

TOM ELLIOTT MBBS
ENDOCRINOLOGY & INTERNAL MEDICINE

Dr. T.G. Elliott Inc.
4102 – 2775 Laurel St.
Vancouver, BC V5Z 1M9, CANADA

ph 604 - 875-5900
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Type 2 Diabetes Careplan

You have Type 2 Diabetes. Diabetes is present when the blood glucose (sugar) level is > 6.9 before breakfast and/or >11.1 two hours after a meal. Normal levels are <6 before breakfast and <7 two hours after a meal.

Type 2 affects affects 8% of adult Canadians. Risk factors for diabetes include the natural aging process,, overweight and low physical fitness. Genetics/family history also play a strong role. These factors combine to lead to a deficiency in insulin and/or a reduction in insulin activity (called “insulin resistance”). Insulin is required by your body to process sugar.

Untreated Type 2 Diabetes is associated with a doubling of the risk of heart attack and stroke and a risk of damage to the eyes, kidneys and nerves. Diabetes treatment is aimed at controlling blood sugar and managing cholesterol/lipids, blood pressure and other risk factors through a combination of lifestyle modification, blood sugar testing, and medication. This treatment is very successful at preventing the development of all of the above problems.

To effectively manage your diabetes and cardiovascular risk I recommend that you:

- Test your blood sugar.. Start by testing your sugar before breakfast aiming for a value <7.0. You can also test 2 hours after a meal aiming for <10 – your reading will tell you how well you body handled the meal.

If your blood sugar is above these targets despite lifestyle therapy (see below) you need medication. If you are already on medication you need more or different medication, including eventually insulin in all cases.

- Embrace lifestyle therapy. This is all about implementing and maintaining a sustainable diet and exercise program – the net effect of lifestyle therapy is lower blood sugar and lower cardiovascular risk. This is because both weight loss & exercise result in improved insulin action (by reducing “insulin resistance”).

Diet: Your body turns everything you eat (with the exception of fat) into sugar. By reducing the size of your portions & by choosing certain foods over others you will see an immediate lowering in your blood sugar. No individual food is prohibited – sugary food and drink turns to sugar in your blood almost immediately; simple starches like rice, bread, pasta, noodles, potatos turn to sugar in your blood quickly while grainy foods and vegetables turn to sugar in your blood more slowly. Meat also turns to sugar slowly. Lowering the amount of fat in your diet may help you to lose weight (if applicable) & will improve your cholesterol/lipid profile.

Exercise: Exercise improves the action of your own insulin. I suggest that you exercise for 15-30 minutes 3-5 times per week and that you gradually intensify your level of exercise.

- Quit smoking (if applicable).
- Moderate your consumption of alcohol (if applicable).
- Book into Diabetes Classes at your local diabetes centre. My staff will make the appropriate referral.
- Go to the lab for regular testing (usually every 3 months).

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MEDICATION

- Start one or more of the following blood-glucose lowering medications (prescription attached).
- Metformin (prescription attached)– this works by improving the action of your own insulin, especially by reducing the amount of sugar your liver makes. Metformin comes in 500 mg tablets. It is usually taken twice daily with meals. One third of individuals may experience some stomach discomfort with metformin. I suggest starting with ½ tablet with breakfast and dinner and then increasing to one tablet with breakfast and dinner after one or two days. Depending on a number of factors you may be permitted to increase the dose to two tablets with breakfast and dinner - note metformin should generally not be taken in individuals with impaired kidney (renal) function.
 - Glyburide (prescription attached) – glyburide works by increasing the amount of insulin in your body. The main side effect of sulfonylurea is hypoglycemia (low blood sugar – see below). Glyburide is a member of the sulfonylurea class of drugs. medication is taken once or twice per day with meals.
 - Januvia (prescription attached). Januvia lowers blood sugar by indirectly increasing the amount of insulin your body produces and by counteracting the effect of glucagon, a protein made by the body that increases blood sugar.
 - Lantus (prescription attached) - Lantus insulin is taken by injection, usually once daily before breakfast or bed. Lantus is prescribed to control your blood sugar when you are not eating – the dose of Lantus is not written in stone – the correct dose is the dose that results in a blood sugar value of 5-7 before breakfast. In general values < 5 mean that the dose should be reduced; value >7 suggest that the dose should be increased.

Note the common potential side-effect of all these medications is hypoglycaemia (low blood sugar) – hypoglycemia is any value <3.5 or a sugar < 4.0 if you feel unwell. The treatment of hypoglycemia is to immediately drink some sugary liquid (fruit juice or regular pop) or eat something starchy.

For help with interpreting your blood sugar readings you may upload your blood glucose meter to <http://thepatientclinic.ca> If you are not sure what to do about your blood sugar phone 1-800-RNs-HELP or send a Q&A to me through <http://thepatientclinic.ca>

Every 3 months you should go for a blood test to the local lab (see standing order requisition attached) to check the level of your A1c – the A1c is a test that is an index of your average blood sugar over the previous 3 months. A good level in Type 2 diabetes is <7.0. Sometimes lower values are desirable. A value > 7.9 requires intervention. You can log on to <http://thepatientclinic.ca> to check your results 1-2 working days after giving the blood sample. If you wish <http://thepatientclinic.ca> will send you an email or short-text reminder to have your blood work done and will similarly notify you when your results can be viewed online

- Start a cholesterol-lowering medication (prescription attached). Simvastatin (and other members of the statin class of drug such as Lipitor, Crestor & Pravachol) reduce LDL (“bad”) cholesterol dramatically (usually by >35%), increase HDL (“good”) cholesterol by 5-10% and lower the ratio of total cholesterol to HDL “risk ratio” by >40%.

Your current LDL level is (target <2.0). Your current risk ratio is (target <4.0).

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Statins have few side-effects. The commonest side effect is muscle pain – most muscle pain is unrelated to medication. Once you have been taking Statin for at least one month get the attached blood work done to check your level of LDL and your risk ratio whether the LDL value is <2.0. If it is >2.0 the dose should generally be doubled. You may log-in 24-48 hrs later to <http://thepatientclinic.ca> to check your results. Also included in the blood work is “safety” bloodwork to check on your liver, kidneys and muscles. Statin does not “cure” your cholesterol elevation. Thus if you stop Statin your LDL value will return to its baseline value. Therefore once started Statin is generally taken for ever. Taking Statin will likely reduce your risk of heart attack, stroke or death by 35%

- Start a blood-pressure lowering medication.

You can measure your blood pressure at home with an inexpensive device, or in your local drug store. Your target blood pressure is < 130/80 - this is the “systolic” blood pressure (the top number; the bottom number, diastolic blood pressure, is less important as a target). Many people with diabetes require 2 or more blood pressure lowering medications. Side effects or unwanted effects associated with blood-pressure lowering medication include cough (with ACEIs), fatigue (with beta-blockers), ankle swelling (with CCBs), low potassium (thiazide diuretics), high potassium (with ACEIs, ARBs, or spironolactone) and low sex drive or breast enlargement (with spironolactone).

- Start ASA 81 mg per day (this is included in the attached prescription but does not actually require a prescription). ASA reduces the chance of your blood clotting.
- Stop or change the following medication:

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Date

Patients name

Rx

blood glucose meter

test every day before breakfast, target 5-7

metformin 500 mg

take ½ with breakfast and dinner for two days then

take one with breakfast & dinner thereafter

3 months supply (200 tabs), 3 repeats

glyburide 5 mg

take with breakfast & with dinner

patient authorized to decrease to ½ with breakfast (or stop) if sugar below 5.0;

authorized to increase to two tablets with breakfast and dinner if blood sugar above target

3 months supply (100 tabs), 3 repeats

Lantus Solostar

take units before breakfast or before bed

patient authorized to increase dose by 2 units every day (up to 60 units as necessary) if blood sugar above target

repeat indefinitely – note, not a prescription item

simvastatin mg

take one before breakfast

3 months supply (100 tabs), 3 repeats

ramipril mg

Take one with breakfast

3 months supply (100 tabs), 3 repeats

ASA 81 mg

take i OD indefinitely (pharmacy – dispense as non-prescription item)

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Laboratory Requisition

Patients name

ORDERING MD — T.G. Elliott #06526

CC: family physician

CC: The Patient Clinic C1968/TPACL

PATIENT INSTRUCTIONS — get this blood test done on an empty stomach - preferably after an

overnight fast - go to one of the following labs

- Lifelabs or BC Biomedical Labs
- if none of the above available in your area go to your local hospital laboratory

LAB TESTS REQUESTED — Standing Orders noted below "thru YYYY-MM-DD".

- A1c quarterly thru 2010-10-12
- Creatinine annually thru 2010-10-12
- Potassium annually thru 2010-10-12
- Urine Microalbumin/Creatinine Ratio annually thru 2010-10-12
- ALT annually thru 2010-10-12
- AST annually thru 2010-10-12
- CK annually thru 2010-10-12
- Major risk factor for CAD:**
- Cholesterol annually thru 2010-10-12
- Triglycerides annually thru 2010-10-12
- HDL Cholesterol annually thru 2010-10-12
- LDL Cholesterol annually thru 2010-10-12
- Chol/HDL (Risk Ratio) annually thru 2010-10-12
- TSH annually thru 2010-10-12

SIGNATURE M.D. DATE 2008-10-12