

SUPPLEMENTARY DATA

**Supplementary Table 1. Predictors of 25(OH)D Concentration in Controls from the TEDDY Nested Case-Control Study Using a Linear Mixed Effects Model.**

Using a linear mixed effects model for a subject-specific 25(OH)D concentration, season and year of blood draw, height and weight of the child at blood draw, whether or not the child was on the LDP (i.e., sample collected locally and shipped to a TEDDY clinical center for processing), and sample set were significantly associated with 25(OH)D concentration among controls.

Potential Predictor	Units, if continuous, or Category, if categorical	Parameter Estimate (Standard error)	p-value
Age	In months	0.04(0.11)	0.72
Height	In cm	0.31(0.14)	0.026
Weight	In kg	-1.29(0.43)	0.003
Season of Blood Draw	Spring (March-May)	-0.19(0.73)	0.79
	Summer (June-August)	5.37(0.73)	<0.0001
	Fall (September-November)	4.99(0.75)	<0.0001
	Winter (Dec-Feb)	Ref	
Year of Blood Draw	2004-2005	-10.0(2.67)	0.0002
	2006	-6.35(2.37)	0.007
	2007	-5.35(2.23)	0.016
	2008	-3.85(2.14)	0.07
	2009	-1.73(2.03)	0.40
	2010	-1.13(1.95)	0.56
	2011-2012	Ref	
Long distance protocol (LDP)	Yes	4.98(1.22)	<0.0001
	No	Ref	
Sample Set	Set 2 (6 month, 12 month and later samples)	3.96(0.55)	<0.0001
	Set 1 (3 month and 9 month samples)	Ref	

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**Supplementary Table 2. Association between 25(OH)D Concentration Categories and Islet Autoimmunity in the TEDDY Nested Case-Control Study.**

Vitamin D Measure	All Cases (n=376) and Controls (n=1041)	Cases with Multiple Autoantibodies (n= 230) and Controls (n=639)
<b>Childhood 25(OH) concentration<sup>†</sup></b>		
>75 nmol/L	0.52 (0.32-0.84)	0.44 (0.23-0.84)
50-75 nmol/L	0.71 (0.54-0.93)	0.64 (0.45-0.91)
< 50 nmol/L	1.0 (ref)	1.0 (ref)
<b>Early infancy 25(OH)D concentration<sup>‡</sup></b>		
>75 nmol/L	0.54 (0.33-0.86)	0.54 (0.29-0.99)
50-75 nmol/L	0.61 (0.45-0.82)	0.58 (0.40-0.85)
< 50 nmol/L	1.0 (ref)	1.0 (ref)

<sup>\*</sup>Separate conditional logistic regression models were run for each vitamin D variable, adjusting for HLA-DR3/4 status and the first two PCs indicating ancestry. For the early infancy vitamin D measures, we also adjusted for age and season of sample collection at the first visit.

<sup>†</sup>Average of all visits prior to and including the seroconversion visit.

<sup>‡</sup>Defined by the first 25(OH)D measure, occurring before 12 months of age in 360 cases and their 981 controls. There were 220 cases with multiple autoantibodies and their 603 controls with a first measure before 12 months of age.

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