Greetings from the U-M Model SCI Care System!

Winter is still hanging on here in Michigan and although it does not seem like it now, spring soon will be here. And with it comes an exciting event we hope many of you will be able to attend. “Connection to SCI Cure: The Science, Ethics and Politics of Spinal Cord Injury Research” will be held on May 21st. Registration materials will be in the mail soon so keep your eyes peeled! See the back page for more details.

We are very pleased to have Dr. Eric Appleberry serve as Co-Editor for this edition of SCI access. He has written about his experience as a research subject in Dr. David Gater’s SCI Exercise Physiology Lab and has interviewed two fellow SCIers, Charlie Parkhill and Kevin Krohn, for their take on life after their injuries. Their accomplishments are indeed noteworthy.

Note the news of a major new research project, to be conducted by Drs. Claire Kalpakjian and David Gater, on the psychological and physiological aspects of Menopause in Women with SCI. There is also a report on the SCI Lecture Series, held during the latter part of 2004, which brought cutting edge researchers to the University of Michigan. And there is a moving tribute by Co-Project Director, Dr. David Gater, to the Real Superman, Christopher Reeve.

Do you need some extra motivation to exercise and live a healthy lifestyle? See our article on page 10 about recent research on some pretty impressive rats.

Our regular “Ask the Doctor” column is written by Dr. William Scelza, one of our Board-Certified SCI physicians, who addresses the problem of increased urine output and high catheter volumes at night.

Our Book Review was written by a newcomer to our newsletter, Ms. Julie Harrison. “From There to Here” tells vital stories of rebuilding lives after SCI. Ms. Harrison herself sustained a spinal cord injury in 2001.

There is also news of the first ever SCI Hall of Fame™ on page 7.

We hope you enjoy this latest edition of SCI access!
Charles Parkhill was a project/financial management consultant for architects and engineers for 20 years. He had clients all across the nation; it was a successful business. But in 1998, while vacationing with his wife in Mexico, an unruly ocean wave left him with a C4-5 incomplete spinal cord injury. His life had changed; he was motionless from the neck down and he did not like it at all. He says he decided to put all else on hold and totally devote himself to recovery. But even after a year of rehab, while he had made some progress, he was still not where he wanted or thought he could be. At that time, however, physical therapy protocols did not extend past a year.

Enter the dedication of Polly Swingle, his Physical Therapist. She too thought Charlie (as he prefers to be called) could benefit from a serious extension of therapy. Polly agreed to “push the envelope” of therapy if he would work really hard and trust in her guidance. So, before it was a well recognized therapy, she started him on un-weighted (harness supported) treadmill “gait training”/walking and other “on the run” technique innovations as well.

Now, with the aid of Lofstrand crutches, Charlie is actually able to walk up to 150-200 feet. This is quite an accomplishment.

So impressed were Charlie and Polly with the results of aggressive physical therapy that they wanted to have a way for other injured people to benefit as well. Thus was born The Recovery Project. Charlie (from his previous life) had experience on the business side of professional services, and Polly now had developed technical skills and the confidence from experience to know it could work. The infective enthusiasm to get people going and then staying with the program were a natural for her.

They opened for business October 1, 2003, renting space in the open gymnasium of the Livonia, MI “Y” (and now have a satellite location in Clinton Township, MI, also.)

One “superstar” example among their clients is a 31 year old man who had a C3-4 incomplete SCI at age 16. He had had very little in the way of physical therapy before coming to their clinic in January, 2004. He could not pedal a bike or stand by himself, or even sit at the edge of a mat table without assistance. And when assisted to a standing position, he could only keep his knees in a locked position for about 5 seconds. On leg press equipment his “push” was only about 30 lbs worth.

But now, through a progressively rigorous therapy regimen, including use of some specialized equipment, he can sit on the edge of a mat table for 5 minutes and
Would you like to participate in our exercise research project?” asked the voice on the telephone. “We’re trying to figure out how best to measure the calories burned during everyday physical activities in people with spinal cord injury.”

“Sure,” I said, after hearing more about the project, “sign me up. I like to help on projects like this.” I was also eager to try out their computerized exercise machine that could evaluate one’s oxygen uptake, carbon dioxide output and aerobic exercise capacity. I’d read about these machines in running magazines, back before my accident. In the last four years, since my SCI, I’d been regularly using one of the new stand up exercise machines [EasyStand 6000 Glider] that truly allows vigorous workouts. I was confident I could blow away this lab machine.

The University of Michigan and Ann Arbor Veteran’s Administration Healthcare Center support a Spinal Cord Injury Exercise Physiology Laboratory, housed at the VA, and under the direction of Dr. David Gater. The lab is equipped with an underwater weighing tank, various exercise machines, sensing devices, computers and electronic equipment of all sorts and abundant floor space for chairs and work tables. It’s a gizmo paradise.

On my first appointment, I submitted thorough information on the two research projects for which I was eligible. I was given a careful physical exam, including an ECG. They are trying to be sure no one with undiagnosed problems gets into trouble by participating in the projects.

On my second visit, for safety purposes, pressure stockings and an abdominal binder were put on. I was hooked up to a 12-lead ECG and put on a face mask with an exhale tube. The tube was connected to sensors that read the concentrations of oxygen and carbon dioxide in my exhaled breath. This info was then fed to a computer that compared the readings to room air. Then started what is called a “Graded maximal exercise test.”

I was positioned in front of a hand crank ergometer (like a bicycle for your arms) and, keeping a steady 50 rpm pace, I went at it for 2 minutes, first at a low resistance setting, and then, after resting for 30 seconds and having my blood pressure measured, I cranked again at a greater resistance, etc, etc. Dr Gater watched the live ECG all the time for any signs of trouble and two assistants were making notes on lab sheets, adjusting machine settings and cheering me on. The test would be stopped if I couldn’t keep up the 50 rmps pace or I felt like I was just too tired to carry on.

In seven stages I made it to the maximum resistance setting, still at a 50 rpm pace, but getting there feeling like I really was “maximaled out.” After I’d cooled down I was told that, out of the forty subjects they had done so far, I was close to the top regarding my exercise capacity. At the time being a 62 year old “middle aged” person, I felt kind of good hearing this.

Next, I was given and instructed in the use of a “wrist watch” motion sensor, that I then wore for three weeks. Inside were inertial motion sensors that tracked movements of the wrist, in real time and all three planes. Once each week I kept a detailed 48 hour record of all activity, and also a general activity diary at the end of each week.

On my third visit to the VA Lab, I turned in my sensor and activity logs, was given a fresh motion sensor for each wrist and was fitted with a high tech, sensor laden face mask. This mask did, by itself, the same job as the mask/computer combo did at my last visit, but allowed me to move around the room.

This time the task was to do one of four sets of “activities of daily living.” The categories were: Home activities (laundry, washing dishes, etc); Self-care (dressing lower body, mobility transfers); Locomotion (wheeling at different paces); Leisure/ recreation/sports (cards, weights, basketball).

My randomly selected activity was “Locomotion,” for which I needed to wheel my chair for three 4 minute intervals, the first at “less than normal pace,” the next at “normal pace,” and the last at “slightly faster than normal pace”, with a 3 minute rest in between.

The immediate goals of these research projects are, first, to gather information about the actual physical activity patterns of people with spinal cord injuries, and second, to examine the accuracy of these motion sensors, as compared to self kept records, for predicting how many calories are burned during various activities of daily living.

The significance of this research is that once there are accurate ways of predicting the calorie burn of various life activities, researchers can look at what is needed in the way of physical activities (and calorie burn) so as to reduce the risks of complications such as obesity, diabetes and other ills that are related to our SCI life.

To learn more about this and other projects in Dr. Gater’s SCI Exercise Physiology Laboratory, call 734-769-7100 ext. 6303, or ext. 4710.
Eagle One Sports Shop

with determination, life carries on

Sorry, we can’t;’ Kevin Krohn was told by the bank when first he applied for a loan to build his own sports equipment store; ‘starting and running a new business is hard full time work. How can we know you’ll be successful at it?’

Though the bank may have had doubts, Kevin says he had none. “Yes, I had recently broken my back and was paralyzed from the waist down. But, I’ve lived in this area all my life; I knew the people and I knew the business. And I knew I was still very capable. I was just going to have to prove that I could still do the work.”

Some background: Kevin Krohn had been a successful salesman in sports equipment and a very physically active person: semi-pro football, jet-skis, motorcycles, etc. “I kept myself healthy; never even had a cavity! And I was just getting my life back on track.” Kevin explained that he had been through a really difficult divorce a few years back, leaving him as a single parent to two young sons. But he’d been remarried for half a year and, with his new wife and her two children had been in the process of forming a really strong family.

But on December 11, 2001, a large van, trying to pass on a hill, ran head-on into his car. He suffered generalized severe trauma, a right forearm fracture with substantial bone loss, multiple rib fractures, lung collapse, and a vertebral fracture at T10-11 causing a “complete” spinal cord injury. He was badly hurt, in incredible pain and his vital signs weren’t stabilizing during that first day at the hospital. “No one thought I was going to make it.”

And then came an event that really strengthened his resolve: a friend reported that upon hearing of his grim condition, his ex-wife had come and taken his youngest son, Joshua, to be with her. Kevin said that in that moment he knew that to keep his new family together he had to be there: “My family needed me alive.”

And he proceeded to set recovery records. He did his physical therapy program in one third the regular time. Instead of the projected 22 weeks in the hospital he was out in three. And at 5 weeks, after he found he couldn’t start his own store just then, he was back at work in sales at the store where he had been before.

His dream was still alive though. After six months of working full time he reactivated his loan request. And half a year later, with still no loan, Kevin started the building project with his own savings. To stretch his dollars he did everything from designing to the general contracting and hiring of various trades himself. When the bank finally realized what a determined and capable person Kevin was they granted him the loan.

(Just in time, Kevin says, as he was about out of his own funds.)

Kevin Krohn, wife Lynnette, and children Aaron, Tyler, Brittany and Joshua, on the deck in front of their Eagle One Sports Shop in Manitou Beach, MI

About the business, his wife, Lynnette, a registered nurse at U of M Hospital, says “He did it to show himself, and others, that he could do it; he also did it for the kids.” “They can work here part-time while they’re in school,” Kevin chimes in, “and long term, I’d like to open a branch in Florida. With the kids here, I’ll run the one down there (especially in winters),” he adds.

The main business of Eagle One Sports Shop is “newer used” outdoor equipment: motorcycles, ATVs, jet skis, snowmobiles, etc., “all at a substantial savings,” plus new helmets, clothing and various accessory items. The building’s upper level is for floor display, counter & desk space, rest rooms and an administrative office. There is a custom four-section incline ramp to the lower level, which has a repair/machine shop and storage space. The entire place is fully wheelchair accessible.

He is located in Manitou Beach, an area of lakes and much outdoor activity, about 20 miles south of Jackson, MI. The business opened last May,’04, and has done very well, Kevin says. “Already I’ve needed to start an addition for more display space and storage.”

“But still, not a day goes by that I don’t miss use of my legs,” Kevin says, “I enjoy my family though, and what I’m doing here. Two of my employees are disabled. And, I’ve been told I’ve also been an inspiration to others around here that have disabilities. I know I was really able to help is a friend who had a spinal cord injury after I did. That may by my mission,” he said.

Eagle One Sports Shop telephone is: 517-547-7563; the e-mail address is: manitoubeach@tc3net.com

by Eric A. Appleberry, D.D.S., M.S.
Q: I have noticed that my urine output and cath volumes are higher at night and my doctor always tells me to try to keep my cath volumes under 500 cc. Why does that happen and is there anything I can do to prevent that from occurring?

A: Increased cath volumes are quite common after SCI and there are some reasons why this happens. During the day, while most people are sitting up in their chair, you can develop dependent edema. This means that gravity will tend to have fluid stay down in the legs (since the leg muscles are not contracting and acting as a pump to squeeze this fluid up toward the heart). This is why some people may notice their feet and legs may be more swollen at the end of the day. Once people get into bed for the evening and are lying flat, gravity is eliminated and the circulation throughout the body is much more efficient. The kidneys will then be able to filter out some of this fluid and thus create more urine and higher catheter volumes at night.

There are some things that can be done to help prevent this from happening. Using support stockings or ace wraps over your legs during the day will help your body keep more fluid in your general circulation and prevent (or at least decrease) the dependent edema from happening. You can also take some breaks during the day and elevate your legs or lay flat for awhile.

It is also very important to watch your fluid intake carefully as well. Limiting what you drink after your evening meal will also help keep your volumes lower in the evening. Avoiding caffeinated beverages like coffee, tea, or soda and alcoholic beverages (all of which will increase the amount of urine your body makes) will also help.

It is also helpful to keep a log of how much you drink and how much you put out. By doing this for a few days, you can get a sense of how much you are taking in and how it effects your catheter volumes throughout the day.

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Choosing a Quality Medical Rehabilitation Program

Even after acute rehabilitation, some people with an SCI require additional therapy. Before deciding which rehabilitation program is best for them, consumers can learn about a program’s quality and reputation.

Many organizations and programs collect information on patient satisfaction, outcomes, average lengths of stay and other data. There are also independent organizations that rate the quality of health services and organizations. A good place to start is the Rehabilitation Accreditation Commission, or CARF. Their toll-free number is (866-888-1122) and they have an excellent web site at www.carf.org.

To help get you started, here are some questions to ask before choosing a rehab program:

- Is the program certified by Medicare? (Programs must meet minimum health and safety standards)
- Does the program offer the services and therapy best suited for me?
- Do the physicians have a background in rehabilitation medicine or a related specialty?
- What percentage of patients discharged return to the community rather than to a nursing home?

This information is from Choosing a High-Quality Medical Rehabilitation Program: A National Rehabilitation Hospital Guide for People with Disabilities.

You can download this guide for free at www.nrhrresearch.org/chdr/rehabguide or call 1-866-380-4344 to order a copy.
Ventilator Program Honored by University Hospital

The Pediatric and Adolescent Home Ventilator Program was selected as the UMHS 2004 Clinical Program of the Year. The program is led by Virginia Nelson, M.D., M.P.H., Clinical Professor of Physical Medicine and Rehabilitation and Director of Pediatric Rehabilitation and pulmonologist Wan C. Tsai, M.D., Assistant Professor, Department of Pediatrics and Communicable Diseases. This program provides comprehensive management of children and adolescents who use a ventilator or bi-level positive pressure device to assist breathing. Services provided include inpatient management, outpatient clinics, and therapies.

Dr. Nelson helped found the program over 20 years ago when Mott Children’s Hospital was the first medical facility in Michigan to discharge a patient supported by a ventilator. Other members of the medical team include additional pediatric pulmonologists, including newest team member Manuel Arteta, M.D., Clinical Assistant Professor of Pediatrics, a nurse practitioner, respiratory care specialist, social worker, and dietitian. Other professionals often involved in patient care include a physical therapist, occupational therapist, and rehabilitation engineer.

The program currently provides ongoing care coordination for more than 150 patients throughout the state. It serves the largest population of ventilator-dependent children within the state and is the largest program of its kind in the country. The program now partners with the Michigan Department of Community Health.

In 2003, Dr. Nelson also was presented with a 2003 Faculty Award to recognize outstanding faculty members and their contributions to education, research and clinical care at the University of Michigan Medical School. Eleven faculty members received awards for 2003.

To learn more about the Pediatric and Adolescent Home Ventilator Program, call 734-615-3267.

SCI Lecture Series Attracts Increasing Interest

During the past year the U-M Model Systems Lecture Series has held ten lectures. These have been increasingly well attended, with approximately 100 people attending each of the three lectures during the late fall and early winter, 2004. The lectures have drawn a truly diverse audience, including people with SCI, their families, medical students, clinicians, and researchers. The fall lectures had speakers from around the country and all four were sponsored by the Recovery Project (see our article on page 3).

In October, Ping Wu, M.D., Ph.D., a researcher at the University of Texas Medical Branch gave a lecture entitled Stem Cells for Neuron Replacement in Neurotrauma: Promises and Challenges. She gave an overview of the different types of stem cells focusing on fetal human neural stem cells. Dr. Wu discussed how stem cells are “guided” to become specific type of neurons, current advances in using them to restore functions in animal models, and challenges and future directions related to treatment of humans.

Daniel Lammertse, M.D., from Craig Hospital in Colorado spoke in November on Clinical Trials in SCI Medicine. He discussed the history of clinical trials and the various types of clinical trials now under way, including pharmacological, surgical, and others. Dr. Lammertse concluded that the cure will not be quickly achieved and that while there is good reason to be skeptical of many of the “restorative” trials that have taken place, there will be continued interest in them and there is increased reason for hope.

The December lecture was by Ronald Trioli, Ph.D., an Associate Professor of Orthopedics and Biomedical Engineering at Case Western Reserve University. His talk, entitled Functional Electrical Stimulation for Standing in Spinal Cord Injury described a very promising multicenter trial of a surgically implanted neuroprosthesis for standing after low cervical or thoracic spinal cord injury. The University of Michigan and the Ann Arbor VA is one of six participating centers and there have been 14 subjects enrolled in the study so far. Most have been able to exercise, stand and transfer from lower to higher surfaces, and support more than 90% of their body weight with their legs. Participants’ average standing time has been 10 minutes. They have all reported being satisfied with the study.

We have more lectures planned for the coming year so keep an eye out for flyers in the mail and postings on our website. If you are not able to attend these lectures, they will be videotaped and available for a nominal fee. We hope to see you there!
The Real Superman

Christopher Reeve was not a real comic book hero, although he played one in the movies. The actor who portrayed Superman on the giant screen, however, became larger than life in his real-life efforts to promote a cure for paralysis. In doing so, he changed the American and world view of disability. Webster’s defines “superman” as a “person of extraordinary or superhuman power or achievements,” and few have lived up to this definition as well as the late Christopher Reeve.

A graduate of Cornell University in 1974, Mr. Reeve was well-known as a theater performer and actor prior to his spinal cord injury in May of 1992. An accomplished equestrian, Mr. Reeve’s accident brought to light just how close each of us could be to a catastrophic, life-changing event, and opened the world’s view of spinal cord injury to a level of understanding far exceeding previous conceptualizations. Mr. Reeve did not shy from the publicity surrounding his injury, and, in fact, seemed to embrace his new role as an advocate for disability rights, in general, and spinal cord research in particular, and in short order had created a venue for supporting SCI research.

Since its birth in 1992, the Christopher Reeve Paralysis Foundation (CRPF) has provided over $48 million in research grants to the world’s leading neuroscientists in support of a cure for spinal cord injury. Prior to his death in October 2004, Mr. Reeve spoke numerous times before Congress and world leaders about the need for focused legislation and resources targeting curative efforts for spinal cord injury. Since 1992, the CRPF has also provided over $5.6 million to nonprofit organizations for programs to improve quality of life for those with paralysis, particularly those with spinal cord injuries.

Christopher Reeve was a people’s champion for spinal cord injury research, and awakened within us all the realization that those with disabilities have tremendous strength and capacity to make a difference in the world. His tireless drive to find a cure for spinal cord injury was matched in recent years by his understanding that the journey was as important as the destination, and that optimizing health for function and abundant life with a disability was also of paramount importance.

His drive and enthusiasm for life will be missed, but his passion for curing spinal cord injury and improving the quality of life for persons with disabilities will endure. Fictionalized as a super-hero in American cinema, Mr. Reeve will be forever immortalized as a real-life Superman for his efforts to find a cure for spinal cord injury.

NSCIA Seeks Nominations for SCI Hall of Fame™

The National Spinal Cord Injury Association (NSCIA) is creating the first ever “SCI Hall of Fame™” to be awarded on May 9, 2005 at the esteemed John F. Kennedy Center for the Performing Arts in Washington, D.C.

The SCI Hall of Fame™ will recognize individuals with SCI, or those who significantly support persons with SCI, for their commitments and contributions to society and the SCI community. The ultimate purpose of the Hall of Fame is to recognize individuals or organizations for their contributions in promoting awareness of, dedication to, and the support of individuals with SCI.

The SCI Hall of Fame™ event is co-sponsored by the Kennedy Center Accessibility Program. It is being held concurrently with the SCI Summit 2005: Facing Issues, Creating Solutions™ at the Mayflower Hotel, May 9-11, 2005 (registration reception the evening of May 8) in Washington, D.C.

People with or without SCI nominated for induction into the SCI Hall of Fame™ must have a proven track record of significant accomplishments as a "trail-blazer" in the category in which they are nominated.

The categories for nomination include:

♦ Assistive Technology
♦ Research
♦ Sports
♦ Entrepreneur
♦ Legislative
♦ Disability Awareness
♦ Entertainment
♦ Media
♦ Corporate/Government Executive
♦ Benefactor

Consider joining NSCIA (membership is free on their website at www.spinalcord.org).
**Book Review: From There to Here**

*By Julie Harrison*

The book is a collection of forty-five unique essays written by a range of individuals who have spinal cord injuries. They tell their compelling stories in honest voices, addressing the roller-coaster of emotions often felt during a life-changing experience. Men and women, young and old, tetraplegic or paraplegic, newly injured to 30 years post-injury, each individual shares the path they took to get from “there” to “here.” “There” being lying in a hospital bed, going through rehab, relearning how to perform basic functions, and “here” being developing a career, reaching for new goals, and creating healthy relationships.

Each person reflects on the way they’ve encountered the unexpected and then carved out a new life for themselves, on their own terms. Emotions range from shock, denial, anger, remorse, desperation, and grief to patience, curiosity, acceptance, determination, and empowerment. Due to the candid nature of each person’s essay, hope is not delivered in a sugar-coated pill. Instead, we bear witness to the gritty struggles encountered, the broken relationships, the self-doubt. And then, almost in the spirit of metamorphosis, a wiser self begins to emerge and new dreams are born.

This book would be an especially valuable tool for the newly injured person with an SCI. It not only acknowledges the fierce reality of the initial situation but it becomes testimony to the fact that there is life after SCI. As someone with a spinal cord injury myself, reading these stories struck a chord deep inside of me as I felt a sense of validation, familiarity, and camaraderie with these voices. But this book isn’t just for those of us with spinal cord injuries, but also for our families, friends, therapists, counselors, and anyone who would like a glimpse into the resiliency of the human spirit.

This is a powerful book.

Edited by Gary Karp and Stanley Klein, Ph.D. Published by *No Limits Communication*. This book is available at [www.newmobility.com/bookstore/cfm](http://www.newmobility.com/bookstore/cfm) for $18.95 plus $3 shipping and handling. Or call 888-850-0344 ext. 209.

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**Tell Us Your Story**

Have a hankering to put pen to paper? Want to tell your story? There is a new project seeking people who would like to write a narrative about life after spinal cord injury.

“Tell Us Your Story” is seeking people to write about their “after SCI” experiences and how they were able to successfully cope with the changes. We are creating a series of short articles that we will post on our website and give to newly injured patients and their families.

For people with new injuries or those struggling with the adjustment, seeing that there can be life after SCI—an active, productive, happy life—is very important. Here’s your chance to inspire someone, to give hope in a time of need!

You need not be a skilled writer. Dr. Marcy Epstein, a former English professor and current research fellow in the Model Spinal Cord Injury Care System, will help you tell your story. And, we will pay a small honorarium for your contribution!

If you are interested in contributing to this project or want more information, please get in touch with Claire Kalpakjian, UM Model SCI Care System Project Manager, by calling 734-763-0971 or e-mailing her at spinalcordinjury@med.umich.edu.
Although menopause is a normal milestone in every woman’s life, virtually nothing is known about how women with SCI experience menopause. But not for much longer. Claire Kalpakjian, Ph.D. and David Gater, M.D., Ph.D., from the UMHS Department of Physical Medicine and Rehabilitation, were recently awarded a research grant from National Institute for Disability and Rehabilitation Research (NIDRR) in the Department of Education; Dr. Kalpakjian also was awarded a grant the National Center for Medical Rehabilitation Research at the National Institutes of Health. Both awards support a new project investigating the menopause transition in women with SCI, “The Psychological and Physiological Aspects of Menopause in Women with Spinal Cord Injury” launching in February 2005.

To see if women with SCI really do have a different experience of menopause, they will be compared to non-disabled women and men with SCI. “At first glance, it seems strange to include men in a study about menopause,” comments Dr. Kalpakjian, “but in order to tease out what is menopause and what is SCI in terms of symptoms or changes, you’ve got to control for the menopause and the spinal cord injury.” In other words, comparing a group that has spinal cord injury but not menopause (men) to a group that has spinal cord injury and menopause (women) can help to highlight the influence of SCI on menopause and vice versa.

This project involves two inter-related studies. Study 1 will examine various symptoms using a questionnaire mailed to participants’ homes. Study 2 takes place at University of Michigan and Dr. Gater’s SCI Exercise Physiology Laboratory in the Ann Arbor Veteran’s Administration Medical Center. More extensive tests, such as bone density measurement, body composition analysis and others will take place over a two day period including a brief overnight stay. People taking part in Study 2 must be willing to travel to Ann Arbor on two or more occasions. Eligible participants can earn up to $160 in Study 1 and up to $400 in Study 2.

You may be able to participate if you are woman or man aged 45-60 years with an SCI and...
♦ You have an injury between C6 and T12 and are non-ambulatory;
♦ Use a wheelchair (manual or power);
♦ Are at least 36 months post injury;
♦ Are a non-smoker;
♦ You do not have any other autoimmune or neurological disorders (e.g., multiple sclerosis, lupus).

To be eligible, women must also...
♦ Not be taking hormone replacement therapy (HRT) or birth control;
♦ Have not undergone a hysterectomy.

For more information about this study and how to participate, please contact Mary Burton or Martha Ellen at MenopauseSci@med.umich.edu or call 734-936-9334.

Ann Arbor Center for Independent Living’s Walk & Roll 2005

The Ann Arbor Center for Independent Living (AACIL) is hosting their 4th annual Walk & Roll Expo on Saturday, April 30, 2005 at Eastern Michigan University’s Bowen Field House.

This fun-filled family event features free food, live music, entertainment, contests, raffles, prizes, a children’s activity center and a vendor showcase where organizations will highlight their goods and services. This year’s proceeds will support the AACIL mission and their Youth Services program that provides leadership and community involvement opportunities for youth with disabilities.

Participants are encouraged to collect donations. Three top prizes will be awarded to those that gather the most in contributions. This year the grand prize is a lap-top computer, second prize is a digital camera with photo printer and third prize is a DVD home theatre system!

For the first time, an Apple Mini-iPod will be awarded to the youth under 18 who collects the highest amount in pledges.

Attendees can walk and roll, (even rollerblade or use a scooter) around the indoor track for prizes, exercise and fun. A free Walk & Roll Expo t-shirt and raffle ticket will be given to those who raise $25 or more. For more information and to register for Walk & Roll Expo call the AACIL at 734-971-0277 ext 16, or send an email inquiry to walkandroll@aacil.org or visit their website at www.aacil.org.

The AACIL encourages other non-profit agencies to find out more on how to partner with the AACIL to raise funds for their own missions through Walk & Roll Expo.
Do you ever wonder about all that exercise you're "supposed" to do? Have you ever thought, "Exercising is a hassle and too tough to do. Besides, I already have too many self-care things to worry about. What's the point?"

The answer is: your health. So please read on about this study that researched the link between exercise ability and general health—and also the positive effects that exercise training can bring to even low ability rats. (Because the biological mechanisms of rat muscle and body functions are similar to ours, this does relate to us.)

Eight years ago, UM Department of Physical Medicine and Rehabilitation Scientists Steven L. Britton, Ph.D., and Lauren G. Koch, Ph.D., (then at the Medical College of Ohio, Toledo) began a selective breeding project to develop rats strains with either a natural (not trained) high ability for endurance running or very low ability for running.

Using a treadmill, a group of 168 rats (both male and female) were run to the point of exhaustion. The average treadmill time was 23 minutes—with, of course, much individual variation. From this group, the 13 most capable females and 13 most capable males were selected, paired and mated; likewise, the least capable females and males were also selected, paired and mated to produce a "1st generation" of "high ability" and "low ability" exercise capacity rats. Following generations of rats were also treadmill tested, with the best from the high ability group being paired to produce the next high ability generation and the worst from the low ability exercisers being bred to create the next low ability generation.

Research findings on the 10th & 11th generations of these high and low ability rat runners was the subject of a recent article: "Cardiovascular Risk Factors Emerge After Artificial Selection for Low Aerobic Capacity," just published in the prestigious journal *Science* (Vol. 307 (5708), pp418-420, Jan 21,2005).

The high ability rats were sleek and fit animals that could run an average of 42 minutes non-stop on the treadmill. The low ability rats, on the other hand, averaged only 14 minutes before quitting, and were less fit in ways that in their human counterparts are significant risk factors for early disease problems. The rats weighed more, had more abdominal fat, higher levels of blood fat and high blood sugar levels which showed evidence of insulin "resistance" (early Type 2 diabetes). Their blood pressure levels were also higher and their arteries were not as elastic as were those in the high capability rats.

To understand the basic difference between the two groups, further testing was done on leg muscle proteins that are central to using oxygen efficiently and sustained energy production. Compared to the high ability rats, the low ability rats' muscle cells, due to the genes they inherited, had substantially lower levels of these proteins. These changes would also be a factor in diabetes, fat metabolism, heart attacks, stroke, for example.

Could these naturally unfit, low ability rats improve with exercise? They (and the high ability rats, for comparison) were put through a 6-week treadmill training program. The high ability rats were the "superstars," showing a lot of improvement (beyond their already high untrained ability) in their exercise oxygen use and the heart's ability to rapidly pump blood.

The low ability rats, due to their genetic differences, were not able to improve as much as the high ability ones did, but they did improve. This shows that even the born "couch potato" rats can, with a training program, improve their exercise capacity.

So, both genetic factors and the environment (people's lifestyle and health behavior) have a role in the development of chronic disease as well as in reducing the risk of disease.

You may be asking.... what does this have to do with spinal cord injury? The same as it does for anyone - it is not your genetics - or your injury for that matter - alone that determine your health. What you do to improve your odds for health through exercise and a healthy lifestyle is what counts!

We all have factors in our lives that we can't control; with SCI, one is a reduced capacity for exercise. Why not do what you can to maximize your well-being? After all, the rats can do it...and so can you!!
On November 16, 2004 the first-ever piece of legislation directly addressing SCI and paralysis research passed unanimously in the Senate; a similar measure passed unanimously in the House on October 7th. The “Research Review Act of 2004” (H.R. 5213) expands research information regarding multidisciplinary research projects and epidemiological studies. The bill was developed in coordination with Congress, the Crohn’s and Colitis Foundation, and the Christopher Reeve Paralysis Foundation.

The act defines key goals of the scientific community—encouraging collaboration and coordination and limiting research redundancy. It also mandates the release of a report by early next year that quantifies the National Institutes of Health’s (NIH) success to promote coordination in the area of paralysis research. Disability advocates are encouraged by this that directly addresses spinal cord injury and paralysis research.

This legislation paves the way for re-introduction of the Christopher Reeve Paralysis Act (CRPA) when Congress returns to session. Over the past five years we have seen a doubling of the National Institutes of Health's budget. This unprecedented support for medical research has helped make remarkable advances in all fields, including SCI. Here are the highlights of the Act:

**Title I—Paralysis Research**: This first title authorizes more money for paralysis research as well as the coordination of research. This would be done through the NIH and by the Director of the National Institutes of Neurological Disorders and Stroke (NINDS). One of most important parts of this first title for consumers is that NIH would be encouraged to disseminate information to the public about paralysis research.

**Title II—Paralysis Rehabilitation and Care**: The second title addresses rehabilitation research and care activities. This will allow the Director of NIH to act through the National Center for Medical Rehabilitation Research (NCMRR) to encourage research to enhance daily functioning for people with paralysis.

**Title III—Improving Quality of Life for Persons with Paralysis and Other Physical Disabilities**: The third title authorizes the Secretary of Health and Human Services, acting through the Centers for Disease Control and Prevention, to study unique health challenges faced by those with paralysis and to carryout projects to improve their quality of life and long-term health status.

**Title IV—Basic Rehabilitation and Health Sciences Research**: This last title authorizes the expansion and coordination of research activities of the Department of Veterans Affairs for research on paralysis. This would involve collaboration with institutions such as the NIH or academic medical schools.

**Where is the legislation now?**

During the last Congress, the CRPA received endorsements from some of the most influential people on Capitol Hill, including Anthony J. Principi, Secretary of Veteran’s Affairs and Tommy G. Thompson, Secretary of Health and Human Services. They were joined by strong bi-partisan support, 70 Representatives and 29 Senators.

**What can you do?**

Currently, re-introduction of the legislation is pending. Your help will be vital to secure Congressional co-sponsors. Michigan U.S. Representatives John D. Dingell, Dale E. Kildee, and Fred Upton are expected to continue their support. Join the Christopher Reeve Action Network today, and be part of the advocacy efforts before the bill is introduced. Here’s a chance for you to make your voice heard!

Join today, it’s easy to do if you have Internet access, go to [http://www.christopherreeve.org/](http://www.christopherreeve.org/) and click on “Join Action Network.”

Let your Senator and Representative know you want their support of this Act. You can contact senators and representatives several ways:

- To find your senator’s contact information, go to [http://www.senate.gov/index.htm](http://www.senate.gov/index.htm).
- To find your representative’s contact information, go to [http://www.house.gov/](http://www.house.gov/).

If you don’t have Internet access, you can contact:

- **Your Senator** by calling 517-373-2400
- **Your House Representative** by calling 517-373-0135.


**Source**: JAMA. 2005;293:151.; Christopher Reeve Paralysis Foundation.
also will be videotaped for those who cannot attend and tapes will be available for a nominal fee for consumers and their families.

We will also be videotaping the entire conference for those who cannot attend and tapes will be available for a nominal fee for consumers and their families.

Registration materials and other information will be in the mail soon! If you receive this newsletter you will automatically receive registration materials. If you know of anyone else who like to receive information, have them get in touch with us at 734-763-0971 or drop us an email at spinalcordinjury@med.umich.edu and we’ll be happy to add them to our mailing list.

This is a unique opportunity to meet and interact with some of the people who are working hard to improve the lives of people with SCI.

Help us spread the word about this important conference!