

## New Subgroups Classified in Adult Diabetes Mellitus

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### Abstract

*Diabetes mellitus was classified in two groups, type 1 and type 2 diabetes, but Emma Ahlqvist et al. Argue that type 2 diabetes mellitus is quite heterogeneous in particular. A study published in the Lancet emphasized that diabetes in adults should be separated into 5 separate groups and that the type of diabetes should be changed. It was stated that this new classification would allow for more individualized treatments. This may, of course, lead to a new approach, which may reduce the complications of treatment for the individual.*

**Keywords:** Novel subgroups, diabetes mellitus

At The Present Time, frequency of seeing of Diabetes and Metabolic Diseases is increasing steadily. For example the prevalence of Obesity is nearly 35% (BMI>30) and 70% (BMI>25), likewise the prevalence of Diabetes Mellitus>7%, Hyperlipidemia approximately 20-25% and Metabolic Syndrome is about 35% (1, 2).

The Obesity is the key for many kinds of DM. Appetite is affected by many factors. For example where as the NPY, Orexin, Endocannabinoids, CCK and Ghrelin increases the Appetite, on the otherwise  $\alpha$ -MSH, GLP-1, Serotonin, Insulin and Leptin decreases the appetite. When the scientists found the identification of the ob gene mutation in genetically obese (ob/ob) mice, it was one of the greatest breaking point in the obesity-related syndromes. In those mice has been developed severe obesity, insulin resistance and hyperphagia. Ob gene products Leptin, that secreted from adipose cells and acts primarily through the Hypothalamus. When the Leptin levels increases, it decreases food intake and increase energy expenditure. Many individuals with morbid, early onset obesity, caused by inactivating mutations in either leptin or the leptin receptor described. The genes cause obesity in human is POMC, MC4R, PC-1, Trk-b and the others. Some of the Obesity syndromes are Prader-Willi, Laurence-Moon-Biedl, Cohen's and Carpenter's ( these syndromes are also related with hypogonadism and Mental Retardation) (3-6).

Today, the scientists think that Patients with type 2 diabetes mellitus are usually under continuous long-term medical treatment based on anti-diabetic drugs or insulin treatments to achieve the desired glucose level. Thus, each patient's treatment must be personalized about their DM type and subtypes. In a study conducted by researchers at the Swedish Lund University Diabetes Center in Lancet, a new study reported that adult diabetics were divided into 5 separate groups. Scientists now emphasize the need to change the perception that diabetes is type 2. In Sweden and Finland, the data for 8,880 adult diabetic patients were evaluated. Researchers said that categorizing diabetes more specifically would prevent many patients from getting more personalized treatment and complications from general treatment (7).

The 5 sub groups that are classified are genetically different. Researchers evaluating genetic analysis found that the five subgroups they categorized were genetically different. It was also discovered that newborns with diabetes and those with long-lasting illnesses could be included in different classifications. Researchers think that over time, there might be a shift between diabetes types. The current diabetes classification consists of two types. Type 1 diabetes is an autoimmune disorder in

which insulin hormone is not produced, and it is known that it usually occurs in childhood. Type 2 diabetes,

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which is associated with obesity and develops at an older age, the production of low levels of insulin in the body and the inability of the cells to be triggered sufficiently for glucose absorption. However, a recent study notes that this classification is very basic and leads to the failure of appropriate treatments in patients. Each group is treated differently (7).

In a study entitled “Novel subgroups of adult-onset diabetes and their association without comes,” (7) the Lancet Diabetes and Endocrinology, published in the Journal of the United States, reported that type 1 diabetes and a late autoimmune form of diabetes it can be accepted as a group. However, it is pointed out that the type categorized as type 2 should be classified as 4 different heavy types. Here are the 4 subgroups currently proposed as type 2 in the survey:

1. The first group consists of diabetic patients with severe insulin deficiency; with the same type of autoimmune group, type-1, with similar low body mass index (BMI), insulin deficiency and early onset. However, it does not contain antibodies pointing to the presence of an autoimmune disease. Diabetic eye disease is most common in this group. Most of these patients use metformin. But researchers need to start taking insulin as soon as possible, as in type 1, if this is not enough treatment (7).

2. Another serious category, called severe insulin-resistant diabetes, is associated with obesity. Body cells in this group do not respond to insulin. These patients; liver disease, chronic kidney disease and diabetic kidney. Researchers suggest that this group's use of metformin is low, and that this should be taken more seriously (7).

3 and 4. The other two categories are the lighter forms of the two groups above. The first group is known as obesity-associated mild diabetes and is based on high body mass index (7).

The latter group is referred to as age-related mild diabetes and usually occurs in elderly patients. The

researchers recommend using these two groups of metformin and lifestyle modification (7).

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