State of the Art

Canadian Diabetes Association (CDA) 2008 Clinical Practice Guidelines (CPGs) - What’s New?

“All primary health care practitioners and diabetes educators should familiarize themselves with the guidelines and use them as a reference when treating patients with diabetes.”

The Canadian Diabetes Association 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada were released September 18, 2008. This issue of the newsletter includes a section titled “CPGs 2008 - A First Glance” (pages 5 - 10). Key chapters have been reviewed by the leaders of specific working/interest groups to determine how these guidelines differ from the 2003 CPGs. The content of these specific chapters are the focus of current DCPNS initiatives and will help to determine our future directions.

This new version of the guidelines is more comprehensive than previous editions and includes “key messages” that provide a summary of the accompanying text in addition to the standard recommendations at the conclusion of each chapter. Cognizant of the health risks in patients with diabetes (DM), CDA has included a more robust approach to the assessment and management of cardiovascular risk and vascular protection in this population. For the first time, the CPGs include recommendations for the management of hyperglycemic emergencies in adults and suggestions for the inpatient glycemic management of acute medical and surgical admissions. The addition of sections on self-management and the relevance of complementary and alternative medicine in the management of DM reflect our new challenges in both promoting the concept of self-care and insuring that evidence drives our recommendations for treatment.

All primary health care practitioners and diabetes educators should familiarize themselves with the guidelines and use them as a reference when treating patients with DM.

The guidelines outline the importance of organized diabetes care and the need for timely, team-based care that is supported by systematic and organizational interventions. Interventions that are inclusive of electronic databases, flow charts, automated reminders, improved communication of management changes, and enhanced role of the various team members have been shown to improve outcomes.
Once again, the guidelines outline the importance of screening for PreDM/DM. The algorithm has been altered slightly and now recommends that virtually **ALL** patients with Impaired Fasting Glucose (IFG) undergo a 75 g Glucose Tolerance Test (GTT). This essentially insures that all patients who have one abnormal fasting value will have that test repeated as part of the GTT. This is intended to identify those with Impaired Glucose Tolerance (IGT) or undiagnosed DM. In my opinion, the algorithm is still unwieldy and suggests that if the fasting blood glucose is 5.6-6.0 mmol/l and more than 1 risk factor is present, then a 75 g GTT **MAY** be considered. These recommendations are based on consensus and, given that the algorithm is difficult to follow, may not be readily adopted by those in primary health care.

The prevention of DM now warrants its own chapter and emphasizes the importance of lifestyle modification but also promotes the consideration of a biguanide (metformin) or an alpha glucosidase inhibitor in an individual with IGT. Thiazolidinediones (TZDs) are to be considered in patients with IGT or IFG and no known cardiovascular disease.

Pharmacologic treatment of type 2 DM has been revamped with a new emphasis on early initiation of insulin. The use of metformin as first line therapy is unchanged in individuals with A1C < 9.0 %. With A1C > 9.0 % or with symptomatic hyperglycemia, the early initiation of insulin is highly recommended.

Hyperglycemic emergencies (DKA and HHS) in adults require specific and complex management. The algorithms provided are very directive and easy to follow. Consideration should be given to providing these protocols to all Emergency Rooms in the province to provide consistency in the approach to these critically ill patients.

The approach to inpatient management of patients with DM outlines the concern over ongoing use of sliding scales and provides useful suggestions for the management of critically ill patients. However, it falls short by not providing an algorithm for the use of basal and prandial insulin for inpatients not in critical care units.

Cardiovascular risk assessment now comprises a large portion of the new “Complications and Comorbidities” section of the guidelines. The guidelines provide very helpful and practical assessment tools to help identify those individuals who are at high risk of developing coronary artery disease. Men > 45 years and women > 50 years who have DM are considered to be high risk. Younger individuals who have a long duration of DM or macrovascular or microvascular disease or multiple risk factors are also considered to be high risk. The “Screening” section suggests that baseline ECGs be done on all individuals > 40 years, or a history of DM > 15 years, or at any age in the presence of multiple risk factors. The guidelines go on to suggest when exercise stress testing should be performed and when consultation to a cardiac specialist should be arranged. The subsequent sections on vascular protection and dyslipidemia actually direct the therapies to those who have been defined as high risk. One of the major difficulties with the previous guideline was trying to decipher which individuals were high risk.

These guidelines address these issues well and should clarify many of the therapeutic dilemmas facing health care practitioners.

The “Chronic Kidney Disease in Diabetes” chapter uses the eGFR (estimated Glomerular Filtration Rate), which is being standardized in Nova Scotia under the auspices of the Nova Scotia Renal Program, and will require additional education to physicians and DC staff once it becomes widely available.

All primary care physicians and DC staff should be encouraged to peruse the guidelines for both subtle changes in the diagnosis and management sections and explore and consider DM as a paradigm for chronic disease management and its inherent relationship to cardiovascular health.

The guidelines can be found at the CDA website (www.diabetes.ca), and hard copies of the guidelines document can be purchased from the CDA for a nominal fee.

**Lynne Harrigan, MD FRCPC**
Clinical Advisor, DCPNS

**Reference:**
News from the Care Program

Thanksgiving has come and gone, and what a wonderful weekend it was. The sun and colors were brilliant, the food plentiful, and the time with family and friends memorable. We hope these three days helped to renew, invigorate, and provide that much-needed time with family and friends.

As a program, we entered September full tilt and haven’t stopped to take our collective breaths. The program is a buzz with completion of project work, finalization of our strategic plan, compilation of statistics and survey findings, preparations for presentations and meetings, hosting of a visiting physician from Argentina and a team from the Public Health Agency of Canada, and the release of our Bi-Annual Report - 2006/07 and 2007/08 and Nova Scotia Diabetes Statistics Report 2008.

The Canadian Diabetes Association 2008 Clinical Practice Guidelines (CPGs) for the Prevention and Management of Diabetes in Canada has arrived with great fan fare, and we will continue to peruse and revisit current and future provincial initiatives in light of the new guidelines. Program resources will be reviewed and revised, where necessary. This issue of the newsletter (State of the Art and CPGs 2008 - At First Glance, pages 5 - 10) provides you with some insights into those areas of the CPGs that may impact previously released DCPNS documents.

Diabetes Care Advisory Council

Strategic Plan Progress

At the September 26, 2008 meeting, the Council reviewed and approved the priority projects from the strategic plan as determined by DCPNS staff. Working groups will be struck and some contract work undertaken to get us started on our way. First up is the need to develop criteria for diabetes (DM)/prediabetes (PreDM) risk stratification, including referral algorithms indicating the most appropriate program and/or provider team. This will include pathways for new diagnosis (DM/PreDM/other), new technologies (pumps), complex patients, etc. This comes under DCPNS Strategic Direction 1, “To forge new and strengthen existing partnerships in the development of an integrated system of chronic disease prevention and management aimed at reducing the development and progression of diabetes complications.” Other work will be undertaken concurrently including an enhancement of the current performance measurement framework (clinical and self-care), including process and outcome indicators for diabetes surveillance. We will start with a review of the 2008 CPGs and the impact these guidelines may have on the Registry, with an eye to revising the flow sheet and collection parameters (what will go and what should be added).

Contents of the DCPNS strategic plan (2008 to 2012) are being shared during meetings and presentations with key stakeholders from across the province (along with data from the Nova Scotia Diabetes Statistics Report 2008). A copy of the strategic plan has yet to hit the website but will in the coming weeks.

The DCPNS Bi-Annual Report - 2006/07 and 2007/08 has been approved for release and has already hit the mail. A pdf version of this four-page report can be downloaded from the DCPNS website.

Subcommittees and Working Groups

The Diabetic Foot in Nova Scotia: Challenges and Opportunities—Working Group Activities

Over the summer months, work continued on the recommended revisions to the Foot Assessment Form, the Foot Risk Stratification Form, the Diabetic Foot Referral Algorithm, and the Patient Decision Tree and Risk Information sheets. Once completed, the revised forms will be forwarded to working group members for their review and a subsequent meeting date will be scheduled. Final changes have already been made to the Diabetic Foot Assessment Form based on feedback from select DCs.

Care of the Elderly with Diabetes Residing in Long-Term Care (LTC) Facilities

The final draft of the pocket reference tool, Diabetes Guidelines for Elderly Residents in Long-Term Care (LTC) Facilities, is complete and ready for print. A telehealth session is in the planning stages to introduce the tool and provide context for the guidelines. The target audience will be physicians, nurse practitioners, long-term care facilities’ staff, and diabetes educators.

Pediatric to Adult Care Transition Working Group

Revisions continue to be made on a number of draft articles for the The Moving On With Diabetes Transition Booklet. The Transition Summary form has gone to print and should
be ready for distribution to the Diabetes Centres (DCs) in the coming weeks.

Special Initiatives

Nova Scotia Diabetes Statistics, 2008 (report)

We are anxious to ensure that the information from this report is shared and the key messages heard across the province. We have held some meetings and presentations and would like to deliver a few more before the snow falls. Please contact the office with suggested meeting dates for your District.

DCPNS Forms Revision

We have started the process and want to hear from those of you currently using the forms on how these can be further improved. If you would like to help in the revision or provide comment on any draft copies, please contact Brenda Cook directly, as she will lead this initiative.

December 2008 Telehealth

We have a lot to talk about and much to share! The DCPNS will be hosting a Telehealth session on Wednesday, December 10, 2008 from 4:00 to 6:00 p.m. for diabetes care providers - physicians, nurse practitioners, diabetes educators, long-term care staff, and others. The DCPNS is taking this opportunity to introduce and discuss three topic areas:

1. The 2008 CPGs—What’s New and What Does this Mean to Practice.
2. eGFR (estimated Glomerular Filtration Rate)—implementation, interpretation, and action issues.
3. Diabetes Guidelines for Elderly Residents in Long-Term Care (LTC) Facilities —context and content.

Please contact the office for information on Telehealth locations and specific times for speakers.

Registry Enhancements

The interface with Meditech (Phase 2 transfer of applicable lab data) was activated in all DCs the end of September. This should ensure good quality data with less duplication of effort, as DC staffs are no longer required to manually enter recent (within 30 days of the DC visit) laboratory results on visiting DC clients.

The Family Physician Report and the Family Physician Lipids Report are being combined into one report for use with DC referring physicians.

Annual Reports for DCPNS Registry On-site Users

The indicator reports (along with interpretation sheets) for the DCs (Registry users) were completed during the summer months and provided to all DCs early in September. These reports provided descriptive, process, and outcomes data primarily for active follow-up cases during calendar year 2007 (adults only with types 1 and 2 DM). It is hoped that these reports will be automated in the future and improved to meet the needs of the Registry user. The data in these reports provides the basis for onsite presentations that highlight local data.

Partnership Projects

“The Prediabetes Pilot: ‘Upstream’ Screening and Community Intervention for Prediabetes and Undiagnosed Type 2 Diabetes” is nearing completion with recruitment expected to wrap up by mid-to-late November in both pilot sites (Antigonish County & Kentville/New Minas). Each pilot site is hoping to recruit 500 individuals between the ages of 40 and 74. For those individuals found to have PreDM, the communities will be delivering a PreDM lifestyle program and will include sessions aimed at understanding PreDM, nutrition, a grocery store tour, physical activity and exercise, stress reduction/management, and goal setting.

Nova Scotia Diabetes Repository (NSDR) Pilot Project is nearly complete. The provisional NSDR has been assembled and is currently being used to answer seven test questions. So far, a number of issues related to data sharing have been identified and resolved. A final report is expected in the coming weeks.

The Diabetes Physical Activity and Exercise Tool-Kit for use by diabetes educators has been introduced through a series of regional workshops offered over the summer and through September. Please see page 11 for a complete update from Jonathon Fowles, Tool-Kit Team Leader.

Diabetes Assistance Program (DAP) for Uninsured Nova Scotians with Diabetes

The data collection portion of this project is now complete, with 317 participants completing both questionnaires. In addition, information was collected on A1Cs, self-care materials, and general comments that were made throughout the interview. A preliminary analysis of the data has been run, and we are looking forward to seeing the final results (expected in December 2008). The Advisory Group will meet in the near future to determine the most appropriate questions to ask of the data.

Peggy Dunbar
Coordinator, DCPNS
Prediabetes (PreDM)

The term ‘prediabetes’ is a practical and convenient term for impaired fasting glucose (IFG) and impaired glucose tolerance (IGT), conditions that put a person at risk of developing diabetes and its complications. It is important to stress that not all individuals with prediabetes will necessarily progress to diabetes. Indeed a significant proportion of people who are diagnosed with IFG or IGT will revert to normoglycemia. People with prediabetes, particularly in the context of metabolic syndrome, would benefit from cardiovascular (CV) risk factor modification.”

Screening:

The 2008 Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs) are similar to the 2003 guidelines in the use of the term PreDM, and the recommendation to screen for DM in people with risk factors remains unchanged. Mass screening remains impractical and not cost effective due to the low prevalence of undiagnosed DM in the general population (< 3%).

The new guidelines are somewhat clearer in its recommendations regarding the use of 75 g oral glucose tolerance test (OGTT), yet not without controversy. These guidelines recommend an OGTT in all those with fasting plasma glucose (FPG) of between 6.1 and 6.9 to identify individuals with IGT or diabetes, and may also be done when the FPG is between 5.6 and 6.0 in the presence of ≥ 1 risk factor. Previously (2003), the recommendation indicated an OGTT in the presence of risk factors when the FPG was between 5.7 and 6.9. This newer recommendation is based on consensus, with no graded evidence.

Work continues on risk scores to help identify individuals at high risk of having undiagnosed DM. Currently, work is underway in Canada (Nova Scotia is part of this pilot work) to help validate a CanRisk Questionnaire to assist in the identification of high-risk individuals.

Interventions:

The 2008 CPGs continue to promote the need for a structured program of lifestyle modification to reduce the risk of type 2 DM in individuals with IGT. IFG has now been added to this recommendation based on consensus, no graded evidence.

Pharmacotherapy (role of metformin and alpha-glucosidase inhibitor) recommendations to reduce the risk of type 2 DM remain unchanged for IGT. New this year is a recommendation in support of treatment with thiazolidinedione in individuals with IFG and/or IGT with no known CV disease to reduce the risk of type 2 DM (Grade A, Level 1 evidence).

The DCPNS will review its recently released PreDM guidelines in light of the 2008 CPGs to determine if any additional change is warranted. Stay tuned…

Reference:

Pregnancy and Diabetes

By now most of us have had a chance to scan the 2008 Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs). The guidelines for pregnancy and diabetes (DM) add emphasis to important issues, offer new recommendations, and open the door for discussions into the care we offer to women in Nova Scotia. This article is intended to provide a summary of the key recommendations with an emphasis on the more significant changes that may or may not affect our practice.

Pregestational Diabetes (DM)

Preconception Care:

- Healthcare professionals should encourage preconception care in women with type 1 or 2 DM. While this information is not new, it bears repeating. The authors of the guidelines noted that adverse pregnancy outcomes for women with type 2 DM have been increasing and may be worse than in women with type 1 DM.

Preconception Counseling:

- Women taking oral antihyperglycemic agents (OAAs) should be switched to insulin prior to pregnancy. An exception may be made for women with polycystic ovary syndrome (PCOS) who are using metformin to assist ovulation. However, the safety of metformin beyond ovulation induction is unknown. Neither metformin nor glyburide have been related to congenital anomalies, but risks of some other adverse perinatal outcomes may be increased compared to using insulin; further study is needed in this area.

Management:

- In the presence of chronic kidney disease, it is now recommended that an estimated glomerular filtration rate (eGFR) from serum creatinine be assessed in each trimester along with albumin-creatinine ratio (ACR). However, eGFR in pregnancy is unreliable. This recommendation may lead to some confusion.

- Women are encouraged to breastfeed to reduce the risk of childhood obesity in their offspring. Metformin and glyburide appear to be safe to use during breastfeeding and may be considered, although long-term studies are lacking.

Gestational Diabetes (GDM)

Screening:

- The 2008 CPGs indicate there is further evidence to support universal screening of all pregnant women. Screening according to risk factors could lead to missing up to 50% of GDM cases. Diagnostic criteria are unchanged as we await further analysis of the HAPO (Hyperglycemia and Adverse Pregnancy Outcomes) Study.

Management:

- Recommendations for the management of GDM and Impaired Glucose Tolerance of Pregnancy (IGTP) are now the same. Nutrition therapy, glucose monitoring, and
initiation of insulin are equally recommended for either condition. In Canada, the use of metformin and glyburide to treat GDM or IGTP is not advised at this time. • Women with GDM or IGTP should be encouraged, as are women with pre-existing DM, to breastfeed to reduce childhood obesity. • The 2008 guidelines place strong emphasis on the need for postpartum follow-up and surveillance programs to reduce the woman’s long-term risk of type 2 DM. Strategies are also needed to improve postpartum screening using the GTT.

In conclusion, this article represents a summary of the recommendations of the 2008 CDA CPGs for pregnancy and DM. These are guidelines for practice that have yet to be fully discussed locally and by the DCPNS Pregnancy and Diabetes Subcommittee. These future discussions will determine what changes are required to the current provincial guidelines as found in the DCPNS Pregnancy and Diabetes Management Guidelines Manual. In the meantime, the CPGs represent a good guide to best practice management of DM and pregnancy.

Lois Ferguson, RN CDE
Pregnancy and Diabetes Program
IWK Health Centre

What’s New in Pediatrics?

The 2008 Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs) are quite similar to those of 2003, but differ in that they consolidate within the pediatric chapter many of the recommendations specific to children and youth and previously found in separate chapters (e.g., hypoglycemia). Children are clearly defined as individuals age 0-18 years. The authors chose to highlight the recommendation that all children with diabetes (DM) (type 1 or 2) be referred to an experienced pediatric diabetes team at diagnosis and for ongoing follow-up. Recommendations regarding the prevention and management of diabetic ketoacidosis (DKA) have also been added. The recommendations for type 2 DM in children and youth are more detailed and with many new elements.

Targets:

• **Type 1:** The glycemic targets for children < 6 years of age have been lowered to < 8.5% from the previous < 9%. For 6-12 year olds, the target A1C remains < 8%; and adolescent targets are the same as for adults (≤ 7%).

• **Type 2:** For most children with type 2 DM, an A1C of ≤ 7% is now the recommended target.

Management:

• The guidelines now explicitly state that the insulin regime should be reviewed for potential intensification at all clinical encounters to be certain that the child is using the optimal regime to achieve A1C targets, minimize complications, and address lifestyle issues.

• A new recommendation has been added suggesting that children with persistent poor DM control (A1C > 10%) be referred to a tertiary care pediatric diabetes team and/or a mental health professional for assessment and intensive psychological interventions for the family and child, with a goal to improve metabolic control.

Managing Acute Complications (acute complications of type 1 DM include DKA and hypoglycemia):

• The home use of mini-dose glucagon is now recommended for children with mild or impending hypoglycemia who cannot take oral carbohydrate. A protocol for mini-dose glucagon is available from the IWK pediatric team. It has been found to be a useful tool in helping families to avoid Emergency Room visits.

• The management of DKA in children should follow a specific pediatric protocol. The current IWK DKA protocol is consistent with these new guidelines, except that ECG monitoring will need to be added more prominently to the IWK guidelines. I am interested to see the new recommendation regarding the prevention of DKA that includes a public awareness campaign to encourage early diagnosis of new onset DM and the availability of 24-hour telephone support for all families with a child with DM. Recent planning at the DCPNS has also identified public and health care professional education about signs and symptoms of DM as an issue to be addressed.

References:


Screening for Complications:

Recommendations for screening for complications of type 1 DM in the pediatric age group are well summarized in Table 4 of the pediatric chapter (page S155).1

- Note that microalbuminuria screening is now recommended from age 12 years in those with DM for ≥ 5 years.
- Regular dyslipidemia screening at 12 and 17 years of age, or earlier if other risk factors are present, is now recommended for all individuals with type 1 DM.
- Table 3 (page S154)1 in the pediatric chapter summarizes recommended screening for co-morbid conditions. Note that celiac disease screening is NOT recommended as routine, but only if clinically indicated.
- TSH screening is now recommended every 2 years in asymptomatic children with negative antibodies and no goiter.

Type 2 DM in Children and Adolescents:

The chapter on type 2 DM in children and adolescents has been significantly expanded and includes recommendations that are more explicit.

- The recommendation for screening high-risk children for DM have changed to allow for screening in children under 10 years of age who have begun puberty and have two or more risk factors with a fasting glucose.
- An oral glucose tolerance test (OGTT) is now only recommended for the very obese child (BMI ≥ 99th %ile).
- Insulin therapy is recommended as first-line for those presenting in DKA or with an A1C ≥ 9%, but may be weaned as control improves.
- Metformin or insulin is recommended after 3–6 months of lifestyle therapy in those not achieving an A1C ≤ 7%.
- Metformin is also presented as an option at diagnosis for those with an A1C > 7%.
- Screening for microvascular complications, hypertension, dyslipidemia, non-alcoholic fatty liver disease, and polycystic ovary syndrome in young women is recommended yearly from diagnosis.

This set of guidelines presents more comprehensive recommendations for pediatric diabetes management than in the past. The addition of DKA guidelines and the expansion of pediatric specific guidelines for type 2 DM are helpful additions.

Beth Cummings, MD FRCPC
Pediatric Endocrinologist,
IWK Health Centre
and DCPNS Medical Advisor

Reference:

Diabetes in the Elderly

The 2003 and 2008 Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs) for DM in the elderly are similar in that treatment should include lifestyle modifications, antihyperglycemic agents (OAAs), and insulin.1

The following are new (2008) areas of thinking for DM in the elderly:

- A structured program of lifestyle interventions that include moderate weight loss and regular physical activity should be considered for the elderly with impaired glucose tolerance (IGT). The 2005 guidelines for the elderly at risk for type 2 DM recommended nutrition therapy and exercise.
- Treatment goals for the elderly with DM and multiple comorbidities, a high level of functional dependency, or limited life expectancy should be “less stringent.” The 2003 guidelines state that treatment goals should be “more conservative” for this group. The recommendations about targets (for both healthy elderly and those with more health issues) continue to be derived from consensus.
- Elderly people with DM living in the community should be referred for interdisciplinary interventions involving education and support. This recommendation did not have supporting evidence. The 2008 recommendation did not recommend specifically a diabetes health team as recommended in 2003, yet this is highlighted in the text.
- Aerobic exercise and/or resistance training is recommended for the elderly with DM in whom it is not contraindicated. Aerobic exercise and resistance training could be
Foot Care

As the Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs) directly influence diabetic foot care practice in Nova Scotia, it is prudent for healthcare providers to examine the new guidelines carefully. This article provides a brief overview of the new 2008 CPGs related to the prevention and management of the diabetic foot.

Prevention of Foot Ulceration

- The 2008 CPGs continue to recommend foot examinations by both the individual and healthcare providers. However, the 2003 CPGs recommended beginning foot examinations at puberty, where the 2008 CPGs recommend foot examinations for all people with diabetes.
- The structural abnormalities component of the foot assessment performed by healthcare professionals has been expanded to include the following: range of motion of ankles and toes, callus pattern, bony deformities, and skin temperature.
- The “Risk Assessment and Preventive Care” section is new to the 2008 CPGs and includes information on:
  - The University of Texas Diabetic Wound Classification System - a validated predictor of serious outcomes in patients with diabetes with foot ulcers.
  - A number of noninvasive assessments for peripheral arterial disease including the ankle-brachial index, determination of toe pressure by plethysmography, transcutaneous oximetry (tcPO2), and Doppler arterial flow studies.

Management of Foot Ulcers

- People at high risk of foot ulceration and amputation should be instructed on proper foot care. This should include counseling to avoid foot trauma.
- Early referral to a health professional trained in foot care management is recommended if problems occur. Footwear should be professionally fitted and foot ulcers should be managed by a multidisciplinary team with expertise in the management of foot ulcers.
- Essentials of good wound care are presented and include:
  - Provision of an optimal wound environment.
  - Off-loading of the ulcer site.
  - Regular debridement of nonviable tissue in nonischemic wounds.
  - Use of dressings that maintain a moist wound environment.
  - Expeditious debridement with sharp instruments or biologically with medical-grade maggots.
  - Use of pressure offloading devices such as temporary footwear, removable and irremovable cast-walkers, and total contact casting.
- Aggressive treatment of any infection in the diabetic foot is now a separate recommendation. Treatments for foot infections are discussed and include:
  - Antibiotic therapy.
  - Surgical debridement of deep infections.
  - Hyperbaric oxygen therapy.

In summary, the 2008 CPGs influence diabetic foot care practice. Through awareness and implementation of these guidelines, healthcare providers can positively impact the outcomes of the diabetic foot in Nova Scotia.

Bev Harpell
Diabetes Consultant, DCPNS

Reference:
Physical Activity (PA)

In reference to physical activity (PA) and diabetes, the new 2008 Canadian Diabetes Association (CDA) Clinical Practice Guidelines (CPGs) (S57-S58) are similar in many ways to the 2003 Guidelines. The beneficial role of PA and exercise in diabetes is restated, as are the recommendations to accumulate 150 minutes of moderate intensity activity, to include resistance training in the overall PA and exercise plan, and to consider an ECG stress test for previously sedentary individuals who wish to undertake exercise more vigorous than brisk walking.1

New messages highlight recent research showing:

- The effects of resistance exercise and aerobic exercise on blood glucose and diabetes are additive.
- Structured PA counselling by skilled healthcare personnel is very effective to “increase physical activity, improve glycemic control, reduce the need for OAAs and insulin, and produce modest but sustained weight loss.”1

Although these comments are new to the CPGs, it is good to know that these are messages consistent with the contents of the new DCNPS Physical Activity and Exercise Toolkit. These messages support the best practice initiative to produce the toolkit, to educate on the benefits of both aerobic AND resistance exercise, and to train diabetes educators in PA and exercise counselling and delivery. The procedural messages are also consistent with the plans and themes outlined in the Toolkit.

New developments from the 2008 CPGs that may be different from the current procedures in diabetes practice are the revisions in the risk management sections — “Identification of Individuals at High Risk for Coronary Events” (S95-S98) and “Screening for the Presence of Coronary Artery Disease” (S99-101).1

The first major change is how individuals with diabetes are categorized as “high risk” for coronary events. Although the previous guidelines suggested that most individuals with diabetes were at high risk based on their lipid profile, blood pressure, and other risk factors, the current guidelines have now specified high risk based on age, as it is stated as “the most powerful predictor of CAD risk” (S95).1 The new guidelines state that “people with diabetes should be considered to have a high 10-year risk of CAD events if ≥ 45 years and male, or ≥ 50 years and female.”1 The classical risk factors for CAD such as smoking, hypertension, and hyperlipidemia, add to the risk conferred by diabetes and these, along with other diabetes risks such as history, lifestyle, abdominal obesity, PA level, and diabetes duration, should still be included in the overall risk evaluation for older and younger individuals with diabetes.

In addition to a full CAD risk assessment, when screening for the presence of CAD, the guidelines now recommend baseline resting ECG for all individuals > 40 years of age, or with duration of diabetes > 15 years, or those with hypertension, proteinuria, reduced pulses, or vascular bruits (S100).1 The resting ECG is recommended to help screen for individuals at high risk for vascular events, especially those with severe CAD and/or with silent ischemia. This test is ordered by or through the client’s physician and is becoming more routine in standard medical practice.

Exercise ECG stress testing is recommended for individuals at high risk of CAD based on age, gender, and the description of or presence of other risk factors such as chest pain, prior MI, peripheral arterial disease, stroke, transient ischemic attacks, or abnormalities in resting ECG. These guidelines are consistent with the Physical Activity and Exercise Toolkit. The CDA CPGs recognize the importance of physical capacity on diabetes and CAD risk, as it states that maximum exercise capacity is the strongest and most consistent prognostic marker of CAD events.

Beyond the two changes described in classification and screening, the new CPGs do not substantially change the procedures for promoting low to moderate PAs and exercise for most individuals with diabetes. The CPGs for PA still state to “consider an ECG stress test for previously sedentary individuals who wish to undertake exercise more vigorous than brisk walking.” Therefore, ECG exercise stress testing is recommended for those individuals who are at high risk with multiple risk factors (as stated above) or those sedentary individuals who want to undertake vigorous exercise from the start of their PA program. These messages are also consistent with the Toolkit. It is also recognized that participation in vigorous exercise in either case is also recommended in the new CPGs and the Toolkit to be supervised through referral to cardiac specialists and/or qualified exercise specialists.

In summary, the 2008 CPGs support that moderate to high levels of PA and fitness are beneficial to diabetes management. The recommendations for screening combined with the procedures in the Toolkit (to graduate individuals through greater participation in activities of daily living, competence in a walking program and involvement in a low-moderate resistance plan) will help to ensure individuals with diabetes achieve these benefits safely.

Jonathon Fowles, PhD, CSEP-CEP
Toolkit Team Leader, Acadia University

Reference:
**Educator Sharing**

**Heart & Stroke Walkabout**

Heart & Stroke Walkabout is here to change the way we think about walking, to put our feet back on the streets, and to discover the benefits of walking. It is a five-year provincial initiative that officially launched in October 2007. The Heart and Stroke Foundation of NS is preparing to introduce various exciting components to complement the interactive website and workshops that began this year.

Some things you can anticipate this fall:

- A province-wide social media campaign will be launched to get the word to the streets, homes, and worksites of NS. The message is simple! Walking is good for everyone - good for our hearts and minds and communities. Walking takes you places.
- In partnership with a media sponsor, a video contest for youth will offer prizes and the opportunity to meet to help revitalize walking in their peer groups.
- Nova Scotians will be able to borrow a pedometer as easily as a book at libraries and C@P sites (in partnership with the NS Public Libraries & Community Access Program).

Later, you can anticipate:

- A tool kit and workshops on impacting policy that helps make your community more walkable.
- An exciting program whereby communities will receive a specialized assessment tool and can rate their “walkability,” aim for improvements, and be recognized for their level of walkability.
- Support resources will be available for employers and workers about how to create workplaces supportive of more walking. Future Leader Orientation sessions and kits will focus on the unique needs of the workplace.

Continuing to be offered:

- Sometimes we all need a walking buddy, or we need a little motivation. Visit the Heart and Stroke Walkabout website (www.walkaboutns.ca) to create or join a walking group for school, workplace, family, friends, or neighbourhood. Participants can track steps graphically to monitor individual or group progress towards goals. An interactive map enables participants to add or locate nearby walking routes. Challenges and rewards are available.
- Quality pedometers with the Walkabout brand can be purchased at a discount, either individually or in bulk.
- Free Walkabout Leader Orientation sessions are available year-round across the province. Each leader receives a toolkit and pedometer. It is a fun, interactive opportunity to learn and share and leave participants feeling confident and supported in leading a group of people in their own unique walking experience.

Walkabout is a comprehensive physical activity (PA) program that goes beyond promotion of PA to consider the broader culture and environment that often keeps us off the streets.

Walkabout is led by the Heart and Stroke Foundation of NS in partnership with the NS Department of Health Promotion and Protection and the Ecology Action Centre. We are supported by sponsors and partners, who are recognized via our website, events, reports, and other opportunities.

For more information, contact Melinda at (902) 423-7682, Ext. 346 or walkabout@heartandstroke.ns.ca

**Melinda Norris**  
Walkabout Project Manager  
Heart and Stroke Foundation of NS

**An Update of the Physical Activity (PA) and Exercise Tool-kit**

The summer is over, and we have now completed the eight regional workshops designed to give diabetes educators (DEs) a more in depth opportunity to use the PA and Exercise Toolkit. The four-hour workshop demonstrated how the methods of effective PA and exercise counselling can be integrated into daily practice and how to implement successful strategies for promoting increased PA participation in persons with diabetes.

Over the first four workshops, we received input regarding the new PA and exercise brochures (handouts). These brochures were refined to tailor messages at each of the three different levels of PA participation, as is portrayed as a process of the Toolkit. They now represent the “state-of-the-art” in materials available to promote PA and exercise for individuals with diabetes. They integrate educational information, behavioural strategies, and key PA and exercise advice. The resistance training brochures provide a key reference for DEs and clients who want to adopt the CDA recommendations of including resistance exercise three times per week in their lifestyle.

We have printed over 25,000 of the brochures for use in Nova Scotia. We hope that they help in promoting physically active lifestyles. Brochures and resistance bands have been distributed to all DGs. (Please note, the on-going supply of resistance bands is something that each DG needs to look at, either in a cost-recovery or budgetary process moving forward.) Research has clearly shown in the last few years that resistance training is a very effective strategy to help manage diabetes, and the beneficial effects of resistance training are additive to the effects of increased PA through walking, for
News From Around the Province

New Faces

Welcome to:

Marilyn Crooks RN. Marilyn joins the staff of Soldier’s Memorial Hospital DC (Middleton).

Valerie Chisholm, RN. Valerie joins the staff of St. Mary’s Memorial Hospital DC (Sherbrooke). Congratulations to June Tate on her retirement.

Please remember if you have a change in any staff (professional or clerical), let the DCPNS office know ASAP. Thanks!

Congratulations to:

Nancy Price, RN CDE, and Terri Delisle, Pdt CDE, Annapolis Valley DC, on the successful completion of the CDE exam.

What’s New at the CDA?

Diabetes Awareness Month

The CDA is looking forward to November activities and a public relations campaign targeting Canadian baby boomers, specifically the 3.1 million individuals (aged 40 to 66) living in Vancouver, Calgary, Toronto, and Halifax. The campaign objective is to raise awareness of the seriousness of diabetes and CV disease complications. World Diabetes Day, November 14, marks the United Nations recognized day with exciting activities happening worldwide. The Association has partnered with the Juvenile Diabetes Research Foundation, along with Novo Nordisk, to help raise awareness. Stay tuned for World Diabetes Day activities in NS.

Summer Camps

The 2008 summer camping season was another wonderful success, due in large part to the support and attendance of healthcare professionals - physicians, dietitians, and nurses. A very sincere thank you, and we hope to see you in 2009! For information related to summer camps in NS, please contact the office at (902) 453-4232 or 1-800-326-7712.

Diabetes Expo

Mark your calendar for the CDA Expo taking place on Wednesday, November 5 at the Holiday Inn, Dartmouth from 6:30 – 9:30 p.m. Guest speakers include endocrinologist Dr. Dale Clayton, who will present “Diabetes and Cardiovascular Disease: What You Need to Know,” and dietitian Mary Sue Waisman, who will be on hand to discuss nutrition as it relates to diabetes and heart disease. For more information, please phone (902) 453-4232.

For more information re: CDA programs/services please call Kelly MacNeil, Manager Programs & Services, at 453-3615.

News from the Company Representatives**

Pam Rediker joins the team at Origin Biomed as the Sales Specialist for Atlantic Canada. Origin Biomed is an Atlantic Canada owned company with a mission to provide an over-the-counter product for diabetic neuropathy. Pam’s role is to provide ongoing support and information on the Neuragen products to all Diabetes Educators. She welcomes any outside feedback and any new opportunities to educate on Neuragen. For more information, contact Pam at 902-444-3849, Ext. 2227.

Reference: