What is Cardiovascular Disease?
Cardiovascular disease CVD relates to a variety of conditions affecting the circulatory system, more specifically the heart and the blood vessels. Some examples of cardiovascular disease include coronary artery disease, angina, stroke, myocardial infarction and hypertension. Patients with diabetes are at a much higher risk of developing cardiovascular disease.

At the time of diagnosis of diabetes, up to 50% of patients present with some form of cardiovascular disease. These patients have the same myocardial infarction risk as a person who has already had a cardiac event. The risk can be up to four times greater in the patient with diabetes. The risk of hypertension is higher among certain ethnic groups such as African-Americans, First Nations People and Asians.

Another major risk factor of cardiovascular disease is Syndrome X. This cluster of metabolic disorders is also known as “Metabolic Syndrome”, “Syndrome of Impaired Insulin Sensitivity”, “Insulin Resistance Syndrome” and “Reaven’s Syndrome” after endocrinologist Dr. Gerald Reaven. In 1988, Medical Researcher Dr. Reaven from the University of Stanford theorized that these disorders represent a major risk factor for CVD. The five main components to Syndrome X are insulin resistance, elevated triglycerides, blood pressure, low HDLs and abdominal obesity. These patients do not respond well to insulin; they are insulin resistant. This syndrome is present in patients with three of the following five risk factors.
1. Abdominal obesity:
   - men >102 cm waist
   - women >88 cm waist
2. Triglycerides 1.7 mmol/L or higher
3. HDL Cholesterol
   - men <1.0 mmol/L
   - women <1.3 mmol/L
4. Blood Pressure (mm Hg)
   - 130 systolic or higher
   - 85 diastolic or higher
5. Fasting blood sugar 6.1-6.9 mmol/L

Reducing the risk of cardiovascular disease in patients with diabetes is a complex problem. We need to look at lifestyle modifications, control of blood pressure, lipids and glucose to decrease the risks.

Lifestyle modifications are essential in the prevention of cardiovascular disease. Patients are encouraged to:
- limit alcohol consumption (men 2/day, women 1/day)
- stop smoking
- decrease weight - improves HDL, triglycerides, blood pressure plus a weight loss of 5% (15-20lbs) can also greatly improve blood sugars
- increase daily physical activity to 30-60 minutes per day
- incorporate activity into the daily routine (ie: take the stairs, park further away from the stores…)
- discuss daily ASA therapy with family doctor

Dietary modifications include:
- reduce the consumption of saturated and hydrogenated fats
- reduce salt intake
- increase the number of fresh fruits and vegetables
- increase fibre (soluble)
- choose lean meats
- choose fish/chicken/legumes/ tofu
- switch to low fat dairy
- consume less butter/margarine
- choose monounsaturated and polyunsaturated fats and oils
- choose sweets and bakery treats less often

Next we can look at blood pressure. Hypertension, measured with a sphygmomanometer, is presented in values expressed in millimetres of mercury (mmHg). The upper number is the "systolic" or pressure in the arteries when the heart is contracting or pumping, and the lower number is the "diastolic" or pressure in the arteries when the heart is between beats or at rest.

According to the Canadian Hypertension Society (CHS) and the World Health Organization (WHO), normal values are approximately 120/80. Blood pressure changes throughout the day in response to rest, activity and stress. Risks associated with hypertension include stroke, myocardial infarction, aneurysm, peripheral artery disease, hypertensive retinopathy and nephropathy. The 2003 CHS Guidelines recommend blood pressure targets of <=130/80 mmHg for people with diabetes and <125/75 for those with significant proteinuria.

Studies such as the UKPDS (United Kingdom Prospective Diabetes Study Group 1998) demonstrated that tighter control of blood pressure was associated with a reduction in diabetes-related deaths and macrovascular complications. When lifestyle modifications cannot control hypertension, medications are introduced. Medications commonly used to treat hypertension include diuretics, beta-blockers, calcium-channel blockers, ACE inhibitors and ARBs.

Diuretics (Thiazides, Loop Diuretics, Potassium Sparing Diuretics) help to eliminate water and salt through the kidneys. These medications may cause hyperglycemia and hypokalemia. Patients should take these in the morning to minimize the diuretic effect at night. Examples of Diuretics include: Hydrochlorothiazide (HydroDiuril), Furosemide (Lasix), Spironolactone (Aldactone)

Beta-blockers work by blocking the beta-adrenergic receptors that increase heart rate. These medications decrease the heart rate and the amount of blood the heart pumps thus reducing the workload of the heart. They may mask signs of hypoglycemia, cause insulin resistance, aggravate lipids and may cause sudden dizziness when standing. Examples include: Atenolol (Tenormin), Nadolol (Corgard), Metoprolol (Lopressor)

Calcium-Channel blockers work by keeping the blood vessels open; they block the movement of calcium into the muscle cells and in turn decrease the size of the blood vessels. Side effects include constipation, edema, dizziness, upset stomach and flushing. Examples include: Nifedipine (Adalat), Felodipine (Renidil), Diltiazem (Cardizem), Verapamil (Isoptin, Chronovera)

Angiotensin-converting enzyme inhibitors, more commonly known as ACE inhibitors, block a specific enzyme that is needed by the body to produce angiotensinogen (a chemical that makes the blood vessels constrict). This allows the blood vessels to relax, enlarge, reduce the resistance to the blood flow and thus reduce blood pressure.
Introducing new Mott’s Fruitsations® Unsweetened Granny Smith: It’s the delicious fruit snack that’s full of apples and other real fruit, but no refined or processed sugar. Just great taste and Vitamin C.** Available in Country Berry, Peach Medley, Apple, Pineapple Pleasures and new Granny Smith® flavours. Try them all.

Mott’s Fruitsations® **Unsweetened** All You Taste Is Fruit.
Side effects include dry cough and hyperkalemia; they may prevent diabetic nephropathy and are lipid neutral. Examples include: Ramipril (Altace), Fosinopril (Monopril), Lisinopril (Zestril), Elaanaril (Vasotec), Quinapril (Accupril), Cilazapril (Inhibace).

Angiotensin II receptor blockers (ARBs) do not prevent the formation of antitensin but rather block its effect. (Angiotensin normally raises the blood pressure and heart rate). Side effects include dizziness and gastrointestinal upset; they may help prevent diabetic nephropathy. Examples include: Losartan (Cozaar), Irbesartan (Avapro), Telmisartan (Micardis)

Along with hypertension, dyslipidemia also contributes to cardiovascular disease.

Cholesterol is a soft waxy substance found in the blood. It is a type of lipid or fat which is essential to the body for the development of cell membranes, nerve tissues and hormone production. Up to 80% of the cholesterol in our blood is manufactured by the liver, with only 20% coming from the food we eat. Excess amounts of lipids in the blood can accumulate on the walls of the arteries leading to atherosclerosis.

When screening for cholesterol, we measure Low-density Lipoproteins (LDL), High-density Lipoproteins (HDL), Triglycerides, Total Cholesterol and HDL/Cholesterol Ratio.

Cholesterol and other fats cannot dissolve in the blood; they need to be transported by lipoproteins such as the HDLs. These lipoproteins transport excess lipids from the cells and bloodstream for excretion from the body. The most common types of lipoproteins are LDL and HDL.

Low-density lipoproteins (LDL) are often referred to as the “bad” cholesterol. Excess LDLs deposit on the walls of the arteries as plaque forming atherosclerosis. This accumulation of plaque can lead to myocardial infarctions and strokes. High levels of LDLs can be caused by genetics, inactivity and poor diet. High density lipoproteins (HDLs) are the “good” cholesterol; they help carry away the LDL from the artery walls back to the liver where it can be broken down and excreted from the body.

Triglycerides are a type of fat essential for energy; they are stored in adipose tissue. High triglycerides are often associated with excess consumption of alcohol, excess weight or poorly-controlled diabetes.

The most common lipid abnormalities seen in people with diabetes are elevated triglycerides, LDL and decreased HDL. In poorly-controlled diabetes, we often see a further exaggeration of the values.

Recommended Lipid Levels:
- Total cholesterol <5.2 mmol/L
- LDL <2.5 mmol/L
- HDL >1.0 mmol/L
- Total Cholesterol ratio <4.0 mmol/L
- Triglyceride <2.0 mmol/L

Medications for dyslipidemia include statins, fibrates, niacin and resins. Statins (HMG-CoA reductase inhibitors) are easily distinguishable by their generic names ending in “statin”. They lower cholesterol levels and are effective at lowering LDLs. They work at the liver level by decreasing cholesterol production. It is believed that most of the cholesterol is made during the night, so it is beneficial to take statins close to bedtime. Side effects are relatively uncommon but can include liver changes and myopathy, headaches and insomnia. Examples include: Atorvastatin (Lipitor), Fluvastatin (Lescol), Lovastatin (Mevacor), Pravastatin (Pravachol), Simvastatin (Zocor)

Fibric Acid Derivatives or Fibrates are most effective on lowering triglycerides; they can increase HDLs and lower LDLs. Side effects are also uncommon but include myopathy and gastrointestinal disturbances such as nausea, vomiting and abdominal pain. Examples include: Bezafibrate (bezalip), Clofibrate (atromid-S), fenofibrate (lipidil), Gemfibrozil (lupid)

Nicotinic acid or Niacin reduce triglycerides and LDLs while increasing HDLs. Unfortunately the side effects often limit their use. They are not generally recommended for people with diabetes because they can increase blood glucose levels. Side effects include flushing, itching of the skin, gastrointestinal upset and liver damage. They should be taken with food and may be better tolerated if dose is slowly increased.

Bile acid sequestrants or Resins work in the intestine to bind and remove cholesterol and lower LDL. They remove bile acids which are made from cholesterol; when the bile acids are removed, the body makes more bile acids which remove more cholesterol. The most common side effects include constipation and gastrointestinal upset. Vitamin/mineral supplements may be required as this medication can also bind with and remove other drugs and supplements. Resins may also increase triglycerides. Examples include: Cholestyramine (Questran, Prevalit), Colestipol (Colestid)

We are anxiously awaiting new Clinical Practice Guidelines for the Management of Diabetes in Canada (expected to be released in late 2003 or early 2004). We expect to see new recommendations on how we treat diabetes and cardiovascular disease. Making changes to the way we treat hyperlipidemia, hypertension and hyperglycemia can help to prevent the formation and progression of cardiovascular disease in people with diabetes.

Carol Stathers, RN CDE, is a Certified Diabetes Educator and freelance writer. She has written for a variety of health related magazines, newspapers and diabetes journals. She works as a diabetes nurse educator in Summerland and Penticton BC and teaches health related courses at Okanagan University College. She is a married mom of three young children. Carol.Stathers@interiorhealth.ca

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Corgard® Squibb Canada Inc
Cozaar® Merck-Frosst Canada Inc
Inhibace® Hoffman La-Roche Limited
Fibre 1*

General Mills has included a full sized sample of their Fibre 1* cereal. Fibre 1* currently offers the highest source of dietary fibre among high fibre cereals (Source: Survey, Chatelaine, June 2000). Fibre 1* is also low in fat, and cholesterol free. As you teach your clients to be label savvy you will probably want to point out that a half cup serving of Fibre 1* has 14 grams of fibre and, although it has no sugar added, aspartame gives it a palatable sweetness. The half cup (30g) serving has a Canadian Diabetes Association Food Choice Value of 1 Starch Choice. The two separately sealed packs guarantee freshness and crunch.

Hold the Sugar, Keep the Taste

All Smucker’s No Sugar Added Fruit Spreads are naturally sweetened with concentrated white grape juice and Sucralose. “The advantage of Sucralose over artificial sweeteners is that it delivers a similar taste to that of sugar,” Marketing Manager Leslie Gage points out. “So our No Sugar Added Fruit Spreads match the wholesome fruit flavour of our regular jams.”

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 nor short- or long-term blood glucose control.

Smucker’s No Sugar Added Fruit Spreads are available in Strawberry, Orange, Blueberry, Raspberry and Apricot. They contain no artificial flavours. For anyone who is sacrificing sugar, it’s all sweet news indeed.

Nutritional information per 15 mL serving (1 tbsp)

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Energy</td>
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<td>Protein</td>
</tr>
<tr>
<td>Fat</td>
<td>0 g</td>
<td>Carbohydrate</td>
</tr>
<tr>
<td>Sucralose</td>
<td>8 mg</td>
<td></td>
</tr>
</tbody>
</table>

[15 mL serving (1 tbsp) = 1/2]

Canadian Hypertension Society Guidelines, 2003

Churchill, Ian, BSC Pharm. Cholesterol Lowering Medications, Managing Diabetes, Issue 5, April 2002

Gupta, Milan, MD FRCP, FACC, Cardiology Aspects, The Canadian Journal of Diagnosis, February 2003


Pfizer Canada Inc, Reducing, Screening for, Treating and Monitoring Cardiovascular Disease, 2003

Williams, Sandi, RDN, CDE, Nutrition Management of Elevated Lipids in Diabetes, Diabetes Care News, Volume 7, August/September 2001
Maytag Canada’s Long Term Diabetes Initiative

A year ago Maytag embarked on *Good Nutrition Starts in My Kitchen*, a new initiative in the fight against diabetes and directed towards diabetes educators and people with diabetes. A commitment was made to provide regular resources to front-line diabetes professionals and the people in their care. Maytag’s logo “Good Nutrition Starts in My Kitchen” was developed to encourage an awareness of the importance of healthy cooking and the ease of home preparation of nutritious meals. This commitment started with the distribution of linen aprons with the Good Nutrition logo in English and French which were sent to front line diabetes educators across the country in the *Canadian Diabetes Care Professional Pack*.

The Summer 2003 quarterly pack contained *Maytag Meals for Good Health* by Karen Graham, RD, CDE. A selection of information and recipes from the book was condensed into a *Good Nutrition Starts in My Kitchen* booklet. Multiple units were put into the Professional Packs and also made available to diabetes educators for their clients, and at diabetes events during the year. The booklet also appeared as an informational piece in the *Canadian Diabetes Care Guide* for distribution to some 160,000 people with diabetes through their clinics.

The Fall 2003 quarter pack recognized the importance of portion control with a Maytag portion control/food storage plate. This was ideal not only for proportioning meals but had the added advantage of being microwaveable, oven proof and dishwasher-safe. Maytag introduced the plate at the CDA Conference in Ottawa in October where it was enthusiastically received by delegates. (This plate is now available through www.diabeaters.com)

For this quarter Maytag is providing a placemat and poster showing the various food groups and portions for meal planning. Look out for a separate mailing of these resources as they are too big for inclusion in this Professional Pack.

Separately, Maytag participated in a number of diabetes expos and events throughout the year. They were as diverse as “The Taste of the Danforth”, a Toronto street festival where Toronto East General Hospital DEC had a booth and offered free blood pressure and glucose testing, through to a “Healthy Heart Expo” in Peterborough.

Maytag Canada in keeping with their dedication to community programs intends to make the diabetes initiative a long term commitment. A number of new projects are planned for the coming year and beyond including a pilot project, “Maytag in Motion” using pedometers in schools to promote physical activity amongst the students.

Maytag Canada looks forward to continuing to work with you in the fight against diabetes. As always they appreciates your feedback on their current initiatives and welcomes any ideas and suggestions you may have. You may send them to us at www.diabetescareguide.com

Good Nutrition Starts in My Kitchen initiatives: Logo used on apron, information booklet, portion control/food storage plate.
Fighting Diabetes Through Portion Control
Diabetes Educator Certification - A Worthwhile Achievement!

By Denise Gaizauskas RN CDE, CDECB board member

Background
The certification process for Diabetes Educators started as a special project of the Canadian Diabetes Association Diabetes Educator Section. Although today, both the Canadian Diabetes Association and the Canadian Diabetes Educator Certification Board are distinct organizations, they maintain a link to provide ongoing communication and support.

Certification has been defined as a voluntary process where a non-governmental agency or body grants recognition to an individual who has met certain predetermined standards of current proficiency and excellence in a specialty area.¹

The Canadian Diabetes Educator Certification Board’s mandate therefore is to develop, administer and regulate an examination process leading to national Certification for eligible diabetes educators in Canada. The first Certification exam for Diabetes Educators was held in October 1991.

The CDE® designation is an assurance that the individual has current, requisite diabetes education knowledge to work effectively within a multi disciplinary education team.

The Certification Exam consists of individual items, based on major competencies that test current knowledge and application of that knowledge across a number of professional disciplines. The certification process is open to registered health care professionals including nurses, dietitians, pharmacists, physiotherapists, social workers, psychologists, and physicians who work in diabetes education. Certified Diabetes Educators work in settings such as Diabetes Education Centres, hospitals, Community Health Centres, pharmacies and in private practice.

In the first year that the exam was offered, 242 educators successfully attained the CDE® credential. The number of health care professionals writing the exam and achieving CDE status has increased each year. We presently have approximately 1500 CDE’s across Canada.

The original intent of the Certification process was to promote excellence in diabetes education, quality diabetes care and professional growth for diabetes educators. This was done by:

1) Providing recognition for a specialty in diabetes education - CDE® credential
2) Developing standards for required knowledge and the ability to apply that knowledge - Major Competencies
3) Providing a mechanism for professional development - Certification exam.

Diabetes Educator Certification is a continuous quality improvement process. As increasing numbers of diabetes educators become certified, there will be increased numbers of diabetes education specialists who can apply the national standards of care for individuals affected by diabetes.

Certification is beneficial for you….

Diabetes Educator certification provides you with:
- increased recognition of your expertise from your peers, employers and clients,
- a sense of accomplishment and increased self-confidence,
- a mechanism to keep your multi disciplinary diabetes information knowledge base current ,
- a major component of your continuing education plan for your individual professional body.
- A marketing tool for your Diabetes education Program

Certified Diabetes Educators were asked the question “What changes have you noticed since you have become a certified diabetes educator?” The responses indicated that they had received:
- increased recognition from peers and employers (85%), clients (38%),
- increased personal satisfaction (65%),
- increased referral from physicians (40%) and
- job security (20%) and
- financial reward (10%)²

The CDE® credential is becoming more widely known in Canada.

Increasingly recommendations to access the services of a CDE are found in public health promotional literature. The Ontario Ministry of Health and Long Term Care web site states “ Formal certification of Diabetes Educators by the Canadian Diabetes Educator Certification Board is encouraged.”³

Although Certification is not meant as an entry to practice requirement, having your CDE® provides expanded employment opportunities and a measure of job security. A recent glance at the CDA and Diabetes Ontario web sites showed that five out of six job postings indicated CDE® preferred or an asset; and one posting indicated it was required.

In at least one instance, Canadian Hospital Accreditation teams have inquired whether the hospital’s Diabetes Education Centre is staffed by a CDE®.

So join the ranks of recognized and respected health care professionals committed to excellence in diabetes education and become a Certified Diabetes Educator.

For information on eligibility requirements and the Certification exam process, the handbook is available at www.cdecb.ca or by sending a request by fax, mail or e-mail to:

Coordinator CDECB
2878 King Street
Inglewood, Ontario
L0N 1K0

Phone 905) 838-4898
Fax: (905) 838-4899
e-mail cdecb@sympatico.ca

References
The very fact that you wonder if you’re normal, suggests you probably are. And just about everyone asks it when they’re confronted with their first vaginal yeast infection. The answer is always “yes, yeast infections are quite common.” Why me?” The infection is usually caused by an imbalance in the yeast naturally occurring in the vagina. There’s no reason to be distressed or embarrassed. It’s not considered an STD by doctors. And it certainly doesn’t mean you have unhygienic habits. “How do I know that’s what I have?” A yeast infection can bring with it a burning, itchy irritation. It’s accompanied by a discharge that most medical texts unappetizingly describe as looking like cottage cheese. Although a yeast infection is easy to recognize once you’ve had one, if it’s your first yeast infection you should see your doctor. “How do I get rid of it?” MONISTAT®. It’s easy, it works fast and it’s the number one choice of women. Whatever it takes to make you feel like yourself again.

Am I Normal?

MONISTAT 1
MONISTAT 3
MONISTAT 7

*Trademark
Oral health and diabetes
As a diabetes educator, you may want to remind your patients with diabetes about the importance of their oral health in relation to their overall health. Research shows there may be a link between oral disease and diabetes confirming that people with diabetes need to pay special attention to their oral health.

How does oral health relate to diabetes?
Complications caused by diabetes can actually affect the oral health of a person with diabetes.
- Periodontal (gum) disease tends to develop more easily and more severely due to poor blood circulation caused by diabetes.
- Dry mouth caused by diabetes increases the risk of cavities and fungal infections.
- Oral infections caused by periodontal disease raises blood sugar levels and affect insulin requirements.

What are the warning signs of periodontal disease?
Also known as gum disease, periodontal disease often develops slowly and without causing any pain. This disease is the leading cause of tooth loss in adults. Here are some warning signs to share with your patients:
- Constant bad breath or bad taste in your mouth
- Red, swollen or tender gums
- Bleeding gums when you brush or floss
- Gums that have pulled away from the tooth
- Pus at the gums when you press them
- Teeth that are painful or loose

How can people with diabetes prevent periodontal disease?
As part of a healthy lifestyle and to reduce the risk of periodontal disease, here are some oral health care tips prepared by the Canadian Dental Association to share with your patients.
- Brush properly with a soft toothbrush and floss everyday. Clean dentures daily.
- Check your gums regularly for warning signs of periodontal disease and report any of these signs to your dentist.
- To keep your mouth moist, chew sugarless gum and drink plenty of water.
- Don’t smoke. Tobacco not only affects blood circulation, but is also a major cause of tooth loss through periodontal disease and may lead to serious problems like oral cancer.
- Have your teeth and gums examined regularly by your dentist to detect and prevent periodontal disease. Only your dentist has the training, skills and expertise to identify and address your oral health care needs.

To learn more about how diabetes affects your overall health, talk to your dentist. A healthy smile is an important part of a healthy and enjoyable life.

Oral health - Good for Life!
**Now** the only antihypertensive indicated in hypertension with type 2 diabetes mellitus and renal disease to reduce the rate of progression of nephropathy.¹

**A BRAND NEW ANGLE TO AVAPRO**

Avapro is indicated for the treatment of hypertensive patients with type 2 diabetes mellitus and renal disease to reduce the rate of progression of nephropathy as measured by the reduction of microalbuminuria, and the occurrence of doubling of serum creatinine. Avapro is also indicated for the treatment of essential hypertension. Avapro may be used alone or concomitantly with thiazide diuretics. The safety and efficacy of concurrent use with angiotensin converting enzyme inhibitors has not been established.

Avapro should not be used in pregnant women and should, as with other antihypertensive agents, be prescribed with caution in the elderly.

Use of irbesartan should include appropriate assessment of renal function.

1. Avapro Product Monograph
Avapro (Irbesartan)

THERAPEUTIC CLASSIFICATION: Angiotensin II AT1 Receptor Blocker

ACTION & CLINICAL PHARMACOLOGY: AVAPRO is an angiotensin II receptor antagonist. It blocks the binding of angiotensin II to the AT1 receptor, producing a decrease in blood pressure.

Dosage & Administration: AVAPRO is indicated for the treatment of hypertension, either alone or in combination with other antihypertensive agents, and for the treatment of congestive heart failure in patients with reduced ejection fraction. It is also used in the management of diabetic nephropathy.

CONTRAINDICATIONS: AVAPRO is contraindicated in patients with a history of angioedema or angioedema-like reactions with angiotensin-converting enzyme (ACE) inhibitors.

PRECAUTIONS: AVAPRO should be used with caution in patients with renal impairment, hepatic impairment, or a history of angioedema with ACE inhibitors.

ADVERSE REACTIONS: AVAPRO may cause dizziness, syncope, fatigue, and coldness of extremities.

Table 1: Primary Composite Endpoint Comparison (JMT)

<table>
<thead>
<tr>
<th>Event</th>
<th>Placebo</th>
<th>Irbesartan 150 mg</th>
<th>Estimate (β)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td>222 (69)</td>
<td>189 (52)</td>
<td>-0.05 (0.25)</td>
<td>0.66 (0.01)</td>
</tr>
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</table>

Table 2: Time to Euvolemia of Overt Proteinuria

<table>
<thead>
<tr>
<th>Number (n)</th>
<th>P Value</th>
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</thead>
<tbody>
<tr>
<td>Primary End</td>
<td>0.009</td>
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</tbody>
</table>

Table 3: Time to Normalization of Urinary Albumin Excretion Rate (Run In and Post Baseline)

<table>
<thead>
<tr>
<th>Number (n)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary End</td>
<td>0.009</td>
</tr>
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</table>

Indications & Clinical Use: AVAPRO is indicated for the treatment of essential hypertension, diabetic nephropathy, and congestive heart failure.

AVAPRO (Irbesartan) is contraindicated in patients with a history of angioedema or angioedema-like reactions with angiotensin-converting enzyme (ACE) inhibitors.

AVAPRO should be used with caution in patients with renal impairment, hepatic impairment, or a history of angioedema with ACE inhibitors.

AVAPRO may cause dizziness, syncope, fatigue, and coldness of extremities.

Safety data from this trial has been reported in the ADVERSE REACTIONS section.
irreversible in most renal failure and death. Oliguria or anuria has also been reported, presumably resulting from decreased renal function. Oligouria or anuria in this setting has been associated with a high incidence of continuous renal replacement therapy. Intraoperative transoesophageal echocardiography and transoesophageal echocardiography may be helpful in patients who are not candidates for surgery. Physicians should discuss the importance of cardiac function and renal function with patients who are not candidates for surgery. The role of cardiac function and renal function in the management of patients with renal failure has not been evaluated in clinical studies. There is a need for additional studies to assess the role of cardiac function and renal function in the management of patients with renal failure. In patients with renal failure, the administration of drugs may be required for the treatment of complications. Glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors may be effective in the treatment of renal failure. Precautions and warnings should be considered in patients with renal failure. The use of glucocorticoids in patients with renal failure should be considered in patients with severe renal failure. The use of beta-blockers in patients with renal failure should be considered in patients with severe renal failure. The use of angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure. The use of glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure. The use of glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure. The use of glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure. The use of glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure. The use of glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure. The use of glucocorticoids, beta-blockers, and angiotensin-converting enzyme inhibitors in patients with renal failure should be considered in patients with severe renal failure.
Introducing... New Equal Spoonful... from our kitchen to you

Equal Spoonful 100g Jar
- 0 calorie sweetener
- Tastes like sugar
- Measures like sugar
- Innovative hourglass packaging makes dispensing easy

Advantages of Using Equal in Recipes
- Equal helps people with diabetes enjoy broader flexibility in their diets
- Delicious recipes have been developed that are lower in calories, carbohydrates and fat than traditional versions

Cooking and Baking Tips
- Equal can be used instead of sugar in a wide variety of recipes where sugar functions primarily as a sweetener
- Keep in mind that cakes, cookies and pastries strongly depend on sugar for bulk, tenderness and browning – properties that no sugar substitute can provide
- The Equal recipes developed by the Equal Test Kitchen span a variety of cooking/baking times and temperatures. For example, the Equal Apple Pie is baked at 425° F for 40 minutes.
- For best results, use recipes designed for Equal or add Equal to recipes after removing from heat to maintain sweetness
- Equal has an indefinite shelf life if stored away from heat and humidity

For additional information on Equal or to access our recipes visit www.equal.com/canada

Chocolate Chip Cookies
28% calorie reduction from traditional recipe
Makes about 2 dozen cookies

1/3 cup stick butter or margarine, softened
1 egg
1 teaspoon vanilla
1/3 cup Equal Spoonful
1/3 cup firmly packed light brown sugar
1/4 cup all-purpose flour
1/2 teaspoon baking soda
1/4 teaspoon salt
1/2 cup semi-sweet chocolate chips or mini-chocolate chips

- Beat butter with electric mixer until fluffy. Beat in egg and vanilla until blended. Mix in Equal and brown sugar until combined
- Combine flour, baking soda and salt. Mix into butter mixture until well blended. Stir in chocolate chips.
- Drop dough by rounded teaspoons onto ungreased baking sheet. Bake in preheated 350° F oven 8 to 10 minutes or until light golden colour. Transfer to wire rack and let cool.

Nutrition Information per serving
71 cal., 1g protein, 9g carb., 4g fat, 16 mg chol., 78 mg sodium

Canadian Diabetes Association Food Choice Value:
1 cookie per serving = 1 1/2 + 1/2
+ 1
Diabetes and Nutrition: The role of carbohydrates and the glycemic index

By Serena Beber, RD, CDE

There are more than two million Canadians diagnosed with diabetes and, according to the Canadian Diabetes Association (CDA), there are many more who don’t know they have the disease.

Diabetes is a condition that requires people to provide their own care and self management, often in a home or community setting. To do this they require support.

In fact, the CDA identified accurate and detailed support and education from a trained and knowledgeable health professional as one of the key critical components of successful diabetes management.

Nutrition therapy is a vital aspect of diabetes management, and one that the family physician should be familiar with in order to provide the proper care for his or her diabetic patients.

Appropriate dietary choices can help lower and stabilize blood sugars, helping to minimize the highs and lows associated with many of the side effects and complications of diabetes. Canada’s Guidelines for Healthy Eating provides a helpful roadmap towards effective nutritional management of diabetes:

- Enjoy a variety of foods.
- Emphasize cereals, breads and other whole grain products, vegetables and fruit.

* Choose lower-fat dairy products, leaner meats and foods prepared with little or no fat.
* Achieve and maintain a healthy body weight by enjoying regular physical activity and healthy eating.
* Limit salt, alcohol and caffeine.

Dietary components affecting blood sugars

Dietary carbohydrates are a major part of our diet and should provide 50-60% of energy requirements. Carbohydrates are chains of sugar molecules. Carbohydrates include simple sugars, starches and dietary fibre. Simple sugars are monosaccharides or disaccharides (chains of one or two sugar molecules). Monosaccharides found in our food include glucose, fructose and galactose. Starches are often referred to as complex carbohydrates. Starches are long chains of sugar molecules. When digested, they are broken down into monosaccharides.

Monosaccharides are absorbed, enter the blood stream and are transported to the liver to become glucose. Glucose is either used as energy or may be stored for later use. Both the amount and the source of carbohydrates affect blood glucose levels. There are several considerations when determining how a particular food will affect the blood sugars. How quickly carbohydrate is digested and affects your blood glucose is different for every food. This is where the glycemic index comes into play.

The glycemic index

The glycemic index (GI) is a method of measuring the relative amount that a carbohydrate-containing food causes the blood sugar to increase. Some carbohydrates are broken down quickly and cause quick rises in blood glucose. These foods are considered to have a high glycemic index. Foods with a low GI cause the blood sugar to rise more slowly.

When a high GI food is eaten, the pancreas releases a surge of insulin, resulting in a decrease in blood glucose. The insulin spike can sometimes cause the blood glucose to drop too much. Foods with a lower glycemic index cause the blood sugar to rise slowly, resulting in a more appropriate release of insulin from the pancreas. This result is a more desirable steady raising and lowering of blood glucose levels.

GI food lists may use either white bread or glucose as the standard for comparison. Foods are compared against the standard based on the relative rise in blood sugar that a food with the same amount of carbohydrate (50 grams) would cause. For example, when white bread is given a glycemic index of 100, table sugar (sucrose) has a glycemic index of 83. This means that for the same amount of carbohydrates eaten as sugar, white bread will raise the blood sugar more quickly. Most health care professionals used to think that because bread is a complex carbohydrate, the body must break it down more slowly than simple carbohydrates like table sugar, but research has shown us otherwise.

Factors which affect the rate at which a particular food causes the blood glucose to rise include the amount of carbohydrate, the type of carbohydrate, the way the food is prepared and other foods that are eaten at the same time. Carbohydrates have different forms, sizes and chemical properties that affect blood glucose response.

Fibre

The fibre content of foods affects GI. Foods with higher insoluble fibre content have lower GI, decreasing the blood glucose response. Foods that are high in soluble fibre also have lower GI. Soluble fibre slows down the interaction between starch and enzymes during digestion. This improves blood sugar control in addition to lowering serum cholesterol. All individuals, especially those with diabetes, can benefit from increasing their total dietary fibre intake.

Protein and fat

Including protein and fat in a meal slows down digestion and absorption of carbohydrates, while, in turn, lowers the GI. People with diabetes have the same protein requirements as those without. Having a balanced meal which includes protein may stimulate insulin secretion and decrease
serum glucose response. Because high fat intake is associated with poor blood glucose control, people with diabetes should follow Health Canada’s recommendations of dietary intake < 30% of Calories. In addition, <10% of fat intake should be from saturated fat and < 10% from polyunsaturated fat. Monounsaturated fats and omega-3 fatty acids may help improve glycemic control and decrease triglycerides. However, monounsaturated fat intake should not be consumed in quantities which promote weight gain.

Food preparation
The way that a food is cooked or processed affects its GI. When foods are cooked, the carbohydrate structure changes. It swells or becomes gelatinized, increasing GI compared with the raw form of the food. Sugar helps decrease gelatinization of starch and can help lower GI. This helps explain why some foods that have a more refined sugar content have a surprisingly lower GI. For example, sweet potatoes have a lower GI than white potatoes and corn flakes cereal has a higher GI than sugar-coated corn flakes.

Acid slows digestion and absorption of foods, lowering GI. Including foods with vinegar or lemon juice in them may improve the glycemic response.

Application of glycemic index
Traditionally, nutrition education in diabetes has centred on the amount and type carbohydrates consumed, limiting simple sugars and emphasizing complex carbohydrates. Research is emerging demonstrating that the glycemic index of foods is a more accurate way to control blood glucose levels. However, the use of GI in diabetic education is not universally endorsed. The Canadian Diabetes Association, the Food and Agriculture Organization and the World Health Organization recommend the consumption of lower GI foods for people with diabetes to improve glycemic control. Presently, the American Diabetic Association does not endorse the use of GI for treatment of diabetes because of the limited number of foods studied, the complicated nature required to educate patients and the varied results from different studies. The ADA's emphasis is the total amount of carbohydrates in meals and snacks.

Although some refined sugars have a lower glycemic response than some whole grains, they may also have less vitamins, minerals and fibre which are all important for good health. The GI can help make decisions but should not be used in isolation. Having a well-balanced diet that meets all nutrition needs is important.

Table 1
Using the glycemic index to help optimize blood glucose control

* Choose foods with a lower glycemic index whenever possible.
* Choose oat bran or pumpernickel bread more often than white bread
* Choose fresh fruits instead of juice.
* Choose brown rice instead of instant rice.
* Choose pasta, rice or sweet potatoes instead of instant potatoes.

Table 2.
GI values of some common foods* (Reference Standard is glucose, GI=100)

<table>
<thead>
<tr>
<th>Category</th>
<th>Low GI (&lt; 55)</th>
<th>Intermediate GI (55-70)</th>
<th>High GI (&gt; 70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk Products</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>skim milk 32</td>
<td>whole milk 42</td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>apple 39</td>
<td>apple juice 41</td>
<td></td>
</tr>
<tr>
<td></td>
<td>banana 46</td>
<td>grapes 43</td>
<td></td>
</tr>
<tr>
<td></td>
<td>orange 40</td>
<td>orange juice 53</td>
<td>cranberry juice 68</td>
</tr>
<tr>
<td></td>
<td>pear 33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables</td>
<td></td>
<td>potato 60</td>
<td>instant potatoes 88</td>
</tr>
<tr>
<td></td>
<td>peas 39</td>
<td>sweet potato 48</td>
<td></td>
</tr>
<tr>
<td>Grains, Pasta</td>
<td></td>
<td>brown rice 55</td>
<td>bagle, white 72 instant rice 87</td>
</tr>
<tr>
<td></td>
<td>barley 22</td>
<td>beans 40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>chick peas 31</td>
<td>kidney beans 29</td>
<td></td>
</tr>
<tr>
<td></td>
<td>spaghetti 40</td>
<td>white rice 51</td>
<td></td>
</tr>
<tr>
<td></td>
<td>whole wheat</td>
<td>spaghetti 37</td>
<td></td>
</tr>
<tr>
<td>Breads, Crackers, Cookies</td>
<td></td>
<td>arrowroot cookies 63</td>
<td></td>
</tr>
<tr>
<td></td>
<td>oat bran bread 44</td>
<td>bran muffin 60</td>
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<td></td>
<td>rye bread 41</td>
<td>Bretons 67</td>
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<tr>
<td></td>
<td></td>
<td>croissant 67</td>
<td>digestive cookies 55</td>
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<tr>
<td></td>
<td></td>
<td>white bread 71</td>
<td>Ryvita 69</td>
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<tr>
<td>Cereals</td>
<td>All-Bran 50</td>
<td>Cream of Wheat 66</td>
<td>Corn Flakes 80</td>
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<tr>
<td></td>
<td></td>
<td>quick oats 65</td>
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<tr>
<td>Sweeteners</td>
<td>fructose 12</td>
<td>sucrose 60</td>
<td>glucose 100</td>
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<td></td>
<td></td>
<td></td>
<td>honey 87</td>
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<td>Beverages</td>
<td></td>
<td></td>
<td>Coca Cola 63</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Gatorade 78</td>
</tr>
</tbody>
</table>

* Whenever possible, a Canadian product was given as an example.
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* When eating high glycemic index foods, combine with foods that have a lower GI or with protein and fat to achieve an overall lower GI.

* Add beans to soups, salads and chilies.

* Avoid high GI foods alone.

Some population groups have difficulty with meeting their nutrient requirements. For these individuals, it is often helpful to take nutritional supplements either as a meal replacement or to complement their current intake. For people with Diabetes, a nutritional supplement such as Glucerna, can be used as a snack or a meal replacement. It is geared towards individuals with Diabetes. Glucerna has a lower carbohydrate content relative to standard supplements. The fibre content is beneficial for blood glucose control and high cholesterol levels often found in individuals with diabetes. In addition, the fibre can help improve poor bowel function that is common in those requiring supplements and in people with diabetes who have complications such as gastroparesis. Glucerna has a higher fat content than the standard formula which may slow gastric emptying and minimize postprandial glucose increases in patients with abnormal glucose tolerance. The effect of Glucerna versus a standard nutritional supplement was compared for the effect on blood sugar control and lipoprotein profile in patients with type 2 diabetes. Notwithstanding the high monounsaturated fat content of Glucerna, the lipoprotein profiles were not significantly different from those consuming the standard lower fat formula. As always, following a healthy meal plan developed with a dietitian is the best way to control blood sugars and promote optimal nutrition. The addition of supplements should be discussed with the dietitian.

**References**


Clips on Sugars, 2002. Canadian Sugar Institute


A recent study* shows that the special combination of ingredients in Glucerna — including slow-release carbohydrates — results in lower blood glucose response compared to ordinary bars.


**Glucerna Bars**

**Lemon Crunch Bars:**
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2. ADD 5 whole cloves, 1 cinnamon stick, 4 cups boiling water and 2 cups apple juice. Stir to dissolve. Let stand 10 min. Remove spices. Serve warm.

Makes 8 (1 cup) servings.

Per Serving
Calories 34  Protein 0.2 g
Fat 0.1 g  Carbohydrate 7.9 g

Canadian Diabetes Association Food Choice Value
1 serving = 1

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