Clinical Studies Implicating Obesity in Autoimmunity and Type-1 Diabetes

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About the Study

Several works have examined the impact of birth weight, weight increase, and obesity in the development of islet autoimmunity, the progression from single antibodies to numerous antibodies, and the development of type-1 diabetes. The first studies comprised community-based cohort and epidemiological case-control studies that linked a type 1 diabetes diagnosis to raised birth weight and early childhood weight gain in infancy when compared to a control group. The multiple prospective cohort studies from birth found a greater rate of early weight increase and absolute BMI z-score as predictors of islet autoimmunity development. Particularly, the Environmental Determinants of Diabetes in the Young (TEDDY) study, a multi-country cohort following children at risk for type-1 diabetes based on their HLA-DR-DQ genotype, investigated the associations between weight in the first few years of life and progression from single to multiple antibodies and subsequent type-1 diabetes development. Weight z-scores at 12 and 24 months were associated with an increased risk of progression to multiple antibodies, and a higher rate of early childhood weight gain was associated with progression from autoimmunity to type 1 diabetes in those whose initial presenting autoantibody was