Nova Scotia Health

CardioVascular HEALTH NOVA SCOTIA BULLETIN

IMPROVING CARDIOVASCULAR HEALTH OF NOVA SCOTIANS

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Welcome to the Cardiovascular Health Nova Scotia (CVHNS) quarterly e-mail bulletin. The Bulletin has been created to share information about the program's activities, related cardiovascular health initiatives, and ideas from around the province.

Physical Fitness and Health

Physical activity has long been associated with good health. Hippocrates stated in the fifth century BC that "parts of the body…[if] left unused and idle...become liable to disease, defective in growth and age quickly." It was only in the past 60 years, however, that the association between fitness and health has been demonstrated through scientific evidence.

Physical fitness determines our ability to do work and pertains to a range of people from those who are bed-bound to world-class marathoners. Studies have described the association between health outcomes and physical fitness. A large observational study[1] demonstrated a 13% reduction in risk of death for every 1-met increment in peak exercise among healthy individuals when compared to those with established cardiovascular disease; exercise capacity was found to be the strongest predictor of mortality when compared to age, traditional cardiovascular risk factors and body mass index.

Our capacity to exercise is dependent on adenosine triphosphate (ATP) generation and utilization. Oxidative generation of ATP from the metabolism of carbohydrates, fatty acids and amino acids through the Krebs cycle can produce an essentially unlimited quantity of ATP in the presence of oxygen. When the demand for ATP exceeds our capacity to provide oxygen, ATP generation can continue for a short period at the expense of lactate production. Increasing lactate eventually results in fatigue and termination of the effort.

Peak exercise capacity reflects our ability to deliver oxygen to maintain oxidative generation of ATP without producing lactate. Cardiac output, tissue vascularity, and metabolic efficiency determine oxygen delivery and utilization, and are the determinants of physical fitness.

Fortunately, one's fitness can be augmented with dynamic exercise training. Measurable improvements in cardiac output, tissue capillary density, as well as mitochondria and oxidative enzyme density account for the improved exercise capacity with training. This improvement in cardiovascular efficiency with training is a reflection of positive adaptation. Its effect on the cardiovascular system is most striking in patients with hypertension, where exercise training can help reverse maladaptive LVH, improve lusitrophy and reduce

microvascular ischemia.

Improvement in exercise capacity is associated with reduction in mortality in large observational studies[2]. This has been extended to cardiac rehabilitation (CR) programs, where exercise is an important component. A systematic review[3] of randomized trials of post-MI patients enrolled in CR programs has demonstrated both significant improvements in exercise capacity and reduction in total mortality.

Exercise also improves insulin sensitivity, lipid profile, reduces BMI and waist circumference, and has a positive influence on mental health. Exercise likely helps reverse the maladaptive changes that occur as a result of cardiovascular disease, while at the same time improving the metabolic profile that contributes to cardiovascular risk.

Fitness is a reflection of overall cardiovascular efficiency. It is a strong predictor of mortality and improved fitness with dynamic exercise positively remodels the cardiovascular system and improves outcomes. Both body and mind share improvements and it is something we all should engage in on a regular basis.

References
[1]Kokkinos P, Myers J, Kokkinos JP, et al. Exercise Capacity and Mortality in Black and White Men. *Circulation*. 2008; 117:614-622.
[2]*Scand J Med Sci Sports* 2010;20:54-55.
[3]Exercise-based Rehabilitation with Coronary Heart Disease. *Cochrane Database Systematic Review*, 2001.

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Learning Opportunities

16th Annual Atlantic Canada Cardiovascular Conference: April 14-16, 2011, Halifax, NS. http://cme.medicine.dal.ca.

Annual Stroke Clinical Day: Stroke Care Across the Continuum: April 29, 2011, Fredericton, NB. www.heartandstroke.nb.ca.

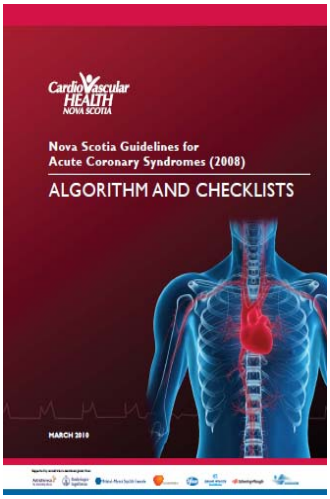
Stroke Education Day: June 4, 2011, Charlottetown, PE. www.heartandstroke.pe.ca

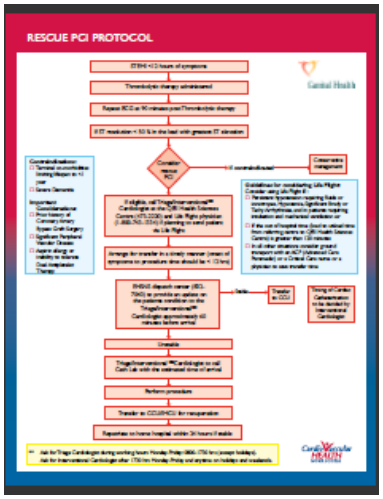
CVHNS News

Troponin Survey
CVHNS contacted each DHA to determine the type of troponin assay used and the normal reference values. A mix of Troponin I and Troponin T are utilized in the province and assays are either analyzed by the lab or via a point of care tool. The reference value for acute myocardial infarction is consistent in all labs using Troponin T; however the reference cutoff values for Troponin I vary widely. If you are interested in obtaining a copy of the survey results, contact kathy.harrigan@cdha.nshealth.ca.

Rescue PCI Algorithm Available

CVHNS and CDHA recently reproduced the rescue PCI algorithm. This tool has been provided to all emergency departments in the province so it can be added to the ACS Algorithm and Checklist tools developed earlier this year. The rescue PCI algorithm should be placed on the ring immediately following the STEMI checklist.





Palliative Care Stroke Forum

On February 14th, CVHNS held its 5th Stroke Forum. The topic of this forum was Palliative Care in Stroke and we had a total of 69 attendees. Our speakers included Dr. Gerry Farrell, a palliative care physician from Pictou County who provided an overview of palliative care to set the stage, and a presentation from Dr. Gord Gubitz, stroke neurologist from CDHA who discussed the unique scenario of palliative care in stroke. The afternoon featured a presentation from Roy Ellis, Bereavement Coordinator with the palliative care program at CDHA. Roy talked about bereavement and family support and the concept of and misconceptions about grief. Participants were from many disciplines in both the palliative care programs as well as the stroke programs in each district. Throughout the day, districts were able to develop concrete plans to improve palliative care for stroke patients in their district and had some great discussion within their district as well as between districts.

Stroke Monitoring and Surveillance Plans

Over the last 1.5 years, much background work has been done to help us understand where and how we can access data, as well as what indicators would be most important to collect in this province. Eventually, stroke data will be collected in the newly re-structured CVHNS database. In the interim, we are creating a core set of indicators that can be collected by chart audit to give DHAs and CVHNS a picture of the progress of stroke reorganization across the province. We will also be developing secondary indicator sets around specific topics to facilitate further drill down audits at a district level or a provincial level. We anticipate that only the core set of indicators would be collected continuously with strategic periodic audits in the other areas to help complete the picture of stroke care in Nova Scotia. Our plan is to have the minimum set of indicators finalized, along with a strategy for data collection, by late spring of this year. We anticipate that inclusion of stroke indicators in the CVHNS database will be at least a year, as we continue to work through the process of restructuring that database.

CBDHA Smoking Cessation

In response to a recognized need for smoking cessation counseling, CBDHA has stepped up to the plate and implemented a comprehensive stop smoking program for patients admitted to hospital. The program is based on the Ottawa model for smoking cessation and is currently offered on most

units at the Cape Breton Regional hospital, with other community hospitals scheduled to start similar programs in the near future.

The District's initiative is designed to assist patients by offering smoking cessation counseling and nicotine replacement therapy during hospitalization. Research shows that hospitalized smokers are motivated to quit. Current CBDHA project coordinator, Stephanie Madill BHSc, RRT notes over 55% of smokers (inpatients) stated they would like to quite smoking during their hospitalization.

The first step of the process is to identify smokers upon admission; this is done by simply asking the question "Have you used any form of tobacco in the past 6 months?" Once identified, the patient is then visited by a smoking cessation educator. During the initial consultation, nicotine replacement therapy, smoking cessation counseling, educational information and links to the available community resources are offered. Upon discharge, patients who agree will receive follow-up through an interactive telephone service over a 6 month period. Additional counseling is available through the smoker's helpline.

Education for staff is a critical component of the program. Those involved need to be informed and well educated about the program they are promoting. To address this need a Smoking Cessation Training Package was developed for staff. This ensures that the nurse who is asking the question is comfortable in doing so.

Starting February 2011, pregnant women who use tobacco will have the option to take part in a pilot smoking cessation program at the Glace Bay Hospital Prenatal Clinic. In March 2011, the smoking cessation program will be offered to inpatients at the New Waterford Consolidated Hospital.

CBDHA, a dedicated team of health professionals, is encouraging, assisting and empowering patients within the district to make healthier choices. As stated on the program brochure "We care about your health, don't let it go up in smoke."

Helpful Resources

Transitions Home: How to Guide
The Institute for Health Care Improvement (IHI) has developed a guide on how to best implement front-line process improvements in transitions in care. Key references and resources are included in the guide. To obtain a copy, visit http://ah.cms-plus.com/files/IHI_How_to_Guide_Creating_an_Ideal_Transition_Home.pdf.

French Website—Hypertension
The Societe Quebecois d'hypertension arterielle has a website that contains information for health professionals and the general public. Visit www.hypertension.qc.ca.

2010 Focused Update Device Therapy in Heart Failure
Dickstein K, Vardas P, Auricchio A. et al. An update of the 2008 ESC guidelines for the diagnosis and treatment of acute and chronic health failure and the 2007 ESC guidelines for cardiac and resynchronization therapy. Visit www.escardio.org/guidelines-surveys/ esc-guidelines/GuidelinesDocuments/guidelines–CRTHF-Update-FT.PDF.

ECGs for the Emergency Physician
Mattu A. Brady W. *ECGs for the Emergency Physician 2.* Malden, MA; Blackwell Publishing, 2008.

Testing of Low-Risk Patients with Chest Pain
Amsterdam EA, Kirk JD, Blumke DA. et al. on behalf of the American Heart Association Exercise, Cardiac Rehabilitation, and Prevention Committee for the Council on Clinical Cardiology, Council on Cardiovascular Nursing and Interdisciplinary Council on Quality of Care and Outcomes Research. Testing of low-risk patients presenting to the emergency department with chest pain. A scientific statement from the American Heart Association. *Circulation*. August 17, 2010:756-776.

CCS Releases Mobile Apps
The Canadian Cardiovascular Society recently launched some of their guidelines on IPhone, IPad and Blackberry APPS. Visit www.ccsguidelinesprograms.ca.

Canadian Stroke Strategy Best Practice Recommendations for Stroke Care—2010 Update.
The Canadian Stroke Guidelines update was released in December of 2010. The new guidelines are web based and smart phone friendly. Visit www.strokebestpractices.ca.

Innovative Ideas

Smoking Cessation—Staff Nursing Survey
As part of the South West Health nursing assessment form, a patient's current smoking status should be documented at the time of admission. "Do you smoke?" The question is a simple one, however, if it is determined the patient is a smoker, what happens next isn't always that simple.
As part of a quality improvement initiative to address smoking cessation in the district, over 250 nurses in the Yarmouth Regional Hospital received a survey (response rate of 35%). Survey questions were designed to provide feedback on nurses' current knowledge and comfort level when providing support and advice to a patient who may be willing or trying to quit smoking. As well, the survey provided useful feedback on nursing practice related to counseling, referral and assessing smoking cessation resources. The vast majority of nurses responded favorably and wish to take part in upcoming learning opportunities related to smoking cessation resources, how to approach a patient about quitting and the risks of smoking.

A group of key stakeholders will be working together over the next several months to address smoking cessation in the district. The nursing survey results combined with a completed inventory of printed resources as well as a chart scan focusing on documentation will help us to plan and implement initiatives, first at the Yarmouth site, followed by the Shelburne and Digby sites. For more information, contact Kelly Goudey, CVHNS Cardiac Coordinator kelly.goudey@swndha.ns.ca.

Early Cardiovascular Health Education Program
The Early Cardiovascular Health Education Program in South Shore has taken a step toward filling a large gap in client care through the initiation of timely, accurate and convenient information for heart and stroke survivors. The recent integration of both cardiac and stroke expertise has increased educator capacity and thus enabled the program to be offered more frequently. This integration is a step toward teamwork in Chronic Disease Management. The program is designed to empower clients and their families to consider making lifestyle changes and to provide them with information so that they can access appropriate resources as needed. The 1.5-2 hour session is focused on explaining cardiovascular (CV) disease and risk factors, options to reduce CV risk, links to community and hospital resources, and referral access. The anticipation is that through the provision of early education for cardiovascular

disease, clients will have increased knowledge of their condition and be more confident in self management. For more information, please call Susan Atkinson, CVHNS Cardiac Coordinator, 543-4604 x2330, Matt Naugler, Cardiovascular Health and Wellness Coordinator, 543-4604 x2222 or Schelene Swinemar, CVHNS Stroke Coordinator, 543-4604 x2210.

CHA Signed up for Safer Health Care Now

Cumberland Health Authority recently signed up for the Safer Health Care Now AMI bundle. As part of this program, data related to the timing of tests, procedures of diagnostics are collected. In order to ensure the data collected is accurate, it was important that the clocks in the emergency department be synchronized. Staff were consulted and recommended that 5 clocks in the emergency department be synchronized to the Meditech computer time and checked daily as part of the regular crash cart testing. Staff reminders (laminated reference card and documentation tip sheet) were placed in a visible location the emergency department. For more information, contact Sue Boiduk, CVHNS District Coordinator, 902-667-5400 ext 6377.

Shared Stroke Unit in PCHA and GASHA Officially Opens

On January 7th, PCHA and GASHA officially opened their shared stroke unit at St. Martha's Regional Hospital. The unit has been accepting patients from across GASHA and PCHA since early November, 2010. Congratulations to all the staff involved in the PCHA/GASHA Stroke Program.

Provincial Pre Hospital STEMI Reperfusion Strategy (RESTORE)

As part of the government's *Better Care Sooner* plan to improve emergency care, the provincial pre-hospital STEMI Reperfusion Strategy (RESTORE) will be expanded across the province by the end of April. Advanced care paramedics, under the direction of emergency department physicians, can now administer Tenectoplase (TNK) to STEMI patients in the field as part of an expanded scope of practice. RESTORE began as a pilot project in Cape Breton in June 2008.

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