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Plasma membrane receptor protein response to calcium and vitamin D
Abstract

Type 1 and type 2 diabetes are characterized by the body's inability to metabolize glucose due to a dysfunctional glucose transporter, GLUT 4. Recent research has shown that excess calcium produced during exercise may provide another metabolic pathway for the absorption of glucose into cells. During exercise, excess calcium is released into the blood stream. The presence of calcium in the blood stream may signal an alternative glucose carrier protein to surface the plasma membrane and take in glucose from the blood stream and metabolize within the cell. The glucose carrier protein acts in the same way as the glucose transporter, GLUT 4 to metabolize glucose in the absence of insulin and insulin receptors. The challenge is to establish if calcium in combination with vitamin D can be used as an equal and alternative method to metabolize glucose and if so, in what amounts and with what method can calcium in combination with vitamin D be administered into the body to provide the same results.