

# *What you should know about DIABETES*

*Dr. Davidicus Wong*



**Burnaby**

**Division of Family Practice**

A GPSC initiative



# The Burnaby Division of Family Practice

*[divisionsbc.ca/burnaby](http://divisionsbc.ca/burnaby)*

*Why are we here?*



# *The Circle of Caring*



***OUR PATIENTS***

# *Expanding the Circle of Caring*

***OUR PATIENTS***

***OUR COMMUNITY***

# *Expanding the Circle of Caring*

***OUR PATIENTS***

***OUR COMMUNITY***

***OUR FUTURE***



***We care about our patients***



***We care about our community***





# *What you should know about DIABETES*

- 1. A new way to think about health*
- 2. Myths (and facts) about diabetes*
- 3. Are you at risk? Should you be tested?*
- 4. What people with diabetes should monitor*
- 5. The basics of healthy eating for diabetes*
- 6. The value of exercise*
- 7. Achieving your goals and your positive potential in life*



*What is healthcare?*

An iceberg floating in a dark blue ocean under a blue sky with wispy clouds. The tip of the iceberg is above the water, while the much larger base is submerged. The text 'ACUTE HOSPITAL CARE' is positioned above the water line, and 'COMMUNITY CARE, CHRONIC CARE' is positioned within the submerged part of the iceberg.

**ACUTE HOSPITAL CARE**

**COMMUNITY CARE,  
CHRONIC CARE**



*Who provides most of your healthcare?*

A photograph of an iceberg floating in a dark blue ocean under a blue sky with wispy clouds. The visible tip of the iceberg is small and jagged, while the submerged portion is much larger and more complex in shape. The text 'HEALTHCARE PROFESSIONALS' is written in white, bold, sans-serif capital letters on the left side of the image, above the water line. The text 'YOU!' is written in white, bold, sans-serif capital letters in the center of the submerged portion of the iceberg.

**HEALTHCARE  
PROFESSIONALS**

**YOU!**





*Healthcare  
is Self-Care*

# *Healthcare is Self-Care*

*The best predictor of your future health  
are the habits you practice today*

# *4 Foundations of Self-Care*

# *The 4 Foundations of Self-Care*

*What you eat*

*What you do*

*How you feel*

*How you relate*

# *1st Foundation of Self-Care*

*What you eat*

*What you put in your body*

*your daily diet, alcohol & drugs  
medications*



# *2nd Foundation of Self-Care*

*What you do*

*Physical Activity & Rest*

# *3rd Foundation of Self-Care*

*How you feel*

*Emotional Wellbeing*

*Managing stress*

*Recognizing your emotions*

*Managing them*

*Finding meaning*

# *4th Foundation of Self-Care*

*How you relate*

*Healthy Relationships*

*commitment*

*good communication*

*time*

*nurturing unconditional love*

# ***The Empowered Patient***

*What do you need for good self-care?*

# *What do you need for good self-care?*

- 1. Knowledge*
- 2. Professional & Peer Support*
- 3. Planned care*





*What is health?*

*What is health?*

*The absence of disease?*

...

# *What is health?*

*Health is not the absence of illness,  
and healthcare is not merely the  
treatment of disease.*

...

# *Your Positive Potential*

*I believe that we each have a unique potential in life, and it is our duty to realize that potential and help others achieve theirs.*

...

***Your Positive Potential**  
does not mean perfection.*

*It is guided by your personal values.*



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- 1. Knowledge*
- 2. Professional & Peer Support*
- 3. Planned self-care*
  - Healthy eating*
  - Physical activity*
  - Medications*
  - Monitoring*

# *Five Myths About Diabetes*

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# *Five Myths About Diabetes*

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- 2. It's all about sugar.*
- 3. It comes from being overweight and eating too much sugar.*
- 4. All people with diabetes need insulin and check their blood sugars throughout the day.*
- 5. Everyone with diabetes gets complications.*

# *Myth #1*

*I don't need to worry about it.*

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*Diabetes is common:*

*1 in 11 adults over 20.*

*The incidence will increase as we age,  
become less active and gain weight.*

## *Myth #2*

*It's all about sugar.*



*Diabetes is a problem of metabolism – how the body converts food into energy.*

*Glucose is a source of energy for every cell.*

*Diabetes can affect every organ system,  
including the circulatory and nervous  
systems.*

*Poorly controlled diabetes can cause heart attacks, strokes, kidney failure, amputations and blindness.*

## *Myth #3*

*It comes from being overweight and eating too much sugar.*

*There are 2 types of diabetes:*

*Type I: insulin-dependent*

*The pancreas no longer produces insulin. Insulin injections or infusions are needed.*

## *Type II diabetes: insulin-resistant*

- *90% of diabetes*
- *hereditary*
- *cells become resistant to the effects of the body's own insulin*
- *become glucose intolerant*
- *carbohydrates (sugars, starches) cause a greater rise in blood sugars*



## *Myth #4*

*All people with diabetes need to take insulin and check their blood sugars throughout the day.*

*With type I diabetes, there is insufficient natural insulin – extra insulin is required and blood sugars have to be carefully monitored to avoid high and low blood sugars.*

*With type II diabetes, most do not need insulin with the onset of the condition so they usually do not need frequent glucose testing throughout the day.*

*Regular exercise (e.g. 30 minutes each day) and more frequent regular meals with low glycemic index foods are essential.*

*There are a variety of oral medications that improve glucose intolerance and lower blood sugars with type II diabetes.*

*If sugars continue to rise, insulin may be needed.*

## *Myth #5*

*Everyone with diabetes gets complications.*



*With the careful self-management of diabetes, most of the complications of diabetes can be avoided.*

*Professional support and education can enable individuals to be effective managers of their own health.*

# *The Classical Symptoms of Diabetes*

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# *The Classical Symptoms of Diabetes*

*Most new cases of diabetes are  
diagnosed before these dramatic  
symptoms appear.*

# *Are you at risk for diabetes?*

- *Family history of diabetes*

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- *Family history of diabetes*
- *History of diabetes in pregnancy, polycystic ovary syndrome, metabolic syndrome (high sugars, BP, abnormal cholesterol, triglycerides, abdominal fat)*



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- *Family history of diabetes*
- *History of diabetes in pregnancy, polycystic ovary syndrome*
- *Aboriginal, Hispanic, South Asian, Asian or African descent*

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- *Family history of diabetes*
- *History of diabetes in pregnancy, polycystic ovary syndrome*
- *Aboriginal, Hispanic, South Asian, Asian or African descent*
- *Overweight*
- *Sedentary*

# *Are you at risk for diabetes?*

- *Family history of diabetes*
- *History of diabetes in pregnancy, polycystic ovary syndrome*
- *Aboriginal, Hispanic, South Asian, Asian or African descent*
- *Overweight*
- *Sedentary*
- *High BP, high cholesterol*
- *Over 40 years old*

*If you think you might be at risk,  
ask your doctor*

*or take the Canadian Diabetes Risk  
Questionnaire (CANRISK)*

*[www.diabetes.ca/take-the-test](http://www.diabetes.ca/take-the-test)*

# *When to test for diabetes*

*The CDA Clinical Practice Guidelines recommends **screening every 3 years** in individuals **over 40 years old or at high risk** using a risk calculator (i.e. CANRISK)*

# *How do you test for diabetes?*

- 1. Hemoglobin a1c*
- 2. Fasting glucose*
- 3. Glucose Tolerance Test*

. . .



# *Confirming diabetes*

1. Hemoglobin a1c *over 6.5%*
2. Fasting glucose *over 7.0 mmol/L*
3. 75 gm Glucose Tolerance Test  
*fasting glucose over 7.0 mmol/L OR  
glucose over 11.1 mmol/L 2 hrs later*

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# *Know Your Numbers*

*What everyone with diabetes  
needs to know about their lab tests.*

# *Know Your Numbers*

1. *Hemoglobin a1c*
2. *LDL cholesterol*
3. *HDL cholesterol*
4. *Total cholesterol/HDL ratio*
5. *Microalbumin*
6. *Blood Pressure*
7. *Estimated GFR*

## *Hemoglobin a1c*

- *Reflects the “average glucose level” over the past 2 to 3 months*
- *Does not require fasting*
- *Goal: less than 7.0%*

# *Hemoglobin a1c*

*Note: the a1c is not equivalent to glucose levels in mmol/L*

*Hb a1c of 6.5% = mean glucose of 7.2 mmol/L*

*Hb a1c 7.0% = mean glucose of 8.1 mmol/L*

*Hb a1c of 7.5% = mean glucose of 9.1 mmol/L*

*Hb a1c of 8.0% = mean glucose of 10.0 mmol/L*

*Hb a1c of 10.0% = mean glucose of 13.6 mmol/L*



# *Hemoglobin a1c*

*An optimal Hb a1c of under 7.0% usually corresponds to fasting/before meal glucose levels under 7.0 mmol/L and 2 hour after meal glucose levels under 10.0 mmol/L.*



# *Optimal blood sugars*

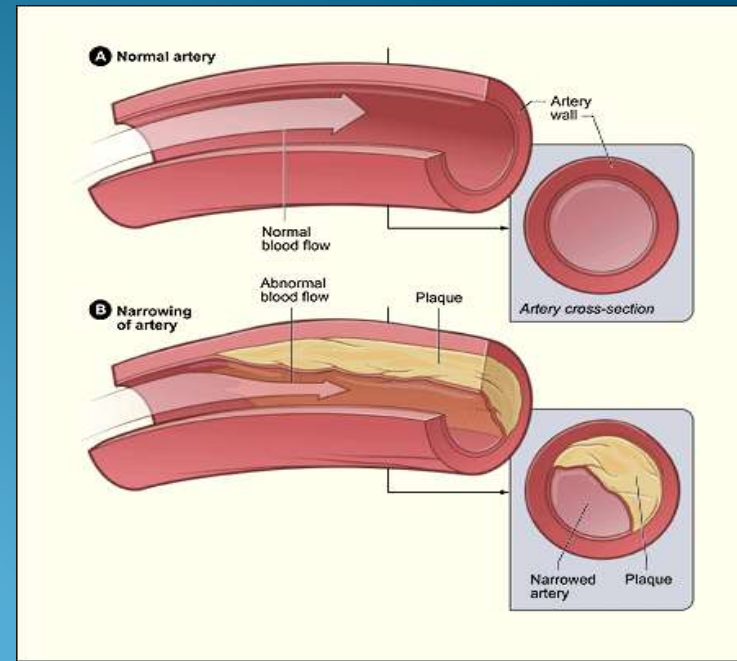
*Under 7.0 mmol/L before meals (i.e. breakfast, lunch and dinner)*

*Under 10.0 mmol/L 2 hours after meals*

*\*only if this can be safely achieved without significant risk of hypoglycemia*

# *LDL cholesterol*

- *The “bad” cholesterol*
- *Correlated with plaque clogging the arteries supplying the heart, brain, kidneys and extremities*
- *Goal: under 2.0 mmol/L*



# *HDL cholesterol*

- *The “good” cholesterol*
- *Reduces plaque in your arteries*
- *Raises by fish, exercise, (alcohol)*
- *Goal: over 0.9 mmol/L in men  
over 1.1 mmol/l in women*



# *Total cholesterol/HDL Ratio*

- *Goal: less than 4.0 mmol/L*
- *A measure of cardiovascular risk*



## *Microalbumin (ACR)*

- *A test for small amounts of protein in the urine*
- *Associated with potential early kidney (or microvascular) disease*





# *Blood Pressure*

- *A separate risk factor for vascular disease*
- *Goal: less than 130/80*



## *Estimated GFR*

- *A blood test ordered as “creatinine”*
- *A measure of kidney function*
- *Normal: over 60*

## *What other checks are important for diabetes?*

- 1. Complete physical exam (at least every 2 years) **to detect early complications***
- 2. Foot exam by a physician every year  
**Check your own feet every day!***
- 3. Eye examination (every 1 to 2 years) **to assess the retinal blood vessels***

# *What and how to eat for diabetes*

- 1. Don't skip breakfast or eat one big meal at night!*
  - Frequent, smaller meals keep glucose levels more even*
- 2. Healthy portion sizes*
- 3. Attend to the Glycemic Index (G.I.)*

# *Healthy Portions*

- 1. Half the plate: vegetables*
- 2. One quarter: starches (rice, potatoes, pasta) **note the glycemic index***
- 3. One quarter: protein (lean meat, beans) **mind your cholesterol***
- 4. One portion of fruit **one apple, ½ cup berries***
- 5. Avoid sugar-containing drinks*



The image shows a top-down view of a meal setup. A white circular plate is centered on a dark grey placemat. The plate is divided into three sections by dashed lines: a top half and a bottom half. The top half is labeled 'VEGETABLES (at least 2 kinds)'. The bottom half is further divided by a vertical dashed line into two equal sections. The left section is labeled 'GRAINS & STARCHES (potato, rice, corn, pasta)' and the right section is labeled 'MEAT & ALTERNATIVES (fish, lean meat, chicken, beans, lentils)'. To the left of the plate is a silver fork, and to the right is a silver knife and a silver spoon. To the right of the placemat is a glass of milk and a whole apple.

**VEGETABLES**  
(at least 2 kinds)

**GRAINS &  
STARCHES**  
(potato, rice,  
corn, pasta)

**MEAT &  
ALTERNATIVES**  
(fish, lean meat,  
chicken, beans,  
lentils)

**MILK &  
ALTERNATIVES**

**FRUIT**



# *Glycemic Index*

*The ability of a food to raise your blood sugar. We should consume **low GI foods** in preference to high GI foods.*

*<http://www.diabetes.ca/diabetes-and-you/healthy-living-resources/diet-nutrition/the-glycemic-index>*

New York Times  
Bestselling Diet Book

**THE**

# gi

**Glycemic Index**

# DIET

**Updated and Revised**

"Finally, the glycemic index is being recognized as a key component for permanent weight loss and the treatment of chronic disease. Rick Gallop's book is an excellent introduction to this major area of nutrition."

— DR. BARRY SEARS, author of *The Zone*

If You Understand  
A Traffic Light, You'll  
Understand This Diet

**RICK GALLOP**

past president of the Heart and Stroke Foundation of Canada



## Glycemic Index

# Choose low glycemic index carbohydrates

LOW GI (55 OR LESS) *† Choose most often ✓✓✓	MEDIUM GI (56-69) *† Choose more often ✓✓	HIGH GI (70 OR MORE) *† Choose less often ✓
<b>BREADS:</b> 100% stone ground whole wheat Heavy mixed grain Pumpernickel	<b>BREADS:</b> Whole wheat Rye Pita	<b>BREADS:</b> White bread Kaiser roll Bagel, white
<b>CEREAL:</b> All Bran™ Bran Buds with Psyllium™ Oat Bran™	<b>CEREAL:</b> Grapenuts™ Puffed wheat Oatmeal Quick oats	<b>CEREAL:</b> Bran flakes Corn flakes Rice Krispies™
<b>GRAINS:</b> Barley Bulgar Pasta/noodles Parboiled or converted rice	<b>GRAINS:</b> Basmati rice Brown rice Couscous	<b>GRAINS:</b> Short-grain rice
<b>OTHER:</b> Sweet potato Yam Legumes Lentils Chickpeas Kidney beans Split peas Soy beans Baked beans	<b>OTHER:</b> Potato, new/white Sweet corn Popcorn Stoned Wheat Thins™ Ryvita™ (rye crisps) Black bean soup Green pea soup	<b>OTHER:</b> Potato, baking (Russet) French fries Pretzels Rice cakes Soda crackers

# *The Importance of **Physical Activity***

*Some physical activity after each meal  
will reduce after meal blood sugars*

*Guideline recommendation:*

*150 minutes exercise/week  
or 30 minutes/day*



# *Keys to achieving your goals*

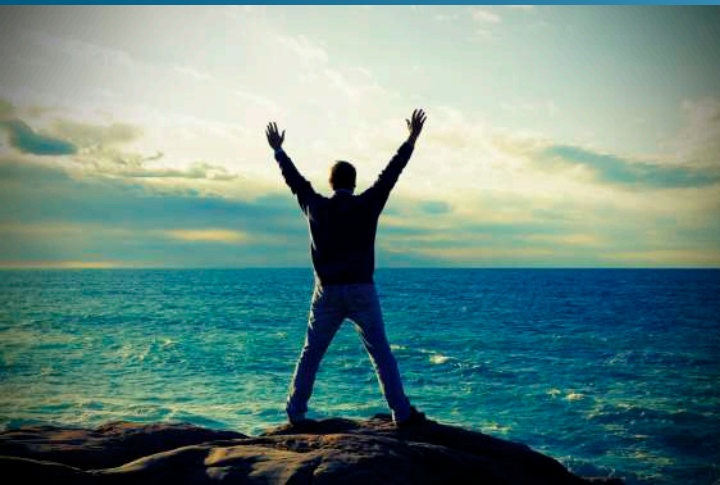
## *1. Choose wisely*

*A goal that matters to you*



## *2. Visualize yourself having achieved your goal*

*The Power of Attraction*  
*Reprogramming your subconscious*  
*Priming the pump for success*

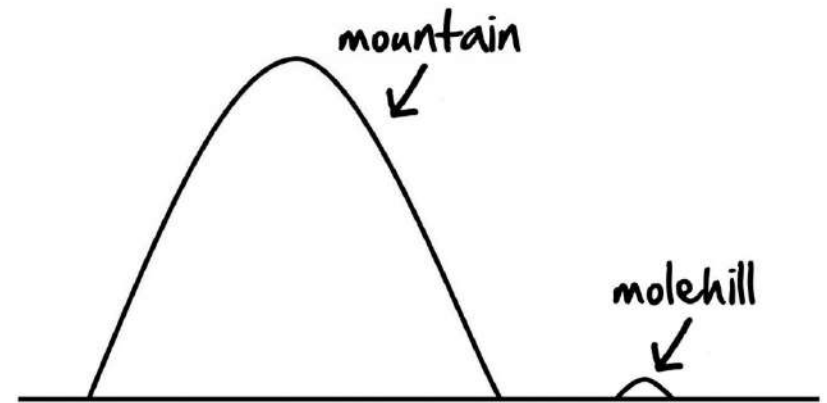




### *3. Break it down*

*From supersized into manageable morsels*

*You'll gain confidence with early successes.*



## *4. Write down the details*



# ***SMARTTEST goals***

***Specific**-What will you do? Where?*

***Measurable**-How much? How long?*

***Achievable**-realistic and do-able*

***Relevant**-important to you and your health*

***Time Frame**-When will you start?*

*When will you finish?*

***Evaluate**-How did you do? What did you learn?*

***Stepping Forward**-What will you do next?*

*What will you do differently?*

***Together**-Who will work with you? Who will you share with?*

## *5. Anticipate and prepare for roadblocks*



*6. Enlist support  
Choose a coach  
or a teammate*

*Your partner, a friend  
or a neighbour*

*Consult your family doctor*





# *Your Positive Potential*

*I believe that we each have a unique potential in life, and it is our duty to realize that potential and help others achieve theirs.*

...



# *Our Positive Potential*

*With knowledge, engagement and support, we can manage chronic health conditions and live well.*

# *The Most Common Chronic Condition*

*Everyone in this room has the same  
chronic condition.*

...

# *The Most Common Chronic Condition*

*It is incurable,*

...

# *The Most Common Chronic Condition*

*It is incurable,*

*it is sexually transmitted,*

...

# *The Most Common Chronic Condition*

*It is incurable,  
it is sexually transmitted,  
and it has a 100% mortality*

• • •

# *The Most Common Chronic Condition*

*That chronic condition is LIFE.*

...



# *The Most Common Chronic Condition*

*That chronic condition is LIFE.*

*Let's make the most of it!*

.

# SHARE

*Let's create a healthier community*



# *Why we are here*

***OUR FRIENDS***

***OUR COMMUNITY***

***OUR FAMILIES***

***OUR FUTURE***

***Our Expanding the Circle of Caring***

*Healthcare is Self-Care*  
*Pass it on!*

*POSITIVE POTENTIAL MEDICINE*  
*davidicuswong.wordpress.com*  
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