.com).

## Bus Stop Hopping Changes Lives

Since 2002, more than 300 people have participated in BCPA's annual Bus Stop Hop (BSH). Now considered BCPA's signature event, the BSH gives people with an SCI or other physical disability the opportunity to take a spin on Vancouver's accessible transit system and gain greater independence in the process.

For Randeep Sharma, participating in last year's BSH was a life-changing experience. Sharma, an international student from Punjab, India, experienced a number of challenges as a newcomer with a SCI. From adjusting to our winter weather, to learning English and how to get from A to B, Sharma admits that it wasn't an easy transition and is thankful for BCPA's support.

"Seeing that I was struggling, my lecturer and supervisor recommended I contact BCPA for support and information," says Sharma, who arrived in 2009. "I was introduced to a number of wonderful people through BCPA, first in Prince George then in Vancouver. They helped me find my way."

Sharma admits he was reluctant to use Vancouver's transit system when he first arrived. "I knew it was accessible, but I had apprehensions," he says. "What if I got stuck? What if I'm too slow? Can I do it on my own? There was nothing like this where I'm from, so I kept postponing it and became totally dependent on the Handy Dart."

Sharma was encouraged to take part in the 2010 BSH. His team came in last, but he felt like a winner. "I'd had a breakthrough," he says. "I now use all the different types of transport on my own—it's a great feeling. I strongly recommend that people participate—especially any newcomers or people who have recently been injured. It really is easier than you think—you'd be surprised where you can go, even the False Creek Ferry is accessible. It's an important event."

For more information on the 10th Annual Bus Stop Hop, visit [www.bcpa.org](http://www.bcpa.org). For information on accessible transportation in other BC cities, contact BCPA's InfoLine toll-free at 1.800.689.2477.



# Best Foot Forward

Exoskeletons have emerged from science fiction to reality, with four companies rushing products for people with SCI to market. But will you be donning one anytime soon?

Exoskeletons have made for great movie fodder. *Aliens*, *Iron Man*, *District 9* and *Avatar* are among the Hollywood blockbusters which have prominently featured exoskeletons—robotic frames worn on the outside of the body to provide extraordinary strength to the wearer.

But exoskeletons are emerging from the realm of science fiction. Around the globe, organizations and companies are working feverishly to move prototypes into commercial production. Not surprisingly, some of these efforts are focused on military applications—for example, Raytheon is working on a prototype that promises to give superhuman strength and endurance to the soldiers.

Fortunately, a handful of companies have also honed in on the promise of exoskeletons as a mobility device for people with disabilities. Of these, four companies from three continents are already in the process of bringing a product to market for people with SCI: New Zealand's REX Bionics, Israel's Argo Medical Technologies, Japan's CyberDyne Inc., and Berkeley Bionics based in California.

Photo courtesy Rex Bionics



Collectively, these companies are creating a stir. In the absence of an incredibly elusive outright cure for SCI, their products hold the promise of getting people back on their feet in a world that remains largely inaccessible for wheelchair users. In the process, they offer the powerfully emotional experience of walking for some people with SCI who thought they would never do so again. And they may provide a number of secondary benefits—for example, physical health benefits associated with standing and walking as opposed to sitting and wheeling, and improved opportunities for employment and being active in your community.

#### Four Companies, Four Approaches

On the surface, the products from these four companies have a lot in common. They're all lower limb exoskeleton suits or frames made of materials which are lightweight but strong enough to support the weight of the wearer's body, to which they are securely strapped in place. They have a central processing unit which interprets signals from the wearer and translates them into commands that activate a series of joints that align with the joints of the wearer's body—at the hips, knees and ankles—in a sequence that mimics (to varying degrees) the movements of walking, sitting or standing. The exoskeleton joints are powered by either hydraulic or electric motors, with energy for both motors and data processing coming from rechargeable batteries.

Each company, however, has approached the challenge of restoring walking function for people with SCI in a slightly different way.

ReWalk, from the Israeli company Argo Medical Technologies, is perhaps furthest along the commercial pipeline. An institutional model is already being marketed to rehab institutions worldwide, although we weren't able to find out how many are actually in use. The user commands the ReWalk by first selecting which movement is desired—for example, climbing stairs or walking—on a wrist-mounted remote control. From that point, movement is controlled by the user's torso angle. Leaning forward activates a sensor in the chest, which in turn prompts the suit to step forward.

eLEGS, the American entry, appears to be similar in design, specifications and performance to ReWalk. Controlling the unit, however, is via arm gestures picked up by a sensor in one of the crutches. Berkeley Bionics also says eLEGS has the most realistic gait of any of the four exoskeletons—while it's unknown if this actually provides any performance improvement, it's almost a certainty that future exoskeleton users will gravitate away from products that appear to machine-like in favour of those with a more natural motion. eLEGS is only now beginning institutional testing in the US and won't be available for individual purchase until 2013.

HAL, short for Hybrid Assistive Lift, is perhaps the most intriguing of all the products. What makes it unique is its control system, which utilizes sensors on the skin of the target limb to pick up nerve signals from the brain. In a sense, the user controls HAL by thought. But HAL is being developed in several different formats for many different uses and users. For example, a full body version has been developed, which Cyberdyne envisions being used by caregivers or factory workers who require greater strength and endurance. So while Cyberdyne's website says its lower limb version is for people with SCI, it isn't clear how, if at all, the thought control system works for someone with SCI who might not be capable of sending a nerve impulse to the lower extremities. The company does say, however, that HAL does have a separate "robotic autonomous control system" that would appear to provide a computer-controlled walking motion. Unfortunately, it's difficult to find any references of HAL being used specifically by a person with SCI. It's currently available on a rental basis in Japan only.

Finally, there's REX, short for Robotic Exoskeleton. Made by New Zealand-based Rex Bionics, REX is considerably different from the three other products. It's the only exoskeleton that doesn't require crutches. That means use by a quadriplegic is possible. It's also operated by a simple joystick. The trade-offs for these features are bulkiness and heaviness, slow and machine-like operation, and the highest sticker price of all units (although the company recently made headlines for selling its first unit, to Kiwi Paralympian Dave MacCalman).

#### Reality vs. Sci-Fi

There's no doubt that some people with SCI have a powerful desire to walk and be eye level with the able-bodied population. And it seems reasonable that there must be some health benefits of using an exoskeleton, although there's not yet much in the way of scientific evidence to support this. But despite this, there appear to be many hurdles to widespread consumer acceptance of exoskeletons in their present form.

First and foremost is the high price and a corresponding lack

**“We’re just beginning to see the ultimate potential of the exoskeleton. But it will be very expensive and if no one buys it, we will never see it developed to its fullest potential.”**

of insurance coverage that seems a foregone conclusion. There are also limitations in speed and agility. Granted, the technology is in its infancy, but for now a powerful, agile and swift exoskeleton remains the stuff of science fiction.

So will consumers like you rush out to buy a bulky product that costs a small fortune, provides you with only a rudimentary walking function, and doesn't come close to the efficiency and agility of a wheelchair?

"I wouldn't at this point," says Dr. Jaimie Borisoff, a former member of Canada's Paralympic basketball team and a SCI researcher and bio-medical engineer at ICORD and BCIT. "They're slow and they're cumbersome. I'm kind of a 'function over form' guy. But I know there are some people who have a powerful desire to be standing. My fear is that they end up with a \$150,000 thing in their closet. All that being said, I love the concept and I love the future potential of the technology."

Borisoff believes that future generations of exoskeletons will be faster and lighter, have a more realistic human gait, and be much cheaper. The concern, he says, is how to get from A to B if consum-

ers don't support these early prototypes. "There is only a tenuous case for an SCI-specific application of exoskeleton technology," says Borisoff. "That's why I'm optimistic about HAL and eLEGS. HAL stems from the academic world and was developed within the context of a broader research program. The other benefit for HAL is that it may have a larger base of applications—spinal cord injury is perhaps a really small market for HAL, but the SCI version will benefit from models of the product being developed for more mainstream markets. And in the case of Berkeley Bionics, my understanding is that it's been funded by the US military and is developing the HULC military exoskeleton alongside eLEGS. Again, the SCI-specific application will benefit from broader application of the technology."

Like Borisoff, Dr. Gene Emmer believes in the potential of exoskeletons to be a "game changer" for people with SCI. Emmer is president of Med Services Europe, which represents Colours Wheelchairs in Europe and the Middle East. A deep personal interest led him to become somewhat of a lay expert on exoskeletons and publish [\[eton-suit.com\]\(http://eton-suit.com\), a non-partisan website dedicated to furthering exoskeletons for people with SCI.](http://www.exoskel-</a></p></div><div data-bbox=)

"A while ago, I wrote an article on the new exoskeletons," says Emmer. "That really got me interested in the technology and the potential of robotics for people with mobility disorders. But it also made me concerned about the possible risk of failure. I see strong connections between the exoskeletons and the iBOT, which was the most advanced wheelchair on the market. Yet, it was just too expensive and it did not sell."

"The exoskeleton is similar. It is amazing technology. We're just beginning to see the ultimate potential of the exoskeleton. But it will be very expensive and if no one buys it, we will never see it developed to its fullest potential. I'm hoping that the exoskeleton website will raise the awareness to this technology and help to stimulate demand so that development can continue. Development will mean lower prices and better technology."

Emmer says it's not important which exoskeleton comes out on top. "The important thing," he says, "is that it should not die." ■

## What did you say?

We asked our BCPA Peers on our Facebook page what they thought of the four exoskeletons. It turned out to be a lively discussion. Here's a sample of your comments:

"I'd be terrified. What if the thing(s) gives out halfway up a flight of stairs or worse up a mountain? It's HELL to rely on a machine unless one is guaranteed repairs and replacements as required and at USER's convenience—not the repairer's or some government office's. Here in BC, we'd have to submit legal argument each time the thing broke—no thanks." – Leonard Biblitz

"I think this system is in its infancy stage. It gives me hope that one day, if I am so lucky, I can walk down the aisle. If not at my wedding, then maybe when my children walk down that aisle." – Crystle Booth

"I think the technology looks promising. They still seem to move a bit slow. May be good for mitigating health issues such as pressure sores. You could do a good 'Robo Cop' for Halloween." – Pat Harris

"I've looked at a number of exoskeleton designs and (REX) looks great. I'd use one in a snap, given the opportunity. Unfortunately they are cost restrictive right now and slightly cumbersome, but time will take care of that. Wouldn't it be something if we could all try one of these or eventually 'rent' one for a few days?" – Lynn Turner

"It assumes we all have a burning desire to walk again, and cannot accept our lot, and get on with our lives...It is not at all practical for a working person managing their own business and having to use a car to go from point A to B...they would be bulky to go anywhere with." – Bruce MacLeod



## 1 ReWalk

**Company:** Argo Medical Technologies, Israel  
**Control:** Chest-mounted motion sensors determine the upper body's angle and movement, and signal the legs to move forward or backward. Buttons on a wrist-mounted control unit enable the user to select the mode of movement—walk, climb stairs, sit or stand up.

**Weight:** 18 kg

**Maximum Speed:** Approximately 3 kph

**Battery Life:** Up to eight hours

**Movements:** Walking, standing, sitting, climbing stairs, ascending/descending slopes

**Crutches:** Required

**Who Can Use:** Adults with paraplegia and other lower-limb disabilities who have functioning hands, arms and shoulders, and a healthy skeleton and cardiovascular system

**Current Status:** ReWalk-I, the institutional version, is currently available for purchase by rehabilitation hospitals and centres in Europe and in the USA. ReWalk-P, the personal version, will be available for purchase by private users at the end of 2011.

**Cost:** \$120,000 for ReWalk-I; \$78,000 for ReWalk-P

**Website:** [www.argomedtec.com](http://www.argomedtec.com)



## 2 eLEGS

**Company:** Berkeley Bionics, USA

**Control:** eLEGS interprets gestures made by the wearer's arm via sensors in crutches, and issues commands to the device's actuators to simulate a natural human gait.

**Weight:** 45 kg

**Maximum Speed:** 3.2 kph

**Battery Life:** Over six hours

**Movements:** Walking in a straight line, standing from a sitting position, standing for an extended period of time, and sitting down from a standing position

**Crutches:** Required

**Who Can Use:** Adults with paraplegia and other lower-limb disabilities who have functioning hands, arms and shoulders; have a healthy skeleton and cardio-vascular system; can self-transfer from a wheelchair to a chair; and meet height and weight requirements

**Current Status:** Launch to rehab clinics planned for 2011; launch to individuals tentatively scheduled for 2013

**Cost:** Cost to rehab clinics unknown; estimated price for individual users \$30,000 to \$50,000 (in 2013)

**Website:** [www.berkeleybionics.com](http://www.berkeleybionics.com)



## 3 HAL

**Company:** Cyberdyne Inc., Japan

**Control:** HAL uses sensors attached on the

skin of the limbs of the user to read electrical impulses from the brain, which are translated into commands to the motors/servos. HAL also has a "robotic autonomous control system" that provides human-like movement for people whose electrical signals are compromised (for example, those with SCI).

**Weight:** 15 kg (lower limb unit)

**Maximum Speed:** unknown

**Battery Life:** Up to five hours

**Movements:** Standing up from a chair, walking, climbing up and down stairs

**Crutches:** Required

**Who Can Use:** People with weakened muscles and by some people with disabilities due to stroke and/or spinal cord injury

**Current Status:** Currently HAL is only available as a rental unit use in Japan. Cyberdyne now has an office in Denmark and indications are that the company will launch in Europe in the near future.

**Cost:** Not currently sold; unit rents for ap-

proximately \$1,700 per month in Japan

**Website:** [www.cyberdyne.jp](http://www.cyberdyne.jp)

## 4 REX

**Company:** Rex Bionics, New Zealand

**Control:** Rex is controlled by a armrest-mounted joystick

**Weight:** 39 kg

**Maximum Speed:** three metres per minute

**Battery Life:** Two hours

**Movements:** Standing up, walking on flat surfaces and slopes, moving sideways, turning around, going up and down steps

**Crutches:** Not necessary

**Who Can Use:** Manual wheelchair users who can self-transfer, operate a joystick, and meet height and weight requirements

**Current Status:** Available for purchase in New Zealand. The company is seeking to expand to Europe, Australia and the USA.

**Cost:** \$150,000

**Website:** [www.rexbionics.com](http://www.rexbionics.com)

# Autopilot

New research suggests that the injured spinal cord can be trained and stimulated to operate critical body functions without brain involvement.

In 2006, Rob Summers was struck by a vehicle in a hit and run accident. The 25-year-old from Los Angeles was left with complete paraplegia—no motor control in his legs and only the ability to feel slight sensation below waist level.

Today, Summers is able to stand up, remain standing, bear weight for up to four minutes, and, supported on a treadmill, make repeated stepping motions (that's him in the photo below). He can also voluntarily move his toes, ankles, knees and hips on command. And he appears to have regained some bowel, bladder and sexual function.

Summers is the first subject in a research study led by Dr. Susan Harkema of the University of Louisville and Dr. Reggie Edgerton of UCLA. The study was published in the May 19 issue of the highly respected British medical journal *The Lancet*.

According to Harkema and Edgerton, all of this is the result of electrically stimulating Summers' spinal cord. The stimulus is sent from a small device, implanted just under his skin, to targeted nerves in the lumbar and sacrum area of his spinal cord via an array of implanted electrodes.

The research is based on the emerging realization that the spinal cord is "smart" and often doesn't require involvement of the brain to control some of the body's functions—for example, aspects of walking. "The neural networks in the lumbosacral spinal cord are capable of initiating full weight bearing and relatively coordinated stepping without any input from the brain," says Edgerton. "This is possible, in part, due to information that is sent back from the legs directly to the spinal cord."

Summers first underwent 170 intensive Locomotor sessions over three years, in which he was suspended above a treadmill with his legs and feet manipulated in a walking motion, over and over again. These sessions retrained the nerves in his spinal cord to recognize the motion needed to walk. By themselves, however, they did not restore any of Summers' functional abilities. That's where the electronic stimulation came into play. Three days after resuming the sessions with the device implanted, he was able to stand.

How does it work? While they're unsure of the exact mechanisms, Edgerton and Harkema make it clear that the stimulation does not mimic a command coming from the brain.

"The stimulation doesn't induce movement," says Edgerton. "It lets the spinal cord hear the information from the legs. This

sensory feedback from the feet and legs to the spinal cord facilitates the individual's potential to balance and step over a range of speeds, directions and level of weight bearing. The spinal cord can independently interpret these data and send movement instructions back to the legs—all without cortical (brain) involvement."

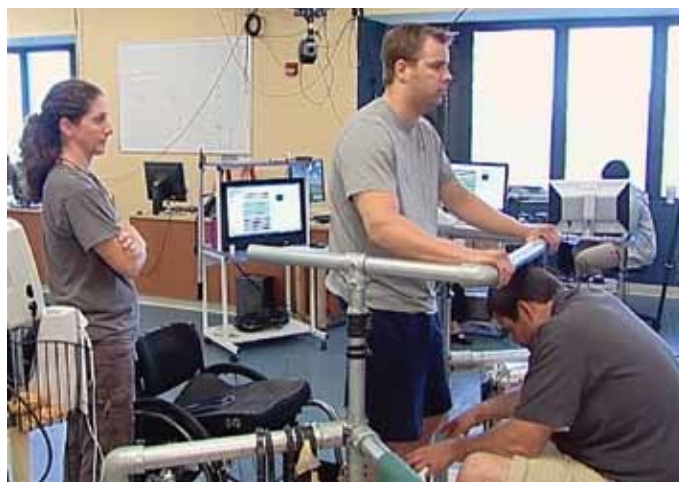
Harkema and Edgerton envision a day when at least some individuals with complete SCI will be able to use a portable stimulation unit to stand and take assisted steps—and perhaps get some relief from the many secondary complications of SCI.

But both make it clear: this is far from a cure. "This is a breakthrough," says Harkema. "But we have a long road ahead."

Edgerton agrees. "While these results are obviously encouraging, we need to be cautious. There is much work to be done."

To begin with, only Summers has been studied—and he was an athlete in extraordinary physical condition before his injury. Also, while Summers is technically a complete paraplegic, he had some sensation below his injury, and it's not clear if this had a bearing on the outcome. Edgerton and Harkema will try to replicate their success with Summers as they move forward with four more study subjects, as authorized by the FDA.

None of this serves to dampen Summers' enthusiasm. "This procedure has completely changed my life," he says. "For someone who for four years was unable to even move a toe, to have the freedom and ability to stand on my own is the most amazing feeling. To be able to pick up my foot and step down again was unbelievable, but beyond all of that my sense of well-being has changed. My physique and muscle tone have improved greatly, so much that most people don't even believe I am paralyzed." ■





# YOUR PARTICIPATION MAKES A DIFFERENCE!

A nation-wide survey to confirm the critical needs of Canadians with spinal cord injury (SCI) is underway.

Take the survey today!

[www.sci-survey.ca](http://www.sci-survey.ca)

# BergKnowsBikes

Cobble Hill's Al Bergman has parlayed a pre-injury passion for pedal power into a highly successful home-based custom bicycle business.



Photos by Stephanie Bergman



**SERIOUS CYCLISTS** in search of a perfect fit and superior craftsmanship are increasingly turning to custom bicycle fabricators. In BC, Berg Bikes has become a leader in this growing field in just five short years.

Based in Cobble Hill on Vancouver Island, Berg Bikes hand-builds up to 30 customized bikes a year. They range from superlight and sleek road racers to a full suspension, six-inch travel mountain monsters, all available in the customers' choice of specialty chromoly steel or titanium.

The man behind Berg Bikes is Victoria native Al Bergman, who became a paraplegic in 2000 after falling from a cliff during a forest firefighting training exercise.

"I mean really, a dude in a wheelchair building bicycles—that's pretty messed up!" laughs Bergman, 38.

The reality, however, is that Bergman comes by his love of bikes honestly. He got his first real mountain bike in 1995 and was so taken with racing that he set his sights on joining the sport's elite. By 2000, he was among BC's top ten mountain bike racers.

His accident put an end to his mountain biking aspirations, but didn't nearly extinguish his competitive spirit. He quickly excelled at wheelchair racing and competed in the 2004 Paralympics. Along the way, he finished a degree in education and a diploma in engineering technology, got married, and settled down with his wife Steph at a hobby farm in Cobble Hill, just north of Victoria.

In 2003, he made a career decision and signed up for a course at the United Bicycle Institute (UBI) in Ashland, Oregon.

"I went to the UBI course to learn how to weld thin-walled materials, as well as the process to manufacture a quality bicycle," says Bergman. "I expected to take this and apply it to handcycle construction. But when I was taking the course, I realized how much



I still loved bicycles—even though I couldn't ride them. I was pretty excited as I saw a window of opportunity to get back into bikes."

With his new goal in mind, Bergman spent the next few years buying and adapting equipment, converting a chicken coop on his acreage into a shop, and perfecting his craft by building bikes for family and friends.

In 2006, he opened the doors to Berg Bikes, and he's been creating two-wheeled masterpieces ever since.

"I can't think of a better feeling than seeing someone ride away on a beautiful bike that you just made," he says.

He concedes that Berg Bikes has had growing pains—for example, he's still working on his shop's accessibility. "It seems I never have time for myself in the shop," he says. "However, if you look around, quite often you can use or do simple things that make things work. For example, my milling machine is a 3,500 pound beast that I need to be at standing height to use, so I kneel on an office chair turned around backwards. I did make a standing frame for it, but that was dodgy at best in terms of stability. Or, for my lathe, I simply wheel up onto a stack of

plywood that puts me at just the right height to be able to machine parts in it."

He also says that, while he ensured he was skilled enough from the start to make a high quality product, he wasn't fully prepared for the all of the demands of operating a business. "If I were to do it over again, I would probably have taken an evening course in business management, as 'trial by fire' has been pretty expensive and time-consuming. Fortunately, my friends and family are very supportive of my business. And of course my wife has been a huge supporter."

Last year, the couple welcomed a new baby girl into their lives, and they've found that their home-based business is well-suited for raising a family. "It's a great situation to be able to work from home and be so close to my daughter," says Bergman. "And personally, I think working out of home is a great situation for anyone with an SCI. The flip side of the coin is that one can get trapped into never going anywhere—so I have to be careful with that too!"

As for his original goal of building a better handcycle, Bergman recently completed a prototype for himself, and doesn't rule out making handcycles for

others with SCI.

"After six years of building bikes, I'm finally really starting to explore the options here," he says. "Sadly, nothing ever happens fast enough, but I hope some day that you'll see some high quality adaptive equipment coming out of my shop. When I first had my accident, all I saw were problems with adaptive equipment, but now that I'm trying to do it myself, I definitely I have a lot more respect for the manufacturers of adaptive equipment! But I still see some areas that hopefully one day I will leave my mark in."

Bergman says he recently reflected on his ten years post-injury. "I couldn't have scripted a better story—meeting my amazing wife, representing Canada at the Paralympics, starting my own company and now having a pretty cool daughter. When I was first injured I definitely struggled with my identity. Obviously, it's quite a change. I know it sounds pretty cliché, but if you focus on the doors that open for you as opposed to the doors that were just slammed shut in your face by the injury, you'll be amazed at the opportunities that come your way." ■

*For details and contact information, visit [www.bergbikes.com](http://www.bergbikes.com).*

### Why a Custom-Made Bicycle?

The best answer to that question might come from a Berg Bike customer, who recently dropped AI this note for his website's blogspot:

"You know how home-made chocolate chip cookies are WAAAAAAYYYY better than store-bought chocolate chip cookies? So much better, in fact, that there really is no comparison! It's the same way with a custom Berg Bike versus a store-bought bike—no comparison! I love moist, chewy home-made chocolate chip cookies and I REALLY LOVE my superfast, superlight, supercool Titanium Berg Bike! It's exactly what I want in a bike—the perfect fit, the perfect suspension, high quality workmanship and just the right amount of bling. Best of all, the Berg Bikes are home-made by a supercool guy! Thanks All!"

— Jody





# Kitchen Love Affair

Seven ingredients for an accessible and functional kitchen that inspires your creativity and maximizes your independence.

■ By Cory Parsons

In the 13 years that have passed since the diving accident that left me quadriplegic, I've found myself happier and more in love with the world and with myself. It really sounds crazy, but it couldn't be truer. One of the reasons for this is that I've never lost my passion for food and cooking. Prior to my injury I was a proud owner of two successful restaurants. Carrying cases of wine up and down stairs until 2 AM clearly lost its appeal post-injury, but I've reignited my culinary love affair in many different ways, including writing a best-selling cookbook, *Cooking with Cory*.

Success as a chef has meant adapting my thinking—and my kitchen. Through trial, error and success, I've discovered how to create an inviting, accessible, functional, and fun kitchen environment. While every home and every set of personal circumstances present different challenges, there are some central concepts that are important to develop a truly accessible kitchen—one that maximizes your independence and creativity. What follows are my top seven suggestions for aspiring home chefs with SCI.

**1. UNDERCOUNTER ACCESS.** The most important aspect of working safely in your kitchen is to be able to sit closely to your cooktop, kitchen sink, and workstation. Achieving this as

a wheelchair user means you'll need access under the counter tops where all of the above are located. So you'll need to designate a counter location in your kitchen that will be completely free of under-counter cabinets.

**2. CENTRAL WORKSTATION.** You'll need to decide the location of your workstation—essentially an open counter space large enough to accommodate your cutting board with a few inches to either side. Ideally, your workstation will be between your sink and cook top, and in this way you're able to access water, chop your ingredients and cook them from a stationary position—or with as little repositioning or wheeling as possible.

**3. ROLLOUT DRAWERS.** For wheelchair users (and probably anyone else, for that matter), nothing works better than rollout drawers. Not only do they maximize storage space, they make a cook's life so much easier when it comes to accessing pots, pans or cooking implements. Needless to say, undercounter cabinets with doors and shelves are out.

**4. SMOOTH TOP COOKTOP.** Cooking with gas is great, but for wheelchair users, I've found that a smooth top infrared cooktop is the best option. It allows me to easily slide pots or pans on or off the cooktop. Clean up is also so much easier.

**5. WALL OVEN.** Since you've opted for a cooktop instead





of a range, you'll need to install a wall oven that's high enough from the floor so that you have full access when the door is open, but not so high that you can't access the controls. Some wall ovens have a "barn door" style opening—ideal because you can sit right in front of it when the door is open.

**6. GETTING A GRIP.** Different levels of injury bring different requirements for anything you grab in your kitchen—your appliance's controls, drawer pull handles and faucets. The best advice I can offer is to visit your local hardware store and get your hands on everything to see what works for your needs. Personally, I really love the look of digital cooktop controls, but because of my lowered hand function, they're difficult for me to operate and I've since switched back to the knob-style controls. A new faucet has come on the market that only requires a light touch—when my hands are covered in food, it's an excellent feature for ease of use and keeping the kitchen clean.

**7. ACCESSORIZE SMARTLY.** Many paraplegics won't need to give too much thought to their choice of kitchen tools other than buying the best quality they can afford. Those like me who have a little less hand function need to be more selective. In the last issue of *The Spin*, I told you about my discovery of the Ulu, an Inuit skinning knife. The rounded blade of the Ulu has made an incredible difference for my precision and safety, whether I'm chopping or slicing. The rounded blade allows for excellent contact with ingredients and the horizontal handle position

works great for people with lowered hand function. All of my other utensils have rubber handles for easy handling, and my pots and pans have rubber inserts under their handles for greater control. Occasionally I need to open a can, and because chewing them open wasn't an option, I discovered an excellent automatic hands-free can opener called "One touch". The same company has launched another opener for jars—I love preserved summer fruits, and now I can independently open dessert by myself. These are just a few examples of how you can accessorize your kitchen with tools that work for you.

My final advice? Be passionate about cooking. Nutrition and healthy eating are important for all of us—and arguably even more critical for those of with SCI. So if you've got to do it, why not do it well, have fun and wake your creative genius at the same time? Remember, it's never a matter of if, it's always a matter of how! ■

*Cory Parsons is a Nanaimo-based chef, author, nutritional counsellor, motivational speaker and accessible kitchen design consultant. His book *Cooking With Cory! Inspirational Recipes for the Fearless Foodie* was published in October 2010 by Whitecap Books in North Vancouver, printed in Canada, and is now sold at Costco, Save On Foods, and Chapters. If you have any questions about Cory, his cookbook, or the services he offers, or if you'd simply like to share your experiences with him, contact him through his website ([www.coryparsons.com](http://www.coryparsons.com)).*



# Computer Comfort

Has the technology train left with you still sitting at the station? The Neil Squire Society can help.



In this day and age of texting, tweeting and blogging, it's easy to assume that everyone is comfortable at a computer keyboard.

Here at BCPA, we know different. Many of our peers, particularly those injured later in life or residing in rural communities, aren't up to speed when it comes to modern computing. When you factor in specialized equipment that some people need—for example, voice recognition software or specialized input devices—the problems are amplified. The result is that many British Columbians aren't able to take advantage of technology that is becoming increasingly important for post-SCI careers, networking or simply connecting with friends and family.

The Neil Squire Society, one of our most valued partners, can help. One of the Society's most in-demand programs is Computer Comfort. As the name suggests, people with SCI and other disabilities can access the free program to gain computer and software literacy. They can either train at the Society's technology classrooms in Burnaby, or take part from anywhere in the province via distance learning.

Getting started is as simple as calling and making an

appointment, says Munesh Raman, program coordinator.

"A key to the CC program's success has been its ability to be flexible in meeting the varying needs of people with disabilities," says Raman. "We start by doing an intake assessment to determine an applicant's skill level and eligibility. Next, we determine what time works best for them and what volunteer to match them with. Then, depending on their disability, they may also need to be assessed to determine what accessibility technology they require, such as special keyboards or speech programs. Training is once a week for two hours, usually for about four months."

Participants who aren't able to afford a computer for their home can also apply for a free computer from the Society's Computer Refurbishing program (see sidebar). Any special equipment they need is available for them to use during their classroom sessions. "That way, they get to know the equipment and determine if it would be useful for them at home," says Raman. "If they can't afford the equipment themselves, they can apply for funding through the Equipment and Assistive Technology Initiative (EATI), operated by the BC Personal Supports Network and funded by the BC government."

Raman says that confidence and self esteem quickly improve among participants once they begin to gain knowledge. "The acquisition of computer skills not only gives participants a new skill set, it reaffirms in them that they have the ability to learn new things. Also, for some participants the Computer Comfort program can provide a much needed social outlet where the time spent with other people is as valuable as the computer skills being learned."

Kent Goulet, president of the Canadian Disabled Individuals Association and a BCPA peer volunteer, is a former Computer Comfort participant who is now taking an Associate Web Technologies course at BCIT. "I found Computer Comfort was a great place to start and it helped me reconnect to the world around me, through the use of computers," says Goulet, who sustained an SCI in 1999. "I highly recommend it."

For more information, visit [www.neilsquire.ca](http://www.neilsquire.ca) or call 604.473.9363 (toll free 1.877.673.4636). ■

## WANTED: YOUR OLD COMPUTER

As a Microsoft Registered Refurbisher, the Neil Squire Society accepts donations of used computers which are refurbished and provided to people with disabilities for free. The Society refurbishes an average of 115 computers a year. In the process, nearly two tons of e-waste are kept out of BC landfills.

Program staff use stringent data-wiping standards to ensure your privacy and security aren't compromised. They then install genuine Microsoft software on all refurbished computers before finding a suitable home for them.

"Most of our clients can't afford to buy a computer and so they receive a refurbished one from the program as soon as they feel comfortable enough to use it," says Munesh Raman, Computer Comfort program coordinator. "Without the Computer Refurbishing program, these clients would not have anything to practice on at home and would have forgotten everything they learned in the previous lesson by the time they return to the Society."



# Supporting your independence.



At Regency Medical Supplies, we're proud to have supported the independence of BCPA members and people with spinal cord injuries for more than 45 years. Today, we're still your specialist for daily care needs and mobility equipment. If you're in the Lower Mainland, please stop by our 6,000 square foot showroom to learn more about the products we carry. If you're anywhere else in BC, shop online at [www.regencymed.com](http://www.regencymed.com) or call us toll-free at 1-800-663-1012 to speak with a customer service representative.

- Coloplast/Mentor Condoms & Catheters
- Tyco/Kendall Catheters & Condoms
- Med-RX Intermittent Catheters
- Bard Urology Products

- Urocare Condoms & Leg Bags
- Rusch Urology Products
- Hollister Condoms & Leg Bags
- Golden Drain Condoms



**Regency**  
MEDICAL SUPPLIES

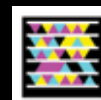
Putting people first since 1966.

4437 Canada Way, Burnaby BC V5G 1J3  
Within BC's Lower Mainland: 604-434-1383  
Toll free within Canada: 1-800-663-1012  
[www.regencymed.com](http://www.regencymed.com)

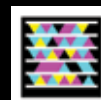
## Put safety in your toolkit.

Safety knowledge is the most important tool you bring to the job. Now you can access industry-specific safety and ergonomics tips, instructional videos, downloadable safety booklets, and other information from your smartphone. Visit [worksafebc.com](http://worksafebc.com) and learn how to keep your workplace safe.

Scan the MS tag with your smartphone to view:



Downloadable  
safety booklets



Instructional  
safety videos

**WORK SAFE BC**



# Follow the Leaders

**M**any prominent Canadian leaders have something in common—they are alumni of the Governor General's Canadian Leadership Conference, or GGCLC. The GGCLC is accepting applications for the 2012 event until September, and if you're someone with an SCI who aspires to be a leader in your community or career, a golden opportunity awaits.

The GGCLC was created in 1983 to improve decision-making abilities among young Canadian leaders who appear destined to occupy high level positions in the near future. Those selected come from different regions of Canada, different perspectives and different careers. Each conference is designed to pack the most intense experiences of life in Canadian industry and community into a unique two-week event. Travel, discussion and

debate, study of regional communities and businesses, and opportunities to meet prominent Canadian leaders are all central to the GGCLC.

Vancouver lawyer Ken Kramer, who is a member of the GGCLC national executive and selection committee, says that people with SCI and other disabilities are strongly encouraged to apply. "The GGCLC strives to be inclusive of all Canadians," says Kramer, a 2004 GGCLC alumni who has spinal muscular atrophy. "In the past, many people with SCI from BC and elsewhere in Canada have successfully taken part—and have gone on to become great leaders in their respective fields."

An excellent example is The Honourable Stephanie Cadieux, BC Minister of Labour, Citizens' Services and Open Government. Cadieux is an alumni of the 2008 GGCLC and has since become one



Stephanie Cadieux, MLA

of our province's most respected young leaders. "Participating in the 2008 GGCLC has to have been one of the most outstanding opportunities for personal growth that I've experienced," says Cadieux. "It was an opportunity to learn about what makes Canada such a wonderful country, to reflect upon the things which we often take for granted, and to develop intellectually as a Canadian—as a leader, and as a person."

For more details on the 2012 GGCLC, visit [www.leadershipcanada.ca](http://www.leadershipcanada.ca). ■

## Bits & Bytes

### Learn Online About Managing Your Own Care

BCPA, in partnership with the BC Ministry of Health, has developed an online workbook for people with disabilities so that they have the information needed to apply and, if successful, manage the transition to Choice in Supports for Independent Living (CSIL). CSIL is an alternate way for home support clients to receive services. The goal is to provide more choice and flexibility to people with disabilities who have high-intensity care needs. CSIL employers receive funds to purchase their own home support services; they are responsible for recruiting, hiring, training, scheduling and supervising their own home support workers. Under CSIL, the person with the disability assumes the role of an employer with all of the rights and responsibilities that involves. The free online workbook is available at [www.bcpa.org](http://www.bcpa.org).

### TYZE to Provide SCI Circles of Support

BCPA has recently been granted funding from the McConnell Family Foundation to enlist Tyze as a key online tool to help people with SCI stay connected. Tyze provides super-secure, private, personal, online networks that help groups of people connect, care, collaborate and contribute to improve a person's wellbeing.

"We know that creating opportunities for peer connections is one of

the most important and lasting aspects in overcoming the challenges and barriers people with SCI face throughout their lives," says BCPA executive director Chris McBride. "With Tyze, we can increase our reach to ensure our members across the province have the circles of support they need." We hope to have Tyze networks up and running in early July. To learn more about Tyze, visit [www.tyze.com](http://www.tyze.com).

### Looking for Wheels?

Are you looking for a new accessible vehicle? The National Mobility Equipment Dealers Association (NMEDA) recently launched a new educational website that strives to teach consumers how to search for and buy accessible vehicles through simple step-by-step instructions. Features of the new website include product videos, weekly blogs, safety and government funding information, a list of industry terminology, and buying information for purchasing in the United States or Canada. The website also showcases articles from consumer publications such as Ability Magazine, Active Living Magazine, InMotion and Sports 'N Spokes, and has a Dealer Locator section that uses the consumer's postal code to find the location of the closest Quality Assurance Program dealer. NMEDA is a North American non-profit organization that strives to ensure quality and professionalism in the manufacturing and installation of transportation equipment for people with disabilities. For more information, visit [www.nmeda.com](http://www.nmeda.com).

# More than just numbers.



- CSIL bookkeeping services
- Fully computerized bookkeeping and payroll services for small to medium-sized businesses
- Personal and corporate tax preparation
- Provincial and federal fuel tax rebate
- Customized service to meet your needs
- Pick-up and delivery available

**I'm Walter Gagen. Call me – I'm able!**

(604) 597-5100 Toll Free (866) 277-2745 Email [wgagen@telus.net](mailto:wgagen@telus.net) Website [www.gagen.ca](http://www.gagen.ca)

Meeting  
your  
needs



Sleep well.  
Live well.



...adding  
colour  
to life



Supporting  
the SCI  
Community

The Park Inn located close to VGH, BC Cancer and minutes to GF Strong and BC Children's Hospital would like to thank the SCI Community for the patronage. Ask about our Hospital Rate for patient travel.

[www.parkinn.com/vancouverca](http://www.parkinn.com/vancouverca) - 604-872-8661

Park Inn & Suites Vancouver  
898 West Broadway

**park inn**  
®  
& suites

# Get Pumped!

Optimize your tire pressure to keep your energy elevated and your shoulders injury free.



Chances are your ride has pneumatic tires—the kind you need to inflate. Not only do they smooth the bumps better than solid insert or solid tires, they're easier to roll. But unless you maintain optimal pressure in your tires, you're not reaping this benefit.

Dr. Bonnie Sawatzky, ICORD investigator and associate professor in the Division of Spine at UBC's Department of Orthopaedics, has examined wheelchair pressure in several studies. Notable amongst her findings is that tires deflated to 50 and 25 psi from the recommended 100 psi resulted in an increase of energy expenditure of 12.2 % and 24.1% respectively. So failing to keep your tire pressure topped up means less gas in your tank at the end of a wheeling day, and more likelihood of sustaining a dreaded repetitive strain injury, or RSI.

Regardless of whether you use standard low pressure tires, off-road tires or the increasingly popular high pressure "clinchers", there's only one way to keep your pressure up: regular pressure checks and filling.

"In order to offset the early onset of RSI of the shoulder, elbow and wrists, we recommend that wheelchair users keep their tires inflated at the recommended tire pressure and re-inflate their tires every month," says Ian Denison, a physiotherapist and equipment evaluation specialist at Vancouver's GF Strong Rehabilitation Centre. "Air loss from most tires occurs due to porosity of the rubber. Tires lose about 40% of their initial pressure over 40 days."

If your strategy is to fill your tires when you feel it's getting harder to wheel, think

again, says Denison. "Increased rolling resistance is difficult to perceive because it creeps up on you slowly," he says. "The bottom line is that if you haven't filled your tires in a month, they're low."

He adds, however, that there's an easy way to test your pressure without a gauge, particularly if you use high pressure tires: if the tire deflects when you press it, it needs air.

While regular monthly filling is the norm for healthy tires, more frequent filling may be a sign of a problem such as a damaged valve—or a valve stem that simply needs tightening (this can be common on new tires). You can tighten the valve stem with a slotted valve cap or special tool available at most bike shops, but remember not to overtighten. New valves for your wheelchair tires can also be had at most bike shops.

So how and where to carry out your monthly tire inflation? Denison says that hand-pumping today's higher pressure tires can be difficult without a specialized pump. "Garage air lines are the easiest option. But remember that these pumps are usually set at 80 to 100 psi, so be

careful when filling pneumatic casters, which are often rated at just 36 psi."

If you want the convenience of filling at home, consider a small garage compressor package. These can be bought with air hose and accessories for as little \$100 from Canadian Tire and other retailers. Another option is a mini compressor which plugs into your vehicle's 12 volt accessory outlet. Remember, however, that these take a while to fill a high pressure tire and are on the noisy side. Regardless of the compressor you choose, remember to set your compressor's regulator to no more than your desired pressure, or check your progress with a tire gauge. Wheelchair tires—particularly the high pressure variety—are easily damaged by overfilling. Inflation guidelines are printed on the side of your tires.

Keeping the pressure up is also a consideration for power wheelchair users. While there's obviously no impact on your body, low tire pressure will have a direct bearing on how far a charge will take you and create more strain on your motors and drive system.

So get pumped—and stay pumped. ■

## Tire Tips

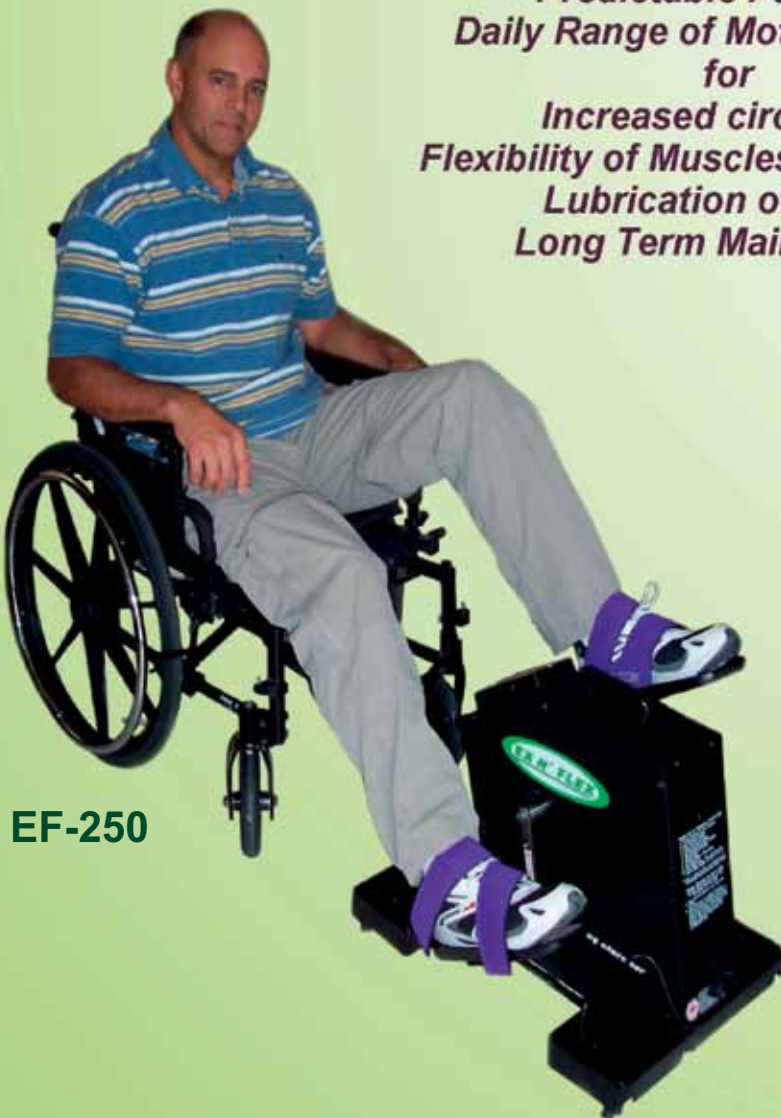
- Keeping tire pressure up is good for your health, but it's also the best way to extend the life of your tires—higher pressure makes it more difficult for sharp objects or rough terrain to damage the tire.
- Buying new high pressure tires? Remember that some tires have Presta valves, commonly used in racing bicycle tires. You'll need an adapter to fill these, as opposed to those with Schraeder valves like those used in a car.
- Got a flat strategy? Murphy's Law dictates that you should be always be carrying the exact spare tube you need, along with a small hand pump. An alternative is a product like Pennzoil's Fix-a-Flat, which you spray into your flat tire to temporarily fix the leak and provide enough inflation to make it home.



# EX N' FLEX

*passive/active therapeutic exercise  
Movement for LIFE !!*

*- 6 Unique Machines -  
Predictable Patterned  
Daily Range of Motion Therapy  
for  
Increased circulation  
Flexibility of Muscles and Tendons  
Lubrication of Joints  
Long Term Maintenance*



EF-250



EF-300

*Reduced  
Spasm and Swelling  
Stiffness and Atrophy*

*Ideal for  
Para & Quadriplegia  
Multiple Sclerosis  
Strokes*

**30 Day money back guarantee, Call**

# 1 (888) 298-9922

website: [www.exnflex.com](http://www.exnflex.com)

email: [info@exnflex.com](mailto:info@exnflex.com)

# women's U25 2011

## WORLD WHEELCHAIR BASKETBALL CHAMPIONSHIPS

July 15th – 21st, 2011

Brock University, St. Catharines, ON

*Eight countries from around the World will display their  
skills and talents on the court in hopes of claiming  
the title of first ever Women's U25 World  
Wheelchair Basketball Champion!*

CANADA

AUSTRALIA

USA

SOUTH AFRICA

GERMANY

GREAT BRITAIN

MEXICO

JAPAN

## PUSH YOUR LIMITS!

*Presented By*



Products that work.  
[49Bespoke.com](http://49Bespoke.com)



**KENDA**

