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# CCM NEWSLETTER

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## Our Old Friend: Diabetes



### **‘Honey Urine’**

As early as 1500 B.C. diabetes has been documented in people. Ancient Egyptians and Indians write about the disease that “*turns flesh to urine*” and in which the urine attracts ants. In

400-500 AD, two Indian

physicians were able to identify the two types of diabetes and since then, scientists and physicians alike have been studying the cause, effect, and prevention of this common disease. Diabetes is a Greek word meaning ‘*siphon*’, and Mellitus is a Latin word which means “*sweet as honey*”. Physicians in the past would suspect diabetes by the hallmark traits of frequent urination, wasting away of the body, and excessive thirst. They would then confirm the suspected diagnosis by actually tasting the patient’s urine. Diabetes is simply put—the buildup of sugar in your body due to the body’s inability to clear it. Since the sugar can’t be used, it hangs around in the blood and gets passed into our urine—thus giving the urine a ‘sweet’ taste. If the physician found that the urine was sweet, a variety of questionable treatments would be recommended. The treatments ranged from frequent horseback riding, calorie restriction, and a variety of oils and other herbs.

Luckily our methods to diagnose diabetes have since improved dramatically, as well as our treatments for both Type 1 and Type 2 Diabetes Mellitus. Given the long history of this disease, as well as its increased

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


prevalence in our population, much research has been done on how this disease impacts other aspects of our health, how we can manage it, and more importantly how we can prevent it.

In the past few months, the newsletters have all focused on diseases that impact heart health and can contribute to heart disease. Diabetes is another piece of the puzzle that can increase the risk of heart attacks and strokes, and affect other organ systems.

## What Is Diabetes?

***Diabetes is a disease where the body doesn't make or use insulin properly.***

Here is a basic breakdown of the types of Diabetes Mellitus (DM)

Type 1 Diabetes	Type 2 Diabetes	Pre-Diabetes
		
Pancreas does NOT make insulin.	Pancreas does not make enough insulin or doesn't use it properly.	Blood sugar levels are higher than they should be, but not enough to be diagnosed as diabetes.
Mostly seen in youth	Mostly seen in adults, but now increasingly seen in kids.	Increases risk for developing Type 2 DM
Only treatment is insulin	Treatment is other medications in addition to insulin	Can prevent or delay onset of Type 2 DM via exercise and diet

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We won't be discussing Type 1 DM in this newsletter, but instead we will focus on Type 2 DM.

## Type 2 Diabetes Mellitus (T2DM)

When you eat food, your body changes it into glucose (a type of sugar). Insulin, a hormone made by the pancreas, allows the glucose to go into your cells and be turned into energy for your body to function. In someone who has Type 2 DM, the pancreas doesn't make enough insulin or the body doesn't use the insulin properly (this is called insulin resistance). When this happens, glucose builds up in the blood and can lead to serious damage to your heart, eyes, blood vessels, kidneys, and nerves.

## Diagnosis

Like in many diseases, symptoms can vary from person to person. Many people don't even see symptoms in the early stages of diabetes. However, even though people don't experience any symptoms, damage is already occurring in the body due to the high blood sugar levels.

Here are some common symptoms of diabetes:

- *Blurry vision*
- *Excessive thirst*
- *Frequent urination*
- *Slow healing wounds*
- *Tingling or numbness in hands or feet*
- *Frequent skin or urinary tract infections, vaginal yeast infections*
- *Dry, itchy skin*

Insulin resistance comes with certain signs too such as:

- *Acanthosis nigricans (darkening around armpits, neck, groin folds)*
- *High blood pressure*

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- *High cholesterol*

You may be at a higher risk of diabetes if you have the following:

- Obesity- **THIS IS THE SINGLE MOST IMPORTANT FACTOR!!** The more overweight you are, the more insulin resistance you have
- Older than 45 years old- you can't do much to change this. It's just another consequence of aging. However, this is even more reason to reduce the risk factors you have control over
- Family History of DM- again, you can't really help this, but it's important for your doctor to know
- Smoking and Alcohol Use- You should stop smoking now. There are no benefits to smoking... none. While it's okay to drink some alcohol with a meal, you should only have 1 serving a day

*Reminder: A serving is 4 oz of wine, 12oz of beer and 1.5 oz of hard liquor*

If your doctor suspects you may have diabetes or are at high risk for diabetes, the following lab work may be ordered:

★ **Fasting Blood Glucose**

- This blood work is taken after an 8 hour fast
- A level of **126 or greater** indicates **Diabetes**
- A level **100-125** indicates **Pre-Diabetes**
- A level **99 or less** is **normal**

★ **Hemoglobin A1C**

- This is a blood test that looks at the average amount of sugar in your blood over the past 3 months
- It's reported as a percentage

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- **6.5% or higher** indicates **Diabetes**
  - **5.7%- 6.4%** indicates **Pre-diabetes**
  - **Less than 5.7%** is **normal**

★ **Random Blood Sugar**

- This is taken at any time of day
- If you have symptoms consistent with diabetes and a level of 200 or more indicates you may have diabetes

## **Treatment**

### **Bottom Line: Control Your Blood Sugar**

If obesity is the greatest risk factor in contributing to diabetes, then weight reduction is key in controlling your sugars.

You need to eat a diet that is full of grains, fruits, and vegetables. You should try to eat 3 times a day to keep insulin and sugar levels pretty consistent.

Exercise 30 minutes a day to help increase your levels of insulin to, in turn, lower your blood sugar levels. Exercise will also help to reduce your weight.

If your diabetes can't be controlled with diet and exercise, your doctor may prescribe medications to help. All the different types of medicine prescribed to treat diabetes won't be discussed in this newsletter, but generally the first medication that is prescribed is one taken by mouth. Commonly, it's the medicine called *Metformin*. These medicines help your body make more insulin AND help your body use insulin more efficiently. When oral medicines are not providing enough sugar control, insulin injections may be recommended. Usually, individuals with diabetes have blood work done every 3 months. The doctor usually orders the hemoglobin A1c (Ha1C) test to check the sugar levels and make modifications to the medications

as needed. People who are only taking oral medications for diabetes usually don't need a home blood glucose monitor to check their sugars every day. This type of frequent blood sugar checks is usually reserved for patients who are using insulin to control their diabetes. Your doctor will recommend the method of blood sugar checking that is appropriate for your circumstance.

It's important to remember that you can live a normal life with well controlled diabetes. Controlling diabetes takes effort and commitment. It will be difficult at first, but should become a part of your new lifestyle.

In subsequent newsletters, we will be talking more about diabetes, its management and serious complications that can arise from poorly controlled diabetes.

Our records indicate that you have:    Pre-Diabetes    Diabetes

Not Diabetic

Your most recent fasting blood sugar was:

\_\_\_\_\_

Your most recent Ha1C was:

\_\_\_\_\_

Based on your last lab work you are:    Controlled    Not Controlled

Your next appointment is on: \_\_\_\_\_

Please remember to bring your medications and blood sugar logs (if applicable).

*Jorge Duchicela, M.D.*