Redcord’s Neurac Treatment Approach for Older Adults

Technology for Injury Prevention in Seniors
Our Mission

The Seniors’ Health Division is committed to providing innovation and leadership by promoting physiotherapy for older adults in Canada. The Division fosters collaboration among health professionals, seniors, families, and communities to achieve healthy aging.

Objectives

1. To unite CPA members who are interested in all aspects of seniors’ health and well-being

2. To acquire and make available information and educational materials as related to physiotherapy in the field of seniors’ health

3. To encourage the development and publication of physiotherapy research in the field of seniors’ health in Canada and elsewhere

4. To collaborate with CPA on issues of national importance which relate to seniors’ health

5. To promote excellence in rehabilitation of the older adult

6. To support initiatives that promote healthy aging

Disclaimer:
* Articles in Age in Motion have not been peer-reviewed. There has been minor editing where necessary, and the articles’ authors, not Age in Motion editors, are responsible for the material presented.

* Age in Motion is Published Quarterly

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Happy new year to all division members! The executive of the SHD looks forward to a productive year of activities for our members.

The year 2012 provides opportunities for us to learn about, with, and from each other as we continue with our educational focus. We continue to explore new educational opportunities for our members and welcome your feedback on our recent teleconferences, information posted on our website, and suggestions about what information you would like to see in the future. We are in the process of revising the website and hope to have a more user-friendly site completed in 2012.

Strategic Plan and Constitution:
Great news! The amended SHD Constitution was presented to the CPA Board of Directors at the November 2011 board meeting and was approved by the Board! The CPA Board was impressed with our proposed changes and will recommend the use of parts of the constitution as a template for other Division constitutions.

The next step for the SHD is to have Division Members vote on acceptance of the amended constitution. All of our constitutional information has been posted on the website for several months, and we encourage you to read the information as we will have a vote on the amended constitution by Division Members in February, 2012. Specific information will be sent by e-mail in January along with the ballot.

CPA Teleconference Program:
The SHD sponsored a very successful teleconference on November 23, 2011. Bonny O’Hare presented a very informative teleconference called “Physical activity and ageing: Blending research and practice; An example from osteoporosis”. Bonny has a private practice in Thornhill, Ontario and is an instructor for BoneFit™.

Our next SHD teleconference is scheduled for February 8, 2012. Dr. Debra Rose, a professor at California State University, Fullerton will present “Applying a Constraints-Led Approach to the Evaluation and Treatment of Older Adults with Balance and Mobility Disorders”. The constraints-led approach is not the same as that used in stroke rehabilitation but is a unique approach to motor coordination that can be used to guide the selection of appropriate assessment tools and treatment approaches to match an individual’s intrinsic capabilities. This session will be of interest to physiotherapists with all levels of experience from new graduates to those with many years of experience.

Please look for registration information and a description of the session on the CPA website at http://www.physiotherapy.ca/public.asp?C=39&K=222400&ListingByCategory=&ListingBySubCategory=&ListingByMonth=*ALL*&ListingByEventType=
Student Award:
The SHD has offered our Second Annual Student Award to an entry-level student in his/her final year of training. The details of the award are posted on our website and on the student edge website. The deadline for this year was November 28, 2011 and the award winner will be announced shortly.

As always we encourage you to communicate with the Executive on any matter and to submit suggestions and information for the newsletter, for our website, and for the education of our members. You can reach any of us by email at seniorshealth@physiotherapy.ca.

A Word From the Editor
Jennifer Forbes

Welcome to another edition of Age in Motion! This issue is full of interesting information to use in your practice, and to keep you abreast of what is happening in seniors’ health practice across our country. A fascinating article will introduce you to the topic of Redcord Neurac via an interview with one of only four clinics in Canada who offer this unique treatment. Also, an article from Dr. Steven Robinovitch revisits his excellent presentation at Congress 2011. Many thanks to our contributors this month who put their time and effort into these excellent submissions.

I hope you enjoy the content and as always, if you have any questions about any of the articles, wish we would cover a topic that you are interested in, or have anything to contribute please contact us!

New Resources Online

Ontario Telemedecine Network - London Health Sciences Centre Best Practice Recommendations for Stroke Care: 2010 Update http://mediasite.otn.ca/mediasite41/Viewer/?peid=fb1055bd8cbb44d48469423cb94a3c831d

Osteoporosis Long Term Care Website – http://osteoporosislongtermcare.ca This site is part of the Ontario Osteoporosis Strategy in collaboration with Osteoporosis Canada and features helpful information, research and best care practices for older adults.

Toronto Rehab Online - http://torontorehab.scholarlab.ca/
The Technology for Injury Prevention in Seniors (TIPS) Program at Simon Fraser University

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FALLS: A MAJOR HEALTH BURDEN FOR OLDER CANADIANS

The Canadian population is aging, and those over age 65 are the fastest growing segment of the population. Falls are the number one cause of injury among seniors, including 90% of hip fractures and 60% of head injuries. Such injuries threaten mobility, confidence, and independence. Hip fractures are especially devastating, with 25% of patients dying within one year, and 50% of individuals experiencing a major loss of independence. Clearly, preventing falls in older adults is a major public health priority.

THE CHALLENGE OF PREVENTING FALL-RELATED INJURIES

However, preventing falls in older adults is difficult, given the diverse range of physiological and situational variables that contribute to falls, and the tendency for fallers to present with multiple risk factors.

Accordingly, one priority for researchers is to develop improved methods for identifying the mechanisms of falls -- “how” and “why” they occur. Few previous studies have measured the movements of the body during actual falls. Instead, our current understanding of the mechanisms of falls is based on interviews or incident reports, which rely on the recall of the fallen (which is often questionable) or witness, if any, to describe the event. At a patient level, this prevents care providers from accurately diagnosing and treating the cause of falls. At a population level, it impairs the development of more senior-friendly environments, valid fall assessment tools, and effective community-based fall prevention strategies.

A second priority is to develop improved methods for preventing injury in the event of a fall. Even with improvements in our understanding of fall mechanisms, it is unlikely that strategies will emerge that are capable of eliminating falls completely. Accordingly, a parallel priority is to develop improved methods for reducing the injury potential of falls, either through enhancement in bone strength, or reductions in the severity of the fall.

INJURY PREVENTION THROUGH TECHNOLOGY

The Technology for Injury Prevention in Seniors (TIPS) program at Simon Fraser University (SFU) is an innovative research platform funded through two team grants (over 2009-2015) from the Canadian Institutes for Health Research (CIHR). The program draws together local and international experts in
clinical, social, and applied sciences to develop and translate novel technology for preventing falls and fall-related injuries. Our approach combines experiments in a variety of SFU applied science laboratories with field studies in two partnering local long-term care (LTC) facilities (in Delta and New Westminster, BC), who participate as “real life” laboratories for the evaluation and refinement of our technologies. The value of TIPS lies in technology innovation, a commitment between partners for translating the products of our research, and the unique and valuable interdisciplinary training it provides to future leaders in the field of injury prevention.

Four technologies are at the core of TIPS research and development (Figure 1):

(1) Video capture of real-life falls and near falls. While falls in older adults have been “hot” area of research for the past 20 years, we have surprisingly little objective evidence on how and why these events occur. This is a major barrier to the development of improved prevention strategies. TIPS researchers are using a network of 208 digital video cameras installed in common areas of the two partnering LTC facilities, to capture a library of real-life falls (and “near-falls”) on video. We are then using structured approaches to analyze the video (“fall scene investigations”) and related clinical information to identify situational, environmental, and physiological factors contributing to the falls and associated injuries. Importantly, the technology assists the development and refinement of interventions through real-time monitoring, providing a much quicker design loop. These interventions include, for example, modifications of furniture to reduce trips, improvements in assistive devices (walkers), exercise programs, and medication changes.

(2) Wearable fall and mobility monitoring sensors. Approaching the size of a band-aid, “inertial measurement units” provide information on 3D linear accelerations and 3D angular velocities, and are moving the “gait lab” into the real-world environment. TIPS researchers are developing sensor units that are able to detect falls and near falls, provide reliable information on the cause of the falls, and monitor
balance and activity level as study participants (residents in our two participating LTC facilities, and older adults living in the community and assisted living residences) go about their daily activities. Again, the technology is also used in evaluation and refinement of mobility aids, physiotherapy, exercise programs, and medications.

(3) Safe movement environments through compliant flooring. Just like playgrounds, environments where seniors are likely to fall (long-term care facilities, hospitals, and senior centres) can be made safer by a compliant ground surface. The trick is to develop a floor soft enough to prevent hip fractures and head injuries, but firm enough to not impair the mobility and balance of seniors, or create ergonomic problems. TIPS researchers are working to identify new and existing compliant floors to meet these criteria. We will then conduct a randomized controlled trial in a partnering long-term care facility, randomly assigning rooms to intervention or control, to test the clinical utility and cost effectiveness of compliant flooring in reducing injuries. Hopefully, our results will support changes to building codes to support safer movement environments for seniors.

(4) Advanced protective gear. Wearable hip protectors represent a promising strategy for preventing hip fractures in high-risk individuals. The challenge is to design a product that meets with high user acceptance and adherence, and also provides sufficient protective value in a fall. TIPS engineers are working with clothing designers and social scientists to develop product designs optimized for both user compliance and biomechanical performance. We are also working on airbag technology to cushion falls much more effectively than is possible with a passive padding device.

Mark Your Calendars!

**Ontario Physiotherapy Association**
**InterACTION 2012**
March 23-25, 2012, Toronto, ON
Call for submissions deadline 11:59 pm October 9, 2011
http://www.opa.on.ca/conference_2012_papers.shtml

**Falls Prevention in Seniors Across the Continuum of Care Conference 2011**
March 24-25, 2012, Saskatoon, SK
http://www.usask.ca/cpte/FallsConf-2011/index.php

**Canadian Physiotherapy Association**
**Congress 2012**
May 24-27, 2012, Saskatoon, SK
http://www.physiotherapy.ca/public.asp?WCE=C=32%7CK=s226429

**2nd National Capital Bone and Joint Health Day**
June 1, 2012, Ottawa, ON
cme@toh.on.ca or call 613-761-4480 ext. 1 for more information

**Canadian Association on Gerontology (CAG) Educational Meeting**
October 18-20, 2012, Vancouver, BC
http://www.cagacg.ca/page.aspx?menu=86&app=336&cat1=798&tp=2&lk=no

Submit your courses or events to:
seniorshealth@physiotherapy.ca

Please note, these courses and events have come to our attention and we are listing them for the interest of our members. This in no way endorses or guarantees the content of these courses or events. While we make every attempt to present accurate and reliable information, OPA does not endorse, approve or certify the information, nor does it guarantee the accuracy, completeness, efficacy or timeliness of such information.
I may have lived in Ontario for the last four years, but I still and always will consider myself a true Bluenoser—that’s what you call a Nova Scotian, for all you come-from-aways out there. It may be a bit silly—and stereotypical—but when I think of home I think of the smell of the ocean, the taste of fresh seafood, the sound of a dance-provoking-fiddle and the sights along the gorgeous and rugged shoreline. There are so many places I would like to bring you, but for now we will visit a small town on the south shore.

The iconic representation of Mahone Bay, Nova Scotia presents the postcard image of the three churches, consecutively perched along the water’s edge at the head of the harbour. Just beyond the border of that postcard sits the only physiotherapy game in town: Fluid Motion Physiotherapy. This clinic offers a specific treatment approach that is only offered at 4 other clinics in the country: Redcord Neurac. Developed in Norway, Redcord is marketed as a mode of neuromusculoskeletal rehabilitation and as a mode of exercise for the active to elite athlete. It reminds me of a new spin on ‘springs and slings’. Clinic owner and operator, Candace McCurdy (also a Bluenoser) is the only physiotherapist in Canada certified to teach Neurac (Redcord) to health professionals. She agreed to talk to me about Redcord Neurac and how she has used it in practice to impact senior’s health. Here is our interview.

1. **What is Neurac treatment and the Redcord system?**

Redcord newly developed muscle activation treatment, Neurac, aims [to] reactivate deactivated or partially deactivated muscles. This can often mean immediate relief from acute and chronic muscle pain. The first stage is to identify weak links: inactive muscles and weaknesses in the stability muscles or alterations in muscle interaction. Even top trained athletes may have weak links, which can occur when stabilizer muscles turn off due to pain, strain, fatigue or inactivity. Individual treatments and or training programs are then developed based on the identified weak links. The exercise consists of controlled pain free exercises in slings. The goal is to improve the interaction between the brain, receptors and muscles. The treatment is called “Neurac” (Neuromuscular Activation). The training aims to activate “sleeping” muscles, restore the function, build strength and prevent relapses.
2. Your clinic is one of 4 in Canada that offer Redcord Neurac. Tell me about how or what made you decide to learn about Redcord and to use it in your practice.

I first heard about Redcord from a family friend who is a Physiotherapist in Norway. The concept sounded very interesting and was being used in over 90% of the clinics in Norway and other European countries. They started offering courses in the US so I decided to go see what it was about. It completely changed the way I saw patient care and the possibilities were endless. I actually came back from the course and decided to start my own clinic with the Redcord as a major component of treatment.

Do you use this system with the majority of your clientele?

I use the system with probably 90% of my clients in one way or another. I incorporate manual therapy and other more traditional techniques but often find the Redcord gets me superior results and patients often tell me that they can feel that [...] they are doing what they should be doing. You know when you are doing something that your body has not done in a while or that they are moving properly for the first time in ages. That their body is working as a unit again.

3. When I look at the seemingly intricate and organized system of lines, pulleys and connectors, I am reminded of being on a sailing vessel watching the crew constantly adjusting the rigging to assess and catch the wind just in the right way to keep them on course. Does Redcord remind you of a ship’s rigging?

Interesting you should ask that, the system was actually started by a carpenter who was also a sailor. He had back pain and was not getting any better and his initial goal was actually to get traction on his back. The concept spread from there with continuous development and things are always changing as new information is gained through experience.

Do you have any sailing experience?

I actually grew up sailing and on the water. I have worked with ropes and pulleys my whole life which was great because the set ups, etc came quickly to me and just made sense.

In your opinion, would you say that your extensive sailing experience is something that led you adopting this treatment approach?

Probably not something that led to me adopting the technique, just helped me overall with incorporating the idea of moving around slings and things.

4. I think of Mahone Bay as a NORC—a naturally occurring retirement community. More than 33% of residents are over the age of 65 and the population distribution looks like an inverted triangle from there. Would you say that the majority of your caseload consists of older adults?

I would guess that 70% of my case load is over 55 and probably at least 50% over 65.

How has this affected your practice?

I actually do not see it as having affected my practice greatly. One of the big things I do find is that the older generation has spent there lives being “tough” they have worked through a lot and are used to pushing on and by the time they get to Physiotherapy they are in rough shape because they have been toughing it out. One thing I will always remember is a preceptor of mine in school told me that “the same principles still apply to older adults you are not doing them any favours by taking it easy on them” I remind myself of this often and find that this population works hard and often surprise me and themselves with what they are able to do. It is really rewarding actually. I find one of the biggest barriers is that people accept that they are aging so they will have pain, I challenge this belief as I think that a lot of pain older adults have can be minimized and sometimes resolved. I think we need to do more work in this area of public education.
What makes Neurac a beneficial treatment approach for working with older adults?

Motivation is a big one, empowering people that they can make changes and there are things they can do to have a better quality of life. I wondered at first if some of my older patients would be hesitant to being “hung up” in the Redcord but I have literally had only 3-4 patients who were not game. Most people are keen to try anything that will help. Another great thing about this system is the ability to strengthen the core and work on balance in the suspended system with no risk or fear of falling. It takes one stress away from the patient and makes it easier to achieve their true goals. I think hospitals would be wise to incorporate these systems for patients post stroke, etc at times where they want to strengthen but are very limited. It can be graded for all levels.

If any, what risks/cons are there associated with using Redcord with older adults?
The only real risks that I would be worried about would be stressing someone too hard as well as trying to perform exercises beyond their strength. This is easy to control as long as you stick to the concepts of the Redcord and really focus on proper form, which is a critical component of the technique anyway.

Are there any particular cases or pathologies in older adults that you have found this system to not be effective?

[...]. There are definitely case by case bases that patients do not see results and then we work on other things but I would not say that as a set “diagnosis” that there is one thing that it does not work. It does not fix things that are “broken” just gets proper muscle activation and control to have the best movement possible, most people get at least some level of relief from this. [For example] We often have people with radiating pain, multiple disc herniations, or spinal stenosis that we put in the Redcord and they leave with no pain and full mobility. We have not changed the state of the structures that are damaged, only provided them the ability to activate the proper muscles to maintain a proper center of rotation around the joint.

5. Evidence-based practice is considered the collaboration of best evidence, expertise and patient values in a treatment program design. There is published evidence of the effectiveness of sling exercises using Redcord. Obviously, you bring your expertise to the table with your years of experience and participation in post-grad courses manual therapy, acupuncture and Neurac training, but how do you feel this treatment approach integrates or attends to patient values? [...]. I think that everyone wants to get better and have less pain and increase mobility. Patients often say how surprised they are at how quickly they can feel improvement and changes in their mobility. I would say most of my patients value personal attention, working with someone who has their best interests in mind and seeing progress and changes. When you get results quickly like this it is much easier to get patients to comply with exercises because they can see they changes.
6. The people at Redcord demonstrated that people have found this system beneficial for personal training as well as rehab goals. Are your clients able to pursue the use of Redcord at home after discharge? 

[...] There are patients of all levels, including elite athletes using the system. There is a home unit that is available and patients can purchase it during or after their treatments to continue on their own. We are also working on getting local gyms to purchase the units so patients would be able to incorporate it into their gym program and other gym members could benefit from it. Our longer term plan would include organized exercise groups that patients could attend for longer term strengthening with the added motivation, but that is still in the works.

7. Client-centered approach to treatment requires us to attend to patient values, beliefs and behaviours. How do you integrate these elements into your treatment approach with older adults when using Redcord?

One of our biggest concerns is spending time with our patients. At our clinic we spend at least 30 minutes one-on-one with our patients. This allows us to have more attention to the patient, their concerns, needs and maybe problems they are having. We have found [30 minutes] to be a minimum and we can have longer time if it seems appropriate to get someone up to speed. We are very aware of tailoring treatments to the patient. This means trying to find things that will best incorporate into their lives to help aid in their successes. With the Redcord specifically we are able to add bungees, change positions, alter treatments widely based on patient comfort, mobility and needs. [For example] …most patients who walk through the door have pain and very well developed compensation strategies to their movement. Most of the time these compensation strategies are the reason that the person has pain. I see their number one need is to have someone work with them to figure out how they can move properly to activate the right muscles and change these patterns. This is often the most challenging part of our job. This single thing I believe can make or break the successful treatment of most patients. If we are not able to help them achieve this then how can they do it on their own at home?

Thank you for your time and cooperation, Candace. Is there any else you’d like to say about your practice in relation to senior’s health?

I guess mostly I believe it is important for seniors to be proactive in their health management and trying to find a clinic or treatment that will help you. I believe that with all of the various options out there these days that it is sometimes a matter of trial and error until you find the right thing for you. Keep trying until you find someone or something that works for you to improve your quality of life and help maintain your independence. Having the best mobility and strength possible will make a huge difference in your quality of life!

References:

Fluidmotionphysio.ca
Redcord.com
Redcordcanada.ca

Disclaimer: The author of this article is not an employee or in any way connected to Redcord and its distributors.
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A cross country contact serves to provide a link to a division member in each province for the purposes of liaison with the SHD executive on seniors health issues as needed.

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We are currently looking to fill the vacancies in Quebec, Saskatchewan, Prince Edward Island, Yukon, Northwest Territories and Nunavut. seniorshealth@physiotherapy.ca if you are interested.

BE A PART OF OUR TEAM!

Are you working on an interesting project related to seniors’ care? Are you part of a unique clinical team? The SHD executive wants to hear from you! We would like to feature news, clinical articles and any other items of interest in geriatrics around Canada from our practicing division members.

Please send your submissions to seniorshealth@physiotherapy.ca. We are more than willing to help with formatting of articles – so please don’t hesitate to contact us.

The next newsletter will be released April 2012
Deadline for submissions is March 1, 2012 to
seniorshealth@physiotherapy.ca
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