The Glycemic Index: Benefits & Use in Diabetes Management

By Donna Kwan, RD

According to the World Health Organization (WHO), an estimated 177 million people had diabetes in the year 2000 and by 2025, this figure will rise to over 300 million. The costs of diabetes include reduced quality of life and the increased risk of developing microvascular and macrovascular complications such as retinopathy and cardiovascular disease (CVD). Diabetes contributes to approximately 41,500 Canadian deaths each year.

Nutrition therapy plays a vital role in the treatment and management of both types of diabetes. The basic Canadian guidelines for the management of diabetes includes controlling portions (particularly carbohydrates), decreasing obesity, increasing fibre, reducing saturated and trans fat to <10% of energy, and choosing low glycemic index foods more often.

Glycemic index (GI) is a carbohydrate-containing food classification system first proposed in 1981. The glycemic index is a ranking of the postprandial glycemic response of different types or sources of carbohydrate compared to a reference carbohydrate (glucose or white bread given a value of 100) over a period of 2-3 hours. Dietary carbohydrates are generally found in starches, fruits and vegetables, milk products and sugars and should provide 50-60% of our energy requirements. The GI is often classified into 3 categories: low (<55), medium (55-70), and high (>70) GI foods.

The glycemic index has been recognized by WHO and diabetes associations in Canada, Europe, Australia, and South Africa as a useful tool in the management of diabetes. Only recently has the American Diabetes Association acknowledged that the use of the glycemic index can provide additional benefits to that observed when total carbohydrate is considered alone as stated in the ADA 2004 position statement on dietary carbohydrates. However, many questions still surround the practical use and clinical significance of the glycemic index.

Benefits to diabetes management
A large number of studies have been conducted to illustrate the benefits of the glycemic index on the treatment and prevention of chronic diseases. In a meta-analysis of randomized controlled trials of low-GI diets in the management of type 1 and type 2 diabetes, the results show that choosing a low-GI diet has a clinically significant effect on glycemic control. After following a low GI diet for an average of
10 weeks, HbA1c levels lowered 0.43% points compared to those following a high GI diet.

A low GI diet has also found to be associated with reduced serum cholesterol and high GI diet has been found to increase the risk of CVD. These findings are possibly related to the chronic hyperinsulinemia and postprandial hyperglycemia that can result from a diet consisting of high GI foods. However, long-term studies are required to confirm the effects of the GI on CVD risk.

Low glycemic index foods that contain soluble fibre may also be helpful in limiting the number of hypoglycaemic events. This may prove useful in the management of diabetes in individuals prone to hypoglycaemia.

Using the glycemic index in practice does not suggest that other dietary guidelines or the amount of carbohydrate are to be ignored. Both source and amount of carbohydrate are important in managing blood glucose levels. Glycemic index adds additional benefit to or supplements other dietary recommendations to improve the management of diabetes.

**Factors affecting the glycemic index value**

The GI of a particular food can be influenced by several different factors. The multitude of factors often is criticized as a barrier to using the GI in practice. See Table 1 for a list of factors that affect the GI of a particular food and examples of food choices.

The physical nature or state of the food appears to have the greatest impact on the GI rating.

**Practical tips for using the GI**

The use of the glycemic index in practice has been questioned as some consider the glycemic index too complicated for clients. Several studies have shown that the glycemic index can be utilized successfully in diabetes practice and have shown improvements in glycemic control.

Some simple tips to help clients incorporate low glycemic index foods include:

- Replacing half of high GI foods with low GI foods
- Consume one low GI food at each meal
- Replacing all high GI breads and cereals with low GI breads and cereals
- Increased intake of legumes as legumes have been found to lower the GI of the diet
- Continue to recommend a variety of vegetables, especially the vegetables consisting of a low amount of carbohydrate per serving
- Continue to recommend milk products and most fruits as part of a healthy diet as these are often classified as low and medium glycemic index foods
- Choose less processed foods e.g. choose steel cut oatmeal flakes vs. instant oatmeal or whole grain bread vs. whole wheat bread
- Use vinaigrette salad dressings at a meal
- Present all high carbohydrate and low fat foods as healthy but emphasize some are “good choices” and others are “better choices”

See Table 2 for a list of common low, medium, and high glycemic index foods.

**Promising benefits for weight management**

Maintaining a healthy weight is a goal in the prevention and management of diabetes. Approximately 80-90% of people with diabetes are overweight or obese. Low GI diets may play a role in weight management as body mass index and the glycemic index were found to be positively associated in an epidemiological study involving 572 adults over a one year period.

Consuming a low GI diet has been shown to result in weight loss in several studies. Furthermore, it has been suggested by several studies that fat oxidation is promoted when a low GI diet is consumed; adding to the benefits for weight management using

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**Table 1: Factors influencing the glycemic index of a food**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mechanism</th>
<th>Examples of Reduced GI Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of starch gelatinization</td>
<td>Less gelatinized (swollen) the starch, the slower the rate of digestion and therefore lower GI</td>
<td>Spaghetti (al dente)</td>
</tr>
<tr>
<td>Physical form</td>
<td>Fibrous coat around beans and seeds and intact plant walls act as a barrier to slow access of enzymes that digest starch</td>
<td>Whole grains, legumes, barley</td>
</tr>
<tr>
<td>Particle size</td>
<td>Smaller the particle, the easier it is for enzymes to penetrate</td>
<td>Stone-ground flours have larger particles</td>
</tr>
<tr>
<td>Viscosity/Fibre</td>
<td>Soluble fibres increase the viscosity of the intestinal contents, slowing down enzyme interaction with starch. Finely milled whole grains have faster rates of digestion as the fibre is no longer viscous</td>
<td>Rolled oats, beans, apples</td>
</tr>
<tr>
<td>Acidity</td>
<td>Acids in foods slow gastric emptying thereby reducing the rate of digestions</td>
<td>Sourdough bread, vinegar</td>
</tr>
<tr>
<td>Fat</td>
<td>Fat content slows gastric emptying thereby reducing GI</td>
<td>Potato chips have lower GI than boiled white potatoes</td>
</tr>
<tr>
<td>Sugar (sucrose)</td>
<td>Sucrose restricts gelatinization of the starch by binding it to water and digestion of sugar only produces half as much glucose as same amount of starch</td>
<td>Social Tea™ biscuits, some cereals such as Kellogg’s Frosted Flakes™ are high in sugar but have lower GI values</td>
</tr>
</tbody>
</table>
the glycemic index.\textsuperscript{14} Hence, fat storage may be reduced.

Weight loss associated with a low GI diet may also result in physiological changes that aid long-term weight loss. A low GI diet has been shown to affect satiety and resting energy expenditure (REE). In one randomized parallel-design study of 39 overweight or obese adults either receiving a low-glycemic load (calculated by multiplying grams of carbohydrate in a typical serving size by the GI of that food) or low-fat energy restricted diet (1500kcal), the group on the low glycemic load diet reported less hunger and less of a decreasing in REE than those receiving the low fat diet.\textsuperscript{15} As well, insulin resistance, serum triglycerides, and C-reactive protein were significantly improved in the group on the low-glycemic load diet.\textsuperscript{15} Therefore, weight loss from intake of a low GI diet has shown to improve insulin sensitivity.

Summary

- Glycemic index is a useful tool in managing glycemic control
- Cardiovascular disease risk may be reduced by consuming a low glycemic index diet
- Studies have shown clients can successfully incorporate the glycemic index in their dietary routine with positive outcomes
- Weight loss may be another benefit found with choosing low glycemic index foods
- More research into the long-term use of the glycemic index is required as many of these studies, particularly for CVD and weight management, were short or medium term studies.

ABOUT THE AUTHOR

Donna Kwan currently works as a clinical dietitian within the Diabetes Comprehensive Care Program at St. Michael’s Hospital. Donna’s past work experience has included diabetes, lipid and weight management counseling at a private endocrinology clinic where she was also involved in clinical research as a coordinator for almost two years.

REFERENCES

Table 2: List of glycemic index values for common foods
(Standard reference food is glucose, GI = 100)

<table>
<thead>
<tr>
<th>Food Groups</th>
<th>Low GI (&lt;55)</th>
<th>Medium GI (55-70)</th>
<th>High GI (&gt;70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starches</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All-Bran® cereal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baked beans, canned (48 avg)</td>
<td>Basmati rice, white, boiled (58)</td>
<td>Corn Flakes™ (92)</td>
<td></td>
</tr>
<tr>
<td>Barley, pearled, boiled (25 avg)</td>
<td>Corn, sweet, boiled-USA (60)</td>
<td>English muffin (77)</td>
<td></td>
</tr>
<tr>
<td>Black beans, boiled (30)</td>
<td>Couscous, boiled 5 min (65 avg)</td>
<td>Instant potato, prepared (85 avg)</td>
<td></td>
</tr>
<tr>
<td>Chickpeas, dried, boiled (28 avg)</td>
<td>Frosted Flakes™ (55)</td>
<td>Instant rice, white (87)</td>
<td></td>
</tr>
<tr>
<td>Fettuccine, egg, cooked (32)</td>
<td>Raisin Bran™ (81)</td>
<td>Jasmine rice, white, cooked (109)</td>
<td></td>
</tr>
<tr>
<td>Green peas (48 avg)</td>
<td>Rice, long grain-USA (61)</td>
<td>Kavil™ Norwegian crisp bread (71)</td>
<td></td>
</tr>
<tr>
<td>Kidney beans, boiled (23 avg)</td>
<td>Rice vermicelli (56)</td>
<td>New potato, boiled 20 mins (78)</td>
<td></td>
</tr>
<tr>
<td>Lentils (29 avg)</td>
<td>Rye bread (58 avg)</td>
<td>Popcorn, plain, microwaved (72)</td>
<td></td>
</tr>
<tr>
<td>Multi-grain 9-grain bread (43)</td>
<td>Ryvita® crackers (69)</td>
<td>Potato, baked (85 avg)</td>
<td></td>
</tr>
<tr>
<td>Mung bean noodles/threads (38)</td>
<td>Stoned Wheat Thins (67)</td>
<td>Premium soda crackers (74)</td>
<td></td>
</tr>
<tr>
<td>Oatmeal (42)</td>
<td>Tortilla chips, plain, salted (63)</td>
<td>Puffed rice cakes, white (62)</td>
<td></td>
</tr>
<tr>
<td>Pumpernickel rye kernel bread (41)</td>
<td>Wonder™ white bread (60)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rice, brown, steamed-USA (50)</td>
<td></td>
<td></td>
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<tr>
<td>Rice, Converted, white, boiled, Uncle Ben’s®-USA (38)</td>
<td></td>
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<tr>
<td>Sourdough rye (48)</td>
<td></td>
<td></td>
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<tr>
<td>Soybeans, dried, boiled (20)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spaghetti, boiled 5 mins (38 avg)</td>
<td></td>
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<td></td>
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<tr>
<td>Sponge cake, plain (46)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Fruits</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Apple (38 avg)</td>
<td>Apricots, fresh, 3 medium (57)</td>
<td>Lychees, in syrup, drained (79)</td>
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</tr>
<tr>
<td>Apple juice, unsweetened (40)</td>
<td>Cantaloupe, raw (65)</td>
<td>Watermelon, raw (72)</td>
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</tr>
<tr>
<td>Apricots, dried (30)</td>
<td>Figs, dried (61)</td>
<td></td>
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</tr>
<tr>
<td>Banana, raw (52 avg)</td>
<td>Kiwi fruit (56)</td>
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<tr>
<td>Cherries, raw (23)</td>
<td>Papaya (56)</td>
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</tr>
<tr>
<td>Cranberry juice cocktail (52)</td>
<td>Pineapple, raw (86)</td>
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<tr>
<td>Grapefruit, raw (25)</td>
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<tr>
<td>Grapes, green (46 avg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mango (51)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange (42 avg)</td>
<td></td>
<td></td>
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<tr>
<td>Peach, fresh (42 avg)</td>
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</tr>
<tr>
<td>Pear, raw (38 avg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plums, raw (39)</td>
<td></td>
<td></td>
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<tr>
<td>Milk Products</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Milk, skim/full fat cow’s milk (31)</td>
<td>Ice cream, regular fat (61)</td>
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</tr>
<tr>
<td>Yogurt, low fat, fruit, with sweetener (14)</td>
<td>Milk, condensed, sweetened (91)</td>
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<tr>
<td>Vegetables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweet potato (44)</td>
<td>Beets, canned (64)</td>
<td>Parsnips (75)</td>
<td></td>
</tr>
<tr>
<td>Yam, peeled, boiled (37 avg)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots, peeled, boiled (49)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweets and desserts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chocolate pudding made from powder and whole milk (47)</td>
<td>Mars Bar® (68)</td>
<td>Doughnut, cake type (76)</td>
<td></td>
</tr>
<tr>
<td>Custard, homemade from milk, wheat starch, sugar (43)</td>
<td>Milk arrowroot™ cookies (69)</td>
<td>Soones (62)</td>
<td></td>
</tr>
<tr>
<td>M &amp; M’s®, peanut (33)</td>
<td>Snickers Bar® (68)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mousse, chocolate, 2% fat (31)</td>
<td>Nutella®, chocolate hazelnut spread (33)</td>
<td></td>
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</tr>
</tbody>
</table>

Introducing Maytag’s new Top Load Washer and Matching Dryer Laundry System

A smart twosome to make laundry days lighter and faster.

The top load washer features the DependableClean™ Wash System with the special FlexCare™ agitator and four-part wash system to wash away dirt and remove residue. Its new SuperSize Capacity (now 3.3 cu.ft.) handles family-size loads so you can get your laundry done in less time. The IntelliDial™ Controls (on select models) shows you which wash cycle is selected or in use. Its twenty-one custom wash cycles designed for all types of loads and fabrics and Infinite Water Levels, that allow you to use only the water that you need by precisely matching water level to load size, makes it a washday winner. Some models have the Energy-Star® Qualified rating.

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Several studies have shown that insulin pump therapy leads to better control than multiple daily injections. A recent study at the Yale University School of Medicine now shows that insulin pump therapy is also more effective than multiple daily injections with Lantus. 

The randomized prospective 16-week study published in the July 2004 peer-reviewed issue of Diabetes Care compared Medtronic insulin pumps with multiple daily injections with Lantus in 32 children with Type 1 diabetes.

Pre-meal and bedtime blood glucose levels were 14–30 mmol/L (25–55 mg/dl) lower in the insulin pump therapy group than in the Lantus group. A significant reduction in AIC levels was also found in the insulin pump group with no significant change in the Lantus group. Fifty percent of the insulin pump group met the Canadian Diabetes Association (CDA) AIC guideline of 7% or less, compared to only 13% of the Lantus group.

After the study, 75% of the Lantus group switched to insulin pump therapy while 88% percent of the insulin pump group continued on insulin pump therapy. For more information on the Yale study and the world-leading Medtronic MiniMed Paradigm Platform of insulin pumps, visit www.minimed.ca.

"Insulin pump therapy allows for more immediate and precise fine tuning of insulin dosages that is not possible with injection therapy. We believe this is one of the main reasons why it has been so successful in pediatric patients."

— Elizabeth (Boland) Doyle, MSN, APRN, CDE, Yale School of Medicine


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At 16 weeks, AIC levels in the insulin pump therapy (IPT) group were significantly lower vs. Lantus (P < 0.05).

Insulin pump therapy patients had lower glucose levels at lunch, dinner and bedtime (P < 0.001).
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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.

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Oral health – good for life

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1 based on three independent clinical studies
2 see coupon insert included in the Canadian Diabetes Care Professional Pack for more information on gum disease.
†Gingivitis is a minor inflammation and bleeding of the gums
†† Colgate-Palmolive independent research study on tile
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- Now sweetened with Sucralose!
- **No sugar** added.
- **Low in fat** (0.5g/30g serving).

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- **44%** of your recommended daily fibre.
- Sweetened with Sucralose, sugar and honey.
- **Low in fat** (1g/55g serving).

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ASK YOUR PHARMACIST
**Fish is a Great Choice**

Fish is a perfect fit for people with diabetes, and as a diabetes educator, it’s good to know that High Liner frozen fish products are trans fat free, have low saturated fats and contain no added hydrogenated oils.

Fish is particularly good for people with diabetes because they have a higher risk of problems such as heart disease and stroke, which fish may help prevent. In fact, The Canadian Heart and Stroke Foundation recommends eating fish 2-3 times a week.

Also, a diet plan that includes lower fat foods like fish, can help people with diabetes lose weight and help them control the condition.

**Wise Fat Choices**

One of the best things people with diabetes can do for their health is to eat less fat, particularly saturated fat (animal fat) and trans fat. However monounsaturated and polyunsaturated fats are beneficial to health.

One of the beneficial polyunsaturated fats, Omega 3s are found in all fish. Omega 3 fats are higher in fat-tier fish such as salmon, mackerel and herring and lower in lean fish such as cod, haddock and sole.

The Canadian Diabetes Association mentions: “Omega 3 fatty acids are thought to have some beneficial effects on blood fats known as serum triglycerides. Fish such as salmon and mackerel are rich in omega 3 fatty acids and should be eaten at least once a week.”

High Liner frozen fish products are easy to prepare and taste great. High Liner makes it a real pleasure to eat in a healthy way.

For more information on High Liner products, visit www.highliner.com
WISE FAT CHOICES
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A diet plan that includes lower fat foods like fish, can help people with diabetes lose weight and help them control the condition. High Liner frozen fish products are easy to prepare and taste great.
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*SomaTherapy-ED* Vacuum Therapy System

Over 90% effective. Drug free therapy. No side-effects.
I was both excited and nervous to switch to Lantus insulin last March. I had just passed 37 years of Type 1 diabetes and knew that I would soon be seeing more patients interested in switching over as Lantus became available in Canada. I work as a Clinical dietitian at a diabetes education program in Toronto. I had reasonable control myself (normal HbA1c) with a regimen of ultralente twice per day and humalog with meals. One of the central truths of Type 1 diabetes is the reluctance to make changes if things are reasonably well-controlled. Of course, I have since learned that the absorption of ultralente can vary as much as 50% from 1 injection to the next and in fact it was always a bit of a guessing game to figure out my evening dose of ultralente. I have always used “correction” doses as a way to keep my sugars as close to normal as possible. It took a lot of time and energy to maintain tight control and I always felt that it shouldn’t be that difficult especially with my knowledge of food. My control was compromised by post exercise lows and rebound hyperglycaemia. My specialist who had experience with Lantus had described it as the “poor man’s pump” and felt it would help smooth out my control. So I was ready and willing to go ahead.

I began the switch over by pulling up the Lantus.com website. Of course the testimonials by fellow patients were glowing but really did not provide information on guidelines for switch-
2. Bolus dose as follows – 2-3 units at breakfast, 3-4 units at lunch, 5-6 units at supper (total=10-13 or 40% of the total).

These dosages work out to a total of about .5 units/kg body weight which is appropriate in Type 1 diabetes. I always allow some waiting time between the meal insulin and the meal depending on my glucose level. For example if my glucose is 10, I will wait 1/2 hour. I use 1 unit humalog per 15 g carbohydrate at all meals.

I see many benefits to Lantus insulin now that I have been on it for 8 months. These include:

1. Less hypoglycaemia especially overnight – this has happened once in 8 months compared to 2-3 times per month in the past.

2. Less rebound with hypoglycaemia. In the past I would struggle with higher sugars for about 3 days after a low. With Lantus I might go up to 11 after a low but the effect is very short lived and sometimes doesn’t happen at all.

3. No need for snacks – Snacks are entirely optional and will require monitoring and taking the appropriate humalog/novorapid dose – I use 1 unit per 15 grams carbohydrate and 1 unit per 3 mmol glucose level as a correction dose when above my target. So if my glucose is 9 and I plan to eat 1 small banana I will take 2 units and wait about 25 minutes before the snack. It is also important not to take supplemental insulin too close to the last dose. After 2 hours about 70% of the insulin has been used up. As far as a bedtime snack, I only eat a snack if my glucose is less than about 5.5. Generally I can go to bed with glucose of 6 and wake up with glucose of 6. If my sugar is 9 at bedtime I will take 1 unit of humalog. Also there has been no change in my body weight since starting Lantus.

4. Exercise – more predictable effect with exercise. Generally I always test before exercise to determine if I need a snack. If my sugar is 6, I will eat about 20 g carbohydrates to keep my sugar stable through a workout at the gym (30 minutes cardio and 10 minutes weights). If my sugar is 9, I may eat 5-10 g carbohydrate towards the end of the exercise. These strategies work out for the most part. If I exercise immediately after a meal I will reduce the meal insulin by about 75 to 100%. So if my sugar is 8, I will only take 1 unit of humalog before lunch rather than 4 units.

5. Better quality of life – It is much easier to achieve good control with Lantus than with the older insulins and thus your life is less of a struggle. You still have to do the work but the results are superior. Taking multiple injections and testing numerous times has never been an issue for me. Lantus helps one to achieve near normal control most of the time. It can also be injected in multiple sites (abdomen, thigh, and arm) and this does not affect glucose control. Of note is the fact that it cannot be mixed with another insulin and is not yet available in a pen. These are not disadvantages for me. It is a more expensive insulin (about $65. per bottle versus $30. for a vial of NPH in Ontario) and is not on the Ontario Drug benefit program.

6. Optimal control – My HbA1c has remained the same but is more reflective of better control as lows are much less frequent and I need fewer correction doses.

The most difficult part of the transition is determining the optimal basal dose and may require a few weeks of intensive monitoring. Some of my patients have achieved near normal glycaemia within 24-48 hours on 1 shot per day. Some have only achieved this control on a split dose. A thorough knowledge of carbohydrate is essential and the new CDA Beyond the Basics and the mandatory package labelling have been a great help in providing correct carbohydrate information.

ABOUT THE AUTHOR

Sheila Walker works as a Clinical dietitian at the Sunnybrook and Women’s College Health Science Centre in Toronto. She is now helping about 3-4 clients per month in their switch to Lantus insulin. She can be reached by email at sheila.walker@sw.ca
Who says life can't be sweet on a sugar-restricted diet? Storck Canada Inc. - the makers of Werther's® Original®, Canada's favourite hard candy* - are pleased to introduce new Werther's® Original® No Sugar Added candies – a perfectly sweet indulgence for people with diabetes!

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Life is sweet!

*Source: AC Nielsen MarketTrack, National All Channels sales 52 wks ending Nov. 27/04.