Health Promotion and Disease Prevention Strategies for Type 2 Diabetes

By Dianne McParland RN. BScN., CDE.

Dianne McParland is a Certified Diabetes Educator from Courtice Ontario, specializing in adult type 2 diabetes. She is employed with Lakeridge Health Corporation in the diabetes program and as a diabetes consultant for St Elizabeth Healthcare educating staff who cares for the elderly in the community. She has facilitated at numerous workshops for physicians, pharmacists and other health care professionals. She is actively involved in the community organizing and implementing diabetes awareness events.

Definition of Type 2 Diabetes
Health Canada defines type 2 diabetes as a chronic disorder most prevalent in older Canadians and Aboriginal peoples.

The Epidemic
The prevalence of type 2 diabetes has tripled in the last 30 years. Estimates show that there are about 180 million people with diabetes in the world. By the year 2025, the World Health Organization estimates that there will be 300 million people with the disease.

Type 2 diabetes is rapidly becoming an epidemic in Canada, our government has recognized it as a public health problem. Statistics from the Canadian Diabetes Association inform us that more that 2 million Canadians have diabetes and another 600,000 are estimated to have it but remain undiagnosed. In Ontario, for example, one person is diagnosed with diabetes every 20 minutes, 600,000 people have it, and another 300,000 have it but don’t know it. Four out of 10 people with diabetes will develop serious long-term complication, such as blindness, kidney disease, heart disease, stroke, limb amputation and reduced life expectancy. Diabetes is a costly disease and so are the hidden costs such as loss of productivity from sickness, disability and premature death.

The complications can limit life, quality of life, and do inflict an incredible burden on our healthcare system.

Why the Increase in Type 2 Diabetes?
For some there is a genetic predisposition to develop diabetes but environmental factors also play a key role in determining who will get diabetes.

The physical activity of days gone by was useful in maintaining a healthy body weight, but with advances in science and technology, this has been increasingly replaced by more cerebral activities that do not require much expenditure of energy. We have evolved into a sedentary society, which is proving to be detrimental to our health. Our children are less active and often eat increased amounts of high fat convenience foods. They spend more time studying and playing computer games and less time on physical activity. These environmental stressors have resulted in children being diagnosed with type 2 diabetes and some type 1 diabetes centres report 20 to 25 percent of their clients are children and adolescents with type 2 diabetes.

Now approaching retirement age, the “Baby Boomer” generation, by virtue of their large numbers, will have an impact on the increase in type 2 diabetes.

The typical North American diet has deteriorated over the years. Busy families with both parents working have little time to prepare and enjoy nutritious meals. Fast foods, high in fat and carbohydrates along with large portion sizes often replace healthy eating.
The Good News
Although there is no cure, type 2 diabetes is an easily modifiable and treatable disease and current research is indicating that it may be preventable or at least delayed until much later in life. The National Institute of Diabetes & Digestive & Kidney Diseases recently sponsored a study called the Diabetes Prevention Program where they took 3,234 participants with impaired glucose tolerance and looked at whether diet and exercise could reduce or prevent the onset of type 2 diabetes. The study was so successful that it was terminated a year early as the data had clearly answered the research question. Whether or not it can prevent it altogether is not yet known as the study’s duration was only three years. Smaller studies around the world have shown similar results.

Risk Factors and How to Reduce Them
As educators it is important that we make sure our clients know their risk factors and are screened routinely if risk factors are present. We must encourage them to follow Canada’s Food Guide to Healthy Eating and to participate in regular physical activity.

Risk Factors
- Age: Increases the risk of type 2 diabetes. Canadian statistics show the prevalence of diabetes in those over 65 is 3 times higher than the group aged 35-64. While those over 65 make up the largest number diagnosed there is a disturbing appearance of type 2 diabetes in children especially aboriginal girls.
- Obesity: This is defined as excessive body weight. Body mass index (BMI) is a widely accepted way of measuring weight in relation to health. A healthy body weight ranges between 20 and 25 and if one’s BMI is >27 one is at risk for diabetes and other health problems. At least 80% of all people with type 2 diabetes are overweight. Another factor in excess weight is the distribution. A person with an apple shaped body, weight around the middle, is at higher risk than someone with a pear shaped body, whose weight is distributed around the hips and thighs. A waist measurement of more than 100 cm in men and 95 cm in women increases one’s risk.
- Hypertension: 60% of people with undiagnosed diabetes have high blood pressure.
- Family history: There appears to be a genetic link and it is stronger in those with type 2 diabetes especially if the person is a first degree relative.
- Gestational diabetes: 2% of all pregnant women will develop diabetes during their pregnancy. Forty percent will go on to develop type 2 diabetes within 5 to 10 years after giving birth.
- Ethnic origin: Aboriginals, Africans, Latin Americans or people of Asian ethnic ancestry have 2 to 6 times higher risk of developing type 2 diabetes than Canadians of Caucasian origin.
- Sedentary lifestyle: People who are inactive are at greater risk of type 2 diabetes and other health concerns such as premature death, high blood pressure, stroke, and depression.
- High Cholesterol/Triglycerides: More than 40% of people with diabetes have elevated fats in their blood, which put them at increased risk of cardiovascular disease.
- Impaired Glucose Tolerance: This is a condition determined by a blood test, a fasting blood sugar, which falls just short of the diagnostic criteria of 7 mmols/l. These individuals do not have diabetes, however, their reaction to sugar loads is abnormal and 1 in 10 will progress to type 2 diabetes within 5 years. For them preventative strategies and regular screening is imperative.

The more risk factors an individual has the greater his/her likelihood of developing the disease. If any risk factors are present, screening and regular follow-up is essential. Even though we can target high-risk individuals, we know that diabetes occurs...
in people of moderate risk also and therefore, it is important to include prevention strategies that cover a population based as well as a high-risk approach.

Routine Screening
3 to 5 percent of adults have undiagnosed type 2 diabetes. Research has shown conclusively that when early diagnosis and interventions such as reduction of high-risk behaviors is initiated the development of complications can greatly be reduced. Screening should be done routinely (refer to clinical practice guidelines) for all individuals with identifiable risk factors. Of note, there are no cost benefits to mass screening due to the low rate of diabetes in the general population.

Healthy Eating
Health Canada says that healthy eating is the sum total of the good food choices we make over time. These choices should be made up of the four food groups. The right balance of food and activity helps us keep a healthy body weight. A healthy body weight reduces the risk of type 2 diabetes.

Regular Physical Activity
Health Canada believes that all Canadians should have 60 accumulated minutes of physical activity per day to stay healthy. Everyone can benefit by becoming more active especially those with chronic conditions such as diabetes. The intensity is what counts, so as one progresses to a regular regimen of moderate activity it can be reduced to 30 minutes 4 days per week. A physician should be consulted before beginning to make sure there are no contraindications to the type of activity decided on.

Tips to Help Them Get Started
Encourage your clients to start low and go slow, include a warm up and a cool down before and after activity, and to find a friend who shares their commitment and activity level. Suggest they set aside a specific time and work through all their excuses. Set an achievable goal and once they reach it set another. Keep a record of time spent per day on physical activities and make it fun. Remember walking is an excellent form of physical activity and it costs nothing.

Whose Responsibility Is It?
According to the Diabetes Strategies for Prevention report by the Ontario Chief Medical Officer of Health, all Canadians must work on this problem. In order to ease the burden on individuals and the health care system it must be tackled on an individual, family, community and health care provider basis, and at the provincial and federal level. Presently the burden of diabetes due to health care costs, disability, work loss, and premature death is estimated to be up to $9 billion annually.

For Individuals and Families
- Reduce obesity through regular physical activity and healthy eating practices.
- Develop awareness of diabetes symptoms and screening guidelines
- Don’t smoke as it reduces one’s ability to take part in physical activities among many other health hazards.
- Reduce stress

For Communities
- Boards of health must provide leadership for prevention
- Communities must promote physical activity, healthy eating and healthy weight.
- Communities must advocate that diabetes receives priority consideration in local health and education initiatives

For Health Care Providers
- Learn and adopt clinical practice and prevention guidelines for diabetes
- Educate clients about the prevention and treatment of diabetes
- Provide comprehensive and coordinated health care to prevent and lessen serious and long term complications
Encourage aggressive anti-smoking education among people with diabetes, as well as the general population.

For Federal and Provincial Governments
- Establish a tracking system for diabetes, presently information about rates of diabetes and its complications is very limited
- Ensure accessibility to diabetes care
- Create accessible resources to support diabetes education for clients, health care professionals, the public, and policy makers
- Provide consumer information on the content of all foods
- Provide more funding for research projects in diabetes related fields

Conclusion
Diabetes can affect anyone. Most people will have at least one risk factor for diabetes, e.g., a family history, obesity, decreased physical activity, over age 45, high-risk ethnic heritage, gestational diabetes or impaired glucose tolerance. All Canadians need to raise their awareness of prevention strategies in order to protect themselves and those they love. By improving one’s lifestyle and modifying detrimental behaviours the risk of developing diabetes can be greatly reduced or eliminated altogether. Healthy eating, regular physical activity and maintaining a healthy weight along with support from family, community, health care providers and the government will go a long way in ensuring a high quality long healthy life.

Reference List
3. A National Dialogue on Healthy Body Weights, December 7-9, 2001 Toronto, Ontario: Summary of Proceedings. Obesity Canada and the Canadian Institutes of Health Research Institute of Nutrition, Metabolism and Diabetes
4. Food for Thought. Adapted from the Ontario Ministry of Health’s “I rate +” Program in the Healthy Weight Program, Nutrition Services, Halton Regional Health Department, 1994

Review
Meals for Good Health – Teaching Binder
By Karen Graham

Karen Graham who authored “Meals for Good Health” the cookbook, has released a new teaching binder featuring the same beautiful photography found in the cookbook and more.

The binder is directed at dietitians, health workers and teachers. It contains a lifestyle quiz for use with your class, activities, facilitator notes and a list of resources.

This new resource is presented in overhead format and can be used as overheads, but it also can be used in a flipchart format, for use teaching individuals or small groups. There are 33 informational overheads and 23 meal picture overheads for inspiration, instruction and demonstration.

The binder can be used for teaching general nutrition subjects, weight management or diabetes. Canada’s Food Guide and a Diabetes Food Guide are provided, depending on the nature of your client or group. It can be used in its entirety, or in a modular way. Depending on your focus you can use the meals presented as examples to model, or ask your class for suggestions for improvement.

Whether you want to use the binder as a template for conducting a nutrition class or to augment a program that you have already created, the overheads contained in Meals for Good Health – Teaching binder will add an appealing visual interest.

The binder is well worth the cost of $149.99 to help you add a professional look to your next presentation or class.

If you want to know more about ordering Meals for Good Health – Teaching Binder, check out www.mealsforgoodhealth.com or call toll-free 1-866-733-9409 to order.
Equal Works for Your Patients

You know that Equal has the great taste people love. In restaurants and at home, Equal provides all of the sweetness of sugar, with only a fraction of the calories and carbohydrates. Equal not only tastes great but is available in convenient tablets for hot beverages, packets for hot or cold beverages, and Spoonful for cooking and baking.

With the grocery store shelves filling up with more and more choices every day, you may ask yourself what makes Equal the best choice among sugar substitutes.

When Equal was introduced over two decades ago, it revolutionized the way we eat by allowing people to enjoy the great taste of sugar, with fewer calories and carbohydrates. Since then, Equal has been on a mission to help people experience great taste and maintain a healthy lifestyle. We take this to heart. And nowhere is this more evident than at the heart of Equal – our test kitchen.

In the Equal Test Kitchen, we create new versions of favourite recipes that not only use Equal, but also take into account other nutritional factors, such as fat content. We test these recipes in our kitchen to ensure consistent success.

Unlike other makers of sugar substitutes, we pay close attention to all the food values (fats/carbohydrates), to give you recipes that not only taste delicious but can easily fit into any healthy eating plan. Take the Bittersweet Chocolate Torte recipes for example. It’s lower in calories but we think that it is every bit as decadent as the traditional recipe. That’s why you can count on us to be your partner in your patient’s sweeter, healthier lifestyle. The choice is simple. The solution is Sweet. Equal works!

For a complete list of our fabulous recipes, including drinks, deserts, baked goods, and main courses, visit http://www.equal.com.
CRYSTAL LIGHT
Strawberry Orange Banana Refresher

Just follow our 3 simple steps:

1. EMPTY 1 pouch CRYSTAL LIGHT Strawberry Orange Banana Low Calorie Drink Mix in blender container.
2. ADD 1 ½ cups cold water, ½ cup cold orange juice and 1 Tbsp lime juice, cover. Blend on high speed until drink mix is dissolved.
3. ADD 4 cups crushed ice or ice cubes. Cover, blend until smooth. Serve immediately.

Makes 5 (1 cup) servings.

Per Serving
Calories 16  Protein .28 g
Fat .02 g  Carbohydrate 3.17 g

Canadian Diabetes Association
Food Choice Value
1 serving = 1/2

SMUCKER'S
No Sugar Added Fruit Spreads

Here's a tasty treat for people who follow a sugar-reduced or carbohydrate-reduced diet. J.M. Smucker's delicious line of No Sugar Added Fruit Spreads is sweetened with Sucralose, the only sweetener that's actually derived from sugar.

“The advantage of Sucralose over other artificial sweeteners is that it delivers a similar taste to that of sugar,” Product Manager Peter Saikali points out. “So our No Sugar Added Fruit Spreads really match the tasty, wholesome fruit flavour that makes our regular brand the best loved jams in Canada and the U.S.”

Sucralose has other advantages for people with diabetes. The body does not recognize it as a sugar or carbohydrate, so it does not influence carbohydrate metabolism, insulin secretion, fructose absorption, glucose absorption, glucose utilization and short- or long-term blood glucose control.

The Smucker’s line of No Sugar Added Fruit Spreads includes everyone’s favourite fruit flavours – Strawberry, Raspberry, Apricot, Orange and Blueberry. Each 15 mL serving (1 tbsp) has just 20 calories, 0 g fat and 5.4 g of carbohydrate. In Canadian Diabetes Association food value terms, that represents a 1/2 Fruits & Vegetables Choice rating.

“People with diabetes and consumers with low sugar needs can spread our No Sugar Added Fruit Spreads on thick, just the way they used to enjoy their jam, but without the added sugar,” adds Mr. Saikali. For anyone who is sacrificing sugar, that’s sweet news indeed.
Helping People with Diabetes Change: Stages of Change

By Julie Devlin, RN, CDE

The Stages of Change model, also known as the Transtheoretical Model of Change (TTM), has become the focus of a unique program for diabetes educators in Canada. A small group of educators were motivated to pursue the development of this theory in their diabetes practice, after attending a 1994 seminar introducing James Prochaska and his original TTM work in smoking cessation.

The central hypothesis of the TTM is that not all individuals are prepared to take action to change their behavior at a given point in time. Further, individuals pass through stages varying in their characteristics related to self-efficacy and decisional balance. By knowing the individual’s stage, helping professionals can design/select the strategy that is “The right thing for that person at that time”.

Contemporary diabetes management is based on an implicit assumption that all those attending a diabetes education program are prepared to change. Many diabetes education/management programs have little to offer those individuals currently unwilling to attend diabetes education programs or to follow through on self-care behavioural recommendations. TTM offers these individuals and their care providers a new approach in addressing changing behaviours for diabetes care.

By studying how people changed behaviours, with or without help, a pattern of five stages has emerged, each defined by the person’s intention to change within a given timeframe, along with descriptors or characteristics common to each of these stages.

The Stages of Change
Change of any kind comes in stages. Success is movement from one stage to the next. The stages are:

Precontemplation
When someone has no intention of changing a particular behavior.

Contemplation
When they are thinking about change but the barriers to change still outweigh the benefits.

Preparation
When the reason to change begins to outweigh the barriers and the subject starts making a plan to begin change in the next 30 days.

Action
The slipperiest stage, when the subject has changed the behavior but is at most risk of sliding back or recycling into an earlier stage. Support and encouragement can help keep the subject from losing confidence and slipping back.

Maintenance
When the new behavior has been successfully in place for six months or more. Here again support reduces the risk of recycling.

The Stages of Change Model may be used to guide any therapeutic intervention, whether it be an individual encounter, a one-page poster or an entire program of learning. With individuals, it may be used to guide the content, pace and style of your assessment process and individuals plan of care. With group classes, it may be used to develop stage-based objectives and plan appropriate teaching strategies to accomplish them. It may be used to develop teaching tools or handout materials that are appropriate for different learning objectives. In fact, the LifeScan Education Institute used the Stages of Change as a platform to developed the Test For Success teaching tool, which assists Diabetes Nurse Educators in teaching blood glucose management to their patients. In addition, the LifeScan Education Institute developed the poster “What Happens To Your Blood Sugars When?” that assists people in the precontemplation stage of the Stages of Change.

The TTM does not replace guidelines for good communication/education skills – it suggests that we could use them more effectively through a stages of change approach to assessment and planning. The programs have been a great success with over 30 workshops held in various provinces across Canada. For more information about this workshop or how to organize a workshop in your area, please contact the LifeScan Education Institute Coordinators at (604) 320-2908. To find out more about the Test For Success teaching tool or the precontemplation poster please contact your local sales representative.
LIPID MANAGEMENT

In May 2000, a working group of Canadian experts updated the Canadian guidelines on the management and treatment of dyslipidemia. They made numerous changes from the previous guidelines that are important. The most significant, however, affects people with diabetes.

In these guidelines, individuals over the age of 30 who have diabetes mellitus (defined as a fasting blood glucose level of \( \geq 7.0 \text{ mmol/L} \)) have been moved into a new category. They are now considered to be at “very high risk” for CAD — placing them at the same risk level as people who have had a heart attack or stroke.

A recent study published in the U.K. has also shown that in diabetic patients, lipid management is even more important than glucose management for the reduction of cardiovascular risk. It was found that intensive blood glucose control in patients with type 2 diabetes reduced the incidence of retinopathy and nephropathy, but had less of an impact on CAD risk. It has been shown in a study published in the New England Journal of Medicine that type 2 diabetes increases the risk of CAD by a factor of two to four. For this reason, the Canadian working group described lipid lowering and blood pressure control as “major priorities” for these patients.

The guidelines also recommend target lipid levels for people in various risk groups. They suggest that very high-risk patients, including people with diabetes, aim to keep LDL cholesterol levels below 2.5 mmol/L, triglyceride levels below 2.0 mmol/L and the ratio of total cholesterol to HDL cholesterol below 4.0.

For patients with elevated LDL cholesterol levels, with or without abnormal triglyceride levels, the class of drugs called “statins” are recommended as the drugs of choice. Research has shown that in people with diabetes, a statin drug can reduce the likelihood of a cardiovascular event and may increase survival. These drugs cause relatively few side effects and are all available in once-a-day tablet forms.

For further information on cholesterol and your heart, call: 1-877-4-LOW-LDL (1-877-456-9535).

References:

Sponsored by an unrestricted educational grant from Pfizer Canada Inc.

Colgate Total*

As Diabetes Educators, alerting your clients to the special care that people with diabetes need to take is all part of their diabetes management program. It’s particularly important for them to take proper care of teeth and gums since studies have shown that people with diabetes tend to be three times more susceptible to gum disease.

Colgate Total* Toothpaste is the only toothpaste clinically proven to go beyond cavity protection to fight plaque, tartar, and gingivitis, the first stage of gum disease. Therefore, brushing with Colgate Total*, flossing, eating a balanced diet, and making regular visits to your dentist are all important things to remember for proper oral health.

*TM Reg’d Colgate-Palmolive Canada Inc.
Diabetes, a medical condition that affects more than two million Canadians can also cause erectile difficulties (ED). About half of diabetic men between the ages of 40 and 50 have some degree of ED. By age 70, this figure is closer to 95 per cent. For these men and their sexual partners, loss of self-esteem, embarrassment and relationship difficulties are not uncommon – ED can cause significant personal and emotional stress that affects all aspects of their lives.

Yet, many men are still uncomfortable discussing ED with their physicians, and in some cases, their partners. It may surprise them to learn that the majority of Canadian family physicians have prescribed an ED treatment, reflecting their willingness and ability to diagnose and treat this condition. It also shows that men are not alone in their concern about ED.

“There is an increased incidence of ED among men with diabetes, which may be seen as a complication,” said Dr. Brewer Auld, urologist and Chair of the Canadian Male Sexual Health Council. “These men, however, can manage both their diabetes and their ED effectively – leading to a striking improvement in their well-being. With effective treatments readily available for ED, all men – including men with diabetes – are encouraged to talk to their doctor about their ED.”

For most Canadian adults, sexual health is an important part of their overall well-being. In fact, most men and women expect to enjoy a healthy sexual relationship, including the option of sexual intercourse, well into their older years. Men who receive effective treatment for ED are usually thrilled with their improved sexual activity.

**What Is ED?**

ED is typically defined as the persistent inability to attain and/or maintain an erection that is satisfactory for sexual performance. The easiest to recognize, of course is complete ED, which is the inability to achieve an erection in any circumstance. But ED is more precisely a condition that occurs in various degrees. In fact, the majority of men with ED (82 per cent) have mild to moderate ED, which can be defined as intermittent and/or increasing loss of penile rigidity with an associated impact on sexual activity.

Regardless of its degree of severity, men should consider ED a legitimate medical concern deserving of treatment. ED is not an inevitable result of aging.

**How Is ED Associated With Diabetes?**

For men with diabetes, the blood vessel problems and nerve damage that may be present with diabetes can also cause a slow and progressive deterioration of erection quality over time.

ED may also be caused by factors such as smoking, obesity, excess alcohol use and stress. Scientists believe that these factors may also be associated with type 2 diabetes, the kind that affects 90 per cent of Canadians with diabetes. Removal of these contributing factors could be important in preventing or minimizing the physical and emotional impact of both diabetes and ED.

**Can ED be Treated in Men with Diabetes?**

The good news is that regardless of the cause, the majority of cases of ED are treatable. ED doesn’t need to be a difficult subject to discuss, especially since today’s treatment options can give new hope for restoring sexual functioning. It is encouraging for men and their partners to know that there are safe and effective treatments now available. Your doctor can help you to decide whether or not to treat your erectile dysfunction and identify the best treatment option for you.

For more information on ED in men with diabetes or ED in general, call 1-800-951-2033 (an ED information line answered by a nurse) or visit www.yoursexualhealth.com.

Sexual Health Inventory for Men (SHIM) questionnaires have been included in this package to facilitate self diagnosis of erectile dysfunction within individuals that consult with you.
Yves Veggie Cuisine, a Vancouver-based company, would like to introduce you to its wide variety of soy-based meat alternatives. Yves vegetarian meat products are made with soy, and are cholesterol and preservative free. Since all of Yves products are pre-cooked, they take only minutes to prepare - just heat them up and serve them! You’ll find Yves Veggie Cuisine products in the produce section of your local grocery or health food store.

For a quick and tasty dinner, try cooking with Yves Veggie Ground Round, a versatile yet easy-to-prepare alternative to ground meat. Not only is this great tasting product a good source of protein, it’s low fat, cholesterol free, preservative free, and contains 3 grams of fibre per serving. Veggie Ground Round comes in three delicious flavours - Original, Italian, and Mexican. Try it in one of your favourite recipes - lasagna, pasta sauce, chili, tacos, shepherd’s pie or Sloppy Joes.

The Good Veggie Burger makes a great lunch or dinner. The 75-gram patty is a good source of dietary fibre and contains 12 grams of protein, 7 grams of carbohydrates, and only 4 grams of fat. Yves Veggie Cuisine burgers are equally tasty whether prepared on a BBQ or stove top.

To offer kids a quick and nutritious snack, try Yves Veggie Chick’n Nuggets. They are baked and not fried, like traditional nuggets. This makes them a perfect low fat and cholesterol free treat. Like all of Yves products, Veggie Chick’n Nuggets take mere minutes to warm up in the oven or on stove top.

Try the recipes ideas in the enclosed Yves Veggie Cuisine, GOOD COOK BOOK and visit our web site at www.yvesveggie.com. We are confident your clients will value your recommendations for preparing these simple, nutritious meals. Good health and bon appetit!