Dakota Diabetes Coalition is proud to offer this column on diabetes and related concerns every other Friday.

Dr. Johnson is a family practice doctor in Grand Forks with a special interest in diabetes -- and a special knack for writing. As a member of the Dakota Diabetes Coalition, he has generously made himself available to answer questions through our listserv. If you have comments, or questions for Dr. Johnson to address in future columns, please contact gailhand@q.com

DAKOTA DIABETES COALITION

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http://www.ndhealth.gov/diabetescoalition/

You're just not my type!

Different types of diabetes require different treatments

Patients being diagnosed with diabetes are sometimes confused about what type of diabetes they have. In addition, it's not unusual for patients with type 2 diabetes to believe that they have somehow "converted" to type 1 when they start using insulin.

Providers sometimes struggle with terminology when completing insurance forms or writing prescriptions for Medicare patients' diabetes supplies. Each type of diabetes has a clear definition, and the mechanism behind each type of diabetes is different. So understanding these classifications is important for diagnosis and treatment.

Types of Diabetes:

- Type 1 diabetes

- Type 2 diabetes
- Type “1.5” diabetes (Latent Auto-immune, LAD)
- Gestational diabetes (Diabetes of Pregnancy)
- Pre-diabetes

Type 1 diabetes is an autoimmune disease. In autoimmune disease, the body mistakenly recognizes something that belongs in the body as foreign, and systematically destroys it. In the case of type 1 diabetes, the beta cells of the pancreas (which produce insulin) are mistakenly destroyed, and the patient has an absolute insulin deficiency.

Type 1 Diabetes:

- ~10% of all diabetes cases in U.S.
- Usually diagnosed in younger patients
- Most diagnosed before age 30
- Autoimmune mechanism
- Can be diagnosed at any age
- Often have very high blood sugar at time of diagnosis (often >300)
- No definite cause or risk factors
- Positive antibody tests, indicating an autoimmune process

Type 2 diabetes is not an autoimmune disease. The core defect is insulin resistance. The beta cells produce insulin, but the body is resistant to the effect of insulin. This is usually as a result of obesity. However, over time, the patients will have decreased insulin production by the pancreas, and nearly all will need insulin. However, this is not as a result of “mistaken” destruction of the beta cells by the body, they simply fail over a period of years.

Type 2 Diabetes:

- More common, ~ 90% of all diabetes cases in the U.S.
- Usually diagnosed in adulthood
  - More children and adolescents with type 2
  - Associated with obesity
- May or may not have symptoms
- Fatigue a common complaint
- **Risk Factors**
- -Obesity
- -Sedentary Lifestyle
- -Family History
- -High Blood Pressure
- -Abnormal Cholesterol Profile
- -Cigarette Smoking

Type "1.5" diabetes, also known as Latent Autoimmune Diabetes (LAD) may be up to 10% of all type 2 cases. These patients initially present with symptoms of type 2 diabetes, but eventually reach a point where their blood sugar control deteriorates rapidly. They have an autoimmune component, but their process of beta cell destruction is slower than typical type 1 patients, but much more rapid than type 2 patients. They may have positive antibody tests, like type 1 patients.

These patients may function well on oral diabetes medications for a period of months, or even years, but will get to a point where they rapidly advance to insulin. At that point, they should be treated as a type 1, but metformin is still sometimes continued, particularly in obese patients.

Gestational diabetes is the diabetes of pregnancy, and is a risk factor for the development of type 2 diabetes. Gestational diabetes should be considered as a pre-diabetes condition.

Gestational Diabetes:

- Diabetes of Pregnancy
- Potential complications
  - Large infant (>9 lbs)
  - C-section delivery
  - Birth defects or delivery problems
- ~ 6% of all pregnancies
- Treated with diet, exercise and sometimes insulin
- Often resolves after delivery of infant
- Higher risk of developing subsequent type 2 diabetes
- Should be monitored for life

Pre-diabetes is a condition of abnormal blood sugars that do not yet meet the diagnosis of type 2. These patients have many of the same risk factors as patients with type 2 diabetes, particularly cardiovascular disease.

Pre-diabetes:

- Abnormal blood sugar
- Not abnormal enough to be classified as diabetes
  - Normal blood sugar fasting <100
  - Pre-diabetes blood sugar 100-125
  - Diabetes blood sugar $\geq$126
- Higher risk to develop type 2 Diabetes
- Best prevention is lifestyle management

- Lifestyle management can reduce risk of diabetes by over 50%
- **Lifestyle management**
  - Meal plan
  - Activity plan
- Diabetes medications to prevent diabetes are not as effective!

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Recognizing and understanding the different types of diabetes means patients will get prompt, appropriate treatment. It's important that patients know what type of diabetes they have, so they can better understand what is happening to their bodies -- which can improve adherence.

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Definitions of Different Types of Diabetes, Dr. Johnson's Column #41, March 20, 2009