

Impact of Celiac Disease and its Genetic Mutations in Type 1 Diabetes

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DESCRIPTION

Diabetes is a complex disease that can be caused by different factors, including genetic mutations, environmental triggers, and lifestyle habits. The genetic basis of diabetes involves the proteins that are responsible for insulin production or the ability of the body to use insulin. Mutations in these proteins can cause them to function improperly and lead to high blood sugar levels. Coeliac disease and type 1 diabetes are both autoimmune conditions, meaning the body's immune system attacks its own tissues. It is estimated that 5-10% of people with type 1 diabetes also have coeliac disease. It can affect blood glucose levels in people with type 1 diabetes, because it damages the lining of the gut and reduces the absorption of nutrients, including carbohydrates. This can lead to recurrent hypoglycemia (low blood sugar) or changes in insulin requirements. People with type 2 diabetes are not at increased risk of coeliac disease, as type 2 diabetes is not an autoimmune condition. However, some people with type 2 diabetes may also develop coeliac disease, but the two are not related.

Managing of coeliac disease and diabetes together involves the following steps:

- Following a gluten-free diet for life, this means avoiding foods that contains wheat, barley, rye and oats. This will help heal the gut and prevent further damage.
- Consulting a dietitian for individual advice on how to balance the intake of carbohydrate, insulin dose and gluten-free food choices.
- Monitoring of blood glucose levels closely and adjusting of diabetes medication that are needed, as absorption of nutrients may improve after starting the gluten-free diet.
- Getting regular screening for coeliac disease if anyone have type 1 diabetes as they both are autoimmune conditions that can occur together.

Digestive issues such gas, bloating, nausea, stomach ache, constipation, diarrhoea, and rotten-smelling faeces. Anemia, weight loss, weariness, bone loss, mouth ulcers, and hair loss are all symptoms of nutritional malabsorption. Chronic

hypoglycemia (low blood sugar) or modifications in insulin needs as a result of reduced carbohydrate absorption. An itchy, blistery skin rash known as dermatitis herpetiformis typically affects the elbows, knees, torso, scalp, and buttocks. Neurological issues such headaches, seizures, tingling and numbness in the hands and feet, diminished mental capacity, and learning impairments.

Gluten diabetes is not a medical term, but it may refer to the relationship between gluten and diabetes. Gluten is a protein found in wheat, barley, rye and some oats. It can cause inflammation and damage to the small intestine in people with celiac disease, which is an autoimmune condition that affects about 6% of people with type 1 diabetes. People with celiac disease need to follow a strict gluten-free diet for life to avoid symptoms and complications. People with non-celiac gluten sensitivity may also experience symptoms such as digestive discomfort, headache, fatigue and skin issues after eating gluten, but they do not have damage to their intestine. They may benefit from reducing or eliminating gluten from their diet. People with type 2 diabetes are not at increased risk of celiac disease or gluten sensitivity, as type 2 diabetes is not an autoimmune condition. However, they may still want to limit their intake of gluten-containing foods, such as bread, pasta and baked goods, because they are high in carbohydrates and can raise blood sugar levels. Gluten-free foods are not necessarily healthier or lower in carbs than gluten-containing foods, so people with diabetes should always read labels and monitor their blood glucose levels when choosing their food options.

CONCLUSION

Genetic testing can sometimes identify these mutations, but not always. The risk of developing diabetes also depends on the type of diabetes, the family history, and the ethnicity of the person. For example, type 1 diabetes is more common in people who have certain genes linked to autoimmune disease, such as HLA-DR3 or (Human Leukocyte Antigen-DR Isotope) HLA-DR4. However, genes alone are not enough to cause diabetes; there must be some environmental or lifestyle factors that trigger it.

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Received: 21-Feb-2023, Manuscript No. DCRS-23-20893; Editor assigned: 24-Feb-2023, PreQC No. DCRS-23-20893 (PQ); Reviewed: 14-Mar-2023, QC No DCRS-23-20893; Revised: 21-Mar-2022, Manuscript No. DCRS-23-20893 (R); Published: 28-Mar-2023, DOI: 10.35841/2572-5629.23.8.149

Citation: Austen E (2023) Impact of Celiac Disease and its Genetic Mutations in Type 1 Diabetes. Diabetes Case Rep. 8:149.

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Some possible triggers for type 1 diabetes are exposure to some viruses, living in a cold climate, early introduction of solid foods, and lack of breastfeeding.