

The Dakota Diabetes Coalition is proud to offer a regular 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@yahoo.com

Visit the Coalition's website!

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

Type 1.5 complicates things

All varieties of diabetes benefit from insulin

Q. Sometimes it's not obvious if a person is type 1 or type 2. How important is it to know what type of diabetes a patient has, anyway?

A. Diabetes Definitions are coming right up! Making the correct diagnosis is important, but it's probably more important to address the immediate situation, and start insulin appropriately, especially in the case of poor metabolic control, ketosis, weight loss, polydipsia, or polyuria.

First, back to basics. Diabetes is characterized by abnormally elevated blood sugar levels as a result of defects in insulin secretion, insulin action, or both.

Currently the accepted threshold for diagnosis of diabetes is as follows:

<u>Category</u>	<u>FPG mg/dl</u>
Normal	<100
Impaired Fasting Glucose* (IFG)	100 – 125
Diabetes	≥126**

- Not to be confused with impaired glucose tolerance (IGT): 2 h OGTT 75 g at 140–200 mg/dL
- ** On 2 separate occasions
- Random (casual) glucose >200 plus symptoms, such as polydipsia, or polyuria and so forth is a diagnosis equivalent.

For practical purposes, there are three large categories of diabetes: Type 1, characterized by absolute insulin deficiency (often via an autoimmune response), Type 2, characterized by alterations in insulin action (insulin resistance), and Gestational Diabetes Mellitus (GDM), or diabetes of pregnancy. But that's not the full story.

Type 1 Diabetes accounts for about 10% of all cases of diabetes and usually appears in persons younger than 30, **but older age should not exclude the diagnosis.**

□ Type 1

Usually younger (can be diagnosed at any age) <30 years of age

FBG often >300

Usually ketones in urine and serum

Glucosuria

Metabolic acidosis on presentation

Diagnosis usually preceded by **weight loss, polyuria, polydipsia, fatigue**

Serum C-peptide markedly decreased

Positive GAD and anti-islet cell antibodies, characterizing the auto-immune of the insulin-producing Beta cells of the pancreas.

Type 2 is more typical of adults, although the numbers in children and adolescents have increased in recent years. Type 2 accounts for about 90% of all cases of diabetes.

■ **Type 2**

- Usually older
- Unusual to have markedly elevated fasting glucose
- Ketosis much less common, unless physical stress (surgery, illness)
- Glucosuria
- Usually obese
- May be relatively asymptomatic; fatigue is often presenting complaint
- Often preceded by a pre-diabetes syndrome (metabolic syndrome, history of gestational diabetes)
- May have normal fasting glucose, but abnormal post-prandial glucose
- Not antibody positive, often normal C-peptide levels

Additionally, some type 2's will rapidly progress to insulin after diagnosis, probably representing a latent auto-immune effect (Latent Auto-immune Diabetes), sometimes called "Type 1.5."

■ **Type "1.5"**

- Mixed features
- Usually presents like type 2, but progresses to insulin deficiency more rapidly, and may develop Type 1 symptoms months after diagnosis
- May be antibody positive, variable C-peptide
- ~ 10% of all type 2 patients

The question sometimes arises, who should be started on insulin at diagnosis? Most type 2's can, and should be started on an oral agent(s) at

diagnosis, but generally patients who present with ketosis or other type 1 features, regardless of age, should be started on at least a basal insulin until further evaluation. Evidence of very poor metabolic control, even in type 2, can be an indication for an insulin start at the time of diagnosis.

A presenting A1C of 10 or more, or a blood sugar greater than 300 are generally accepted for this initiation of insulin.

Starting a patient on insulin at diagnosis, even on a temporary basis, is not a difficult task, especially with newer pen devices. A single injection of basal insulin, even 10 units, in a pen can improve blood sugars and reduce danger to the patient until further evaluation.

One can rarely go wrong with this strategy; some of these patients may be able to go off insulin after a period of time, and they will realize improved blood sugars sooner rather than later.

And that's key, no matter what type of diabetes we're talking about.

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- o **Walk and Splash for Camp Sioux**, Grand Forks Alerus Center/CanadInn on Saturday, April 26th, Contact: Janelle Olson, Altru Diabetes Center: jlolson@altru.org or Marilyn Chandler, Altru Diabetes Center: mchandler@altru.org