Individuals with spinal cord impairments are like everyone else when it comes to shopping. You want to know what is available, so you can buy products that best fit your needs. This concept is easier when it comes to grocery shopping because most all of your choices are at the local market. However, shopping for durable medical equipment and supplies is different. You cannot find all of the available products - not to mention the best price - at the local medical supply.

You have to join the Internet evolution if you want the best shopping choices. The Internet is the ultimate shopping center. You can buy anything from daily living aids to urinary supplies; you can compare prices to get the most for your money; and you can get most items delivered right to your door. You can probably shop the Internet for most all of the everyday products that you are already buying. You might also find some very innovative, useful items that are not found anywhere else.

Reachers and grabbers are another potential aid to daily living. There are a number of available types of reachers that are helpful for reaching objects in low and high places. For a long time, reachers were only usable by individuals with good hand function. However, The Cripper is a reacher/gripper designed for people who have only wrist function, which includes most people with C6 level of impairment and below. Although The Cripper may work for you if you have a C5 level of impairment, your best option is probably the Vee-Zee C5 Reacher. It is operated from a T-shaped toggle lever, and the grasp can be operated by mouth by attaching a cord to the toggle.

There is also a growing number of available products to make home life easier without a lot of effort or home modifications. For example, the Port-A-Bar allows you to have grab bars in your bathroom without drilling or stud location. This device uses suction-cup technology.

This issue of Pushin’ On is devoted to highlighting a few items found on the Internet. You may or may not find these items useful, but you will learn about some of the new and innovative products.

Aids for Daily Living

Most everyone with SCI is interested in products that make life easier. For individuals with limited mobility, the simple act of using the telephone can be difficult. The RC200 Remote Controlled Speakerphone from Ameriphone is one of the most accessible phones available. It offers a wireless remote for dialing, voice-activated answering and hands-free speakerphone. You can buy accessories such as a head set and lapel microphone, an air switch that allows users to operate the phone by blowing on the air sensor, and a pillow switch that allows users to operate the phone with their head, chin, arm, leg or other body movement.
to attach grab bars to almost any fiberglass shower or tub. The Port-A-Bar is portable, which means you can take it anywhere. Offset door hinges (also known as swing clear hinges) can be another easy home addition. These hinges are made by a number of manufacturers and attach doors to their frames in the same way as standard hinges. Wheelchair access is easier because the door swings completely clear of the frame. This widens almost any doorway by as much as 2 inches without replacing the door or frame. If you have a problem unlocking or opening the door to your house, you can even purchase remote controlled door locks and door openers from a number of different makers.

**Manual Wheelchairs**

Anyone shopping for a wheelchair can find [www.WheelchairNet.org](http://www.WheelchairNet.org) useful. It is the perfect starting point if you are interested in buying a wheelchair. You simply go to the WheelchairNet web site and click on “Products and Services” to find a vendor list for wheelchairs and accessories.

If you think most manual wheelchairs are alike, think again! Selecting a manual wheelchair is much like shopping for a new pair of shoes. If you want a wheelchair for general, everyday use, there are thousands of combinations. You have a choice of brands, styles, frame types, suspensions, casters, tires and wheels. If you are looking for a sports chair, you can select from a variety of wheelchairs that are specifically designed for the sport you want play.

It is impossible to highlight all of the available manual wheelchairs and options because there are literally millions of combinations. Instead, it is best to review some of the more recent innovations. The use of titanium in frame construction is one of the best innovations in wheelchair design. Titanium offers a strong frame in a light weight package. For example, titanium wheelchairs weigh an average of about 16 pounds. Most other "lightweight" wheelchairs weigh 22 pounds or more. The reduced weight of titanium helps reduce muscle and joint strain associated with pushing and lifting a wheelchair. Thus, you might prevent or better manage chronic pain.

Push-assist devices are another recent innovation for manual wheelchairs. These devices attach to the rear wheels and decrease the strength and endurance needed to propel a wheelchair. This makes it easier for people with higher levels of impairment to push a wheelchair. People with lower levels of impairment might use the devices to further reduce muscle and joint strain.

There are currently two types of push-assist devices. The Independence iGlide and E•Motion are examples of push rim power assist systems. When users push their manual wheelchairs, motors attached to the push rim help propel the wheelchair. Although the push-rim power systems make pushing much easier, the systems add weight to the wheelchair making it harder to lift. The second type of push-assist device is a lever-activated driving and braking system. Known as the Wijit, this device also works by "amplifying" pushing power. The levers are built into specialized wheels that replace your standard rear wheels. The wheels come in various colors and fit most popular brand name manual wheelchairs. The current Wijit models include the "Beauty" for smooth everyday use and the "Beast" for off-road use.

The next generation of manual wheelchairs may be more multifunctional. Although not yet available for sale, the Endeavor may be a glimpse into the future of ultra-light wheelchairs. The Endeavor features a super compact design, rigid frame, forward-folding collapse mechanism along with adjustable back, seat and axle positions. However, the Endeavor also has “flip-down” wheels positioned underneath the seat. When the regular rear wheels are detached, the flip down wheels can be deployed. This feature makes the Endeavor much more narrow than a standard wheelchair. In fact, it can pass through almost any narrow entrances such as a hallway and airplane aisle. Plus, the entire wheelchair can collapse for storage in the overhead compartment on a train or airplane.

**Power Wheelchairs**

In earlier years, power wheelchairs looked like “classic” manual wheelchairs with a joystick. There were few
options. Luckily, times have changed. Today's power wheelchairs come in a variety of styles and colors. There are options such as power seat tilt and recline, variable speeds and controls, and front-, mid- or rear-wheel drive, to only name a few.

A growing number of power wheelchair users are now standing again thanks to a number of different wheelchair manufacturers offering a sit-to-stand option. Although Levo and LifeStand are companies offering both manual and power wheelchair models, most standing options are found on power wheelchairs. Permobil offers a front-wheel drive power wheelchair with a standing option. VERTRAN is another front-wheel drive with a standing option, and it also has one of the lowest seat-to-floor heights you will find on any power wheelchair with or without a standing option. The Redman offers a rear-wheel drive, and Balder USA offers both front- and rear-wheel drive models with standing options.

If you are an outdoor person, you may prefer a more "rugged" power wheelchair. Permobil’s TRAX is a rear-wheel drive power wheelchair with 4-wheel independent suspension and a unique adjustable wheelbase length for added stability during outdoor use. OmegaTrac offers a front-wheel-drive power wheelchair with optional 4x8 inch all-terrain tires. OmegaTrac’s suspension can be adjusted to give up to 5 inches of ground clearance. Finally, the Extreme Force is a true 4-wheel drive. It has 4 motors powering 4 huge knobby tires to allow users to easily drive over curbs, in snow and on sand.

One of the big issues with power wheelchairs is that they are virtually impossible to transport in a car. This fact limits most power wheelchair users to riding in vans. The answer to this problem may be available soon.

The Advantage looks like it belongs on the set of the next “Star Trek” movie. The Advantage is fully modular, which means the chair is easily taken apart and put back together. This is a rare feature among power chairs. The chair is reportedly designed for indoor and outdoor use and comes with an adjustable suspension. However, the Advantage is not yet available, so it is still unknown as to whether or not this power wheelchair will be widely useful. It may have a high seat-to-floor height, long wheel base, and large pneumatic tires that may be great for the outdoors but may limit its indoor operation. Plus, it is not clear if the wheelchair will have flexible seating options such as tilt and recline. Still, the Advantage is beautiful machine.

Unless you have been on a 5-year survival expedition in Siberia, you have no doubt heard of the revolutionary Independence iBOT 3000 Mobility System. Without pointing out too many details, it is the most technologically advanced power "wheelchair" ever made. The iBOT features a unique 4-wheel drive system that can actually rise and balance on two wheels to put users closer to eye-level with able-bodied friends. Even more remarkably, the iBOT can climb stairs! Such abilities are obviously desired by consumers, but the iBOT has limitations. First, the price is near $30,000 and may not be covered by insurance. Second, the iBOT comes "as is." There is currently no tilt or recline seating options; it reportedly sits very high making it impossible for many users to ride in most minivans or get their knees under most tables; it can only be operated by a joystick; and it has a very wide turning radius. This lack of flexibility is a problem for many potential users. Hopefully, the second generation of the iBOT can correct some of these usability problems and improve its consumer marketability. Nevertheless, the iBOT is amazing!

**Conclusion**

Although you do not want to buy a wheelchair without first being evaluated by a professional, the Internet can be very useful in learning about product features and options. You might get feedback from other users via message and bulletin boards. Also, some web sites offer suggestions for insurance reimbursement.

This article is not intended to endorse one product over another. Instead, it is intended to give you some ideas on what is easily found on the Internet. You will almost certainly find something you can use if you simply take the time to explore what the Internet offers. There is much to discover, and you may be very surprised by what you find.

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**Note**

Internet Resources for this article are on page 8.
The concept of a "modified" vehicle is really nothing new for individuals with disabilities. After all, you probably have some type of adaptive device to enable you to drive. The device might be something as simple as hand controls. It might be something as complex as a minivan with a ramp entrance, lowered floor, and a digital joystick driving system.

Vans and minivans may be functional, but let's face it! Given a choice, many people prefer to look as "cool" as possible while on the road. Coolness is not usually a selling point for minivans, but there are options.

On a recent episode of the popular television series, "Monster Garage," the crew built the ultimate accessible vehicle from a Mercedes ML320. The crew featured race-car driver and fabricator Ray Paprota, who is the first driver with paraplegia to compete in a NASCAR touring series. The M-Class Mercedes was modified for a person to drive from a wheelchair. The modification included an electric winch with a pulley system for the ramp, a hydraulic actuator for the rear door, a lowered floor and hand controls. It was finished with mag wheels and flaming paint job. The result is a one-of-a-kind symbol of coolness on the road.

Inspired by the "Monster Garage" creation, a small group of individuals with SCI were asked to search the Internet for accessible transportation. They were asked to list any vehicle they found that might be useful for some individuals with disabilities. The top 5 "coolest" choices are outlined here.

The 2004 Mazda RX-8 is not modified specifically for individuals with disabilities. First, The RX-8 comes with an optional automatic transmission, which allows the car to be easily driven using standard hand controls. Second, the car has a unique 4-door design that is perfect for persons with lower levels of spinal cord impairment who can easily transfer in and out of a car. The rear doors on the RX-8 are smaller than, and open opposite to, the front doors. This feature allows drivers or passengers to transfer into the front seat and easily put a wheelchair in the back seat.

Before you consider buying the RX-8, it is important to remember that your risk for health problems increases with the number of times that you transfer in and out of a wheelchair. For example, frequent transfers put you at higher risk for skin damage that can lead to pressure sores. You also add strain on your joints and muscles when you transfer, so frequent transfers put you at higher risk for developing chronic pain. The best way to help prevent such problems is to avoid transferring whenever possible.

4 One-person cars are a new concept in accessible transportation in the US. However, it is fairly common for drivers with disabilities in Europe. The Quovis is a European import that recently hit the US market with its American debut at the National Auto Dealer Association’s Annual Convention and Exposition in Las Vegas, Nevada. The Quovis claims to be "the first vehicle solely dedicated to persons in a wheelchair." The car's features include a ramp that drops down from the rear allowing a person to roll in and drive from their wheelchair. The Quovis comes equipped with "handle bar" steering with levers for accelerating and breaking. On the downside, the car is about the size of a golf cart and not big enough for a passenger. The Quovis is currently classified as a Low Speed Vehicle (LSV) and restricted to speeds of 25 mph or less (the European model has a top speed of over 40 m.p.h.). The car's compact size and limited speed are the main reasons that the car is only intended for use on city streets and not intended for use on highways or expressways.

Although the Quovis has limitations, the car is likely to be quickly refined to better fit the needs of the US consumers. In fact, one-person vehicles such as the Quovis have a lot of potential when you think of such cars acting as a larger version of a power wheelchair. You might easily imagine the car equipped with a number of different driving systems. For example, a digital control system and joystick control...
are already in use in standard engine vehicles such as the Quovis. Now imagine a battery powered car equipped with a control box similar to those found on most power wheelchairs. This controller might enable people with high levels of impairment to drive using a mouthstick or head control. Most anyone with a mobility impairment will be able to drive. Now that is cool!

Some people simply want to spend some time outdoors. All-terrain wheelchairs are great, but they can only take you so far. The Woodstar ATC can take you about anywhere you want to go. The ATC is a one-person vehicle intended for advanced off-road use. The ATC is ideal for persons with lower levels of impairment because you can transfer into the seat, secure your wheelchair on back and hit the trails. However, the ATC can also be driven by persons with higher levels of impairment. If you have some strength and movement in your arms, you can drive using a unique electronic hydraulic steering- and maneuver system. Plus, the throttle and brakes can be operated by mouth using a suction and blow method. The ATC can also be equipped with an electronic adjustment of the seat’s height, automatic parking break, electric gear shifter, elbow support and headrest adjustment. If you want to look cool off the road, the Woodstar ATC is the cool choice you have to consider.

You have probably seen wheelchair lifts on vans. But have you noticed a similar wheelchair lift on a Cadillac Escalade, Chevrolet Taho, or other sport utility vehicle (SUV)? This is the concept behind the Elaine Anne Lift System. It offers persons who use a manual wheelchair a great alternative to buying a van. The system lifts drivers directly behind the steering wheel where their wheelchairs are locked with the exclusive tie-down system. The system also features adjustable head, neck and upper body supports. Side supports are also available. The roof does not need to be raised, and the passenger side area is almost untouched by the conversion process. Once the driver is in position, the automatic doors shut. The vehicle looks unmodified from the outside. This lift system is a definite “must have” if you prefer to drive an SUV.

The accessible conversion package on the Chrysler PT Cruiser is the overwhelming choice for #1 in cool. The "PT" stands for "Personalized Transportation," according to Chrysler. Therefore, you can factory order your Cruiser with a flaming paint scheme or your choice of woodgrain or chrome exterior accents. You can have your accessible Cruiser adapted for riding or driving with wheelchair access on either side of the car. The car can be operated with almost all types of adaptive controls. A push button remote opens a front door and rear gull-wing door before deploying the side entry ramp. The interior features a 6 inch lowered floor allowing about 56 inches of interior headroom, 29 inches of floor width, and 48 inches in length to park your wheelchair. Again, the outside looks almost identical to an original PT when the front and rear gull-wing doors are closed. Once inside, "cool is definitely the rule."

Although you may or may not agree with these 5 selections, there is one essential "rule" in making a good vehicle choice: do your homework! You may want a "cool ride," but you have to get the vehicle that best fits your needs as well as your desires. If you are willing and able to transfer, you have many options on your vehicle choice. If transferring is not an option, you have two options. First, you can get a vehicle with enough room for you to ride in your wheelchair. Second, you might be able to get a wheelchair that fits your vehicle choice. Some choices cost more than others, so you might also think about what best fits your budget.

It is best to try everything you can before you buy. If you have a desire for something that you cannot first try, you can make an informed choice after searching the Internet. You will find all of the information found in this article along with other options. When you are searching the Internet, look for feedback from other people who have bought the product you want. You can find many product reviews posted on message and bulletin boards. Then, you should only buy when you know that you are getting what you want.

Internet Resources for this article are on page 8.
Dextromethorphan as a Preventive Treatment for Neuropathic Pain after Spinal Cord Injury

Chronic pain is a common secondary complication of spinal cord injury (SCI). It is estimated that between 18% and 96% of persons with SCI experience pain. Often, this pain has a negative impact on quality of life, so effective treatment options for chronic pain are a high priority for many persons with SCI.

Recent animal research suggests that neuropathic pain (generally described as a sharp, shooting, or burning pain) can be reduced or prevented with treatment soon after injury. This is significant because most treatments attempt to minimize pain after it has developed.

This is a randomized, placebo controlled pre-emptive trial of dextromethorphan for the prevention of neuropathic pain following SCI. Participants with and without pain will be recruited soon after injury from within the University of Alabama at Birmingham Model SCI System of Care. Participants will be questioned about their current pain status. Those reporting pain will undergo an exam to determine whether or not their pain is neuropathic or musculoskeletal. Participants will then be randomly assigned to either the treatment or non-treatment group. Both groups will receive standard care for persons with SCI. The treatment group will undergo 2 weeks of therapy using dextromethorphan, which is generally well tolerated with minimal side-effects.

All participants will complete a battery of self-report measures (The short form McGill pain questionnaire, the Patient Health Questionnaire – Depression, the Pittsburgh Sleep Quality Index, and the Satisfaction With Life Scale self-report measures) upon the start of participation and 12 months later. Throughout the study, monthly telephone (or hospital room visits if participant is still hospitalized) follow-up interviews will be conducted. All follow-up interviews will specifically ask participants to report any changes in pain status and/or side-effects. If changes are reported, participants will be scheduled for a clinician-based pain assessment to determine the type of change being reported. If a new pain is determined to be neuropathic, participants will be considered to be at the endpoint for this trial and will be advised on other treatment options. Those participants who report a stop in pain or change in pain intensity, frequency, or duration at one of the follow-up interviews will receive a clinician-based assessment after 12 months of participation.

Objectives

1) Determine the efficacy of dextromethorphan as a preemptive intervention to prevent the development of neuropathic pain among individuals with SCI.
2) Determine the effectiveness of dextromethorphan in minimizing the severity of neuropathic pain among individuals with SCI.
3) Determine the impact of the pre-emptive use of dextromethorphan on self-reported QOL, mental health, and sleep.

Anticipated Results

Research results to date concerning the problem of chronic pain and SCI have been discouraging, particularly from the consumer’s standpoint. Moreover, there have been absolutely no previous investigations similar to this study of a preventive approach to the treatment of neuropathic pain following spinal cord injury. On the other hand, there is a great need for a cost-effective method of treatment with few side effects to minimize or prevent the development of neuropathic pain after SCI. Based on both animal and human research on other types of neuropathic pain, the results of this study may lead to a pre-emptive option in the treatment of chronic neuropathic pain for persons with SCI.

Note

As an individual with spinal cord impairment (SCI), you may want to learn how to better manage secondary medical conditions such as pressure sores, respiratory illness, pain, muscle spasms, urinary tract infection, depression, sexual function and fertility. You may also want to learn about SCI related research, assistive technologies, employment, and disability organizations. If you know what you are looking for, the Internet is the perfect place to find information. Searching the Internet is easy. You start by opening your computer's web browser such as Safari, Mozilla, or Internet Explorer; go to one of the many available search engines such as Google, Yahoo or Dogpile; and type in the topic that you want to find. Your search will end with a list of web pages offering information on that topic. You will find many of these web pages useful. However, the Internet also has a lot of misinformation, especially on SCI health. This misinformation is either out of date or simply inaccurate.

If you want reliable health information, it is essential that you know where to go. The best web sites to find reliable SCI health information are usually federally funded, which includes government organizations/agencies (.gov), most educational institutions (.edu) and some nonprofit organizations (.org). Commercial (.com) and network (.net) web sites may offer health related information, but the information may not be as reliable.

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*Most likely to offer reliable health information

There are a number of health related governmental web sites that you may want to visit. The Department of Health and Human Services (www.os.dhhs.gov), The Social Security Administration (www.ssa.gov), The National Institute of Neurological Disorders and Stroke (www.ninds.nih.gov), and The Centers for Disease Control and Prevention (www.cdc.gov) are only a few.

Many educational institutions are associated with university medical schools and hospitals. A few of these institutions are designated as a Model Spinal Cord Injury System (MSCIS) and are federally funded to conduct research and disseminate findings. The SPINALCORD Injury Information Network (www.spinalcord.uab.edu) web site is managed by the University of Alabama at Birmingham MSCIS. The web site is accessed more than 1,700 times per day and offers original publications (including *Pushin’ On*) and links to other SCI related web sites. The University of Washington manages its MSCIS (depts.washington.edu/rehab/sci/) web site and also provides original SCI health information.

Some nonprofit organizations specialize in SCI health information. Craig Hospital (www.craighospital.org) is a MSCIS and among the leading providers of SCI health and wellness information in English and Spanish. Rancho Los Amigos National Rehabilitation Center (www.agingwithdisability.org) is a MSCIS and Rehabilitation Research and Training Center on Aging with SCI. Rancho specializes in information on the impact of aging on health changes, psychological reactions, family needs, and job accommodation. The National Spinal Cord Injury Association (www.spinalcord.org) is the nation’s oldest and largest consumer organization dedicated to improving the quality of life for individuals with SCI and their families.

When you visit any web site, you may find links to other web sites. These “outside” links are not usually managed by the web sites offering the links, so the information found on other web sites may not be accurate or up-to-date.

You also need to know that health information that you find on the Internet should never take the place of your doctor. Always ask your doctor or other qualified health professional about any matter concerning your individual health. Plus, you should visit your doctor at least once per year for a thorough physical examination.
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Editor: Phil Klebine, MA
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Contact Information:
Office of Research Services
619 19th Street South - SRC 529
Birmingham, AL 35249-7330
Phone: 205-934-3283 or TDD 205-934-4642
Fax: 205-975-4691
Email: sciweb@uab.edu

UAB’s Spain Rehabilitation Center is looking for women with spinal cord injury who are 5 years post-injury, T-10 level or higher, using a wheelchair for primary mobility, at least 2 years postmenopausal, not on any hormone replacement therapy, and without a history of rheumatology or malignant bone disorder, chronic steroid use, or parathyroid, thyroid or pituitary disorder. Such women are needed to participate in a study on postmenopausal complications and early and appropriate interventions such as medications, dietary management, injury level specific exercise protocols and equipment and wheelchair modifications to address whether or not women with SCI need early prophylactic therapies soon after injury to delay or lessen the later effects of menopause. Women who participate are given free medical examinations, including a bone density scan and follow-up. Women also receive financial incentives for participating including transportation costs and $50 per visit to Spain Rehabilitation Center. For more information phone Pat Taylor at 205-934-5463.

Wheelchairs, Etc.
- www.WheelchairNet.org
- www.independencenow.com
- www.redmanpowerchair.com
- www.levo.ch/E/Englisch-start.htm
- www.permobilusa.com
- www.lifestandusa.com
- www.balderusa.com
- www.frankmobility.com
- www.magicmobility.com.au

Driving Options
- www.emc-digi.com
- www.kvb.ca/earlift.htm
- www.freedommotors.com
- www.discountmobilityusa.com
- www.woodstar.se/eng_index.htm
- www.quovis.net/index_ingles.asp

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