

Supplementary Material

	AAb +	Non- progressors	Progressors	
Autoantibody n (%)	n=95	n=66	n=29	P-Value
GAD65 Aab	91 (95.8)	64 (97)	27 (93.1)	0.6
ICA512 Aab	59 (62.1)	38 (57.6)	21 (72.4)	0.3
MIAA	32 (33.7)	21 (31.8)	11 (37.9)	0.6
ZnT8 Aab	53 (55.8)	31 (47)	22 (75.9)	0.01
ICA	61 (64.2)	39 (59)	22 (75.9)	0.2
5 Aab	9 (9.5)	5 (7.6)	4 (13.8)	0.4
4 Aab	29 (30.5)	16 (24.2)	13 (44.8)	0.06
3 Aab	21 (22.1)	14 (21.1)	7 (24.1)	0.8
2 Aab	36 (37.9)	31 (47)	5 (17.2)	0.006

Supplementary Table 1. Autoantibody distribution (at time of eligibility).

	Stage 1 participants who progressed to type 1 diabetes	Stage 2 participants who progressed to type 1 diabetes	P-value
	n=11	n=18	
Demographics			
Age, years [Median (IQR)]	11.7 (4.5–24.8)	12.2 (9.8– 16.9)	0.58
Gender [Male, n (%)]	8 (72.7)	10 (55.6)	0.45
Race [White, n (%)]	11/11 (100)	16/17 (94.1)	1.0
BMI	21.0 ± 5.3	20.3 ± 5.8	0.74
Time to Dx, months [Median (IQR)]	19.5 (12.4–31.7)	16.8 (4.2–29)	0.29
HbA1c, %	5.1 ± 0.5	5.4 ± 0.4	0.06
CGM metrics			
Mean glucose, mg/dL	100.8 ± 7.9	104.6 ± 12.6	0.38
SD, mg/dL	19.9 ± 3.2	23.3 ± 6.1	0.09
CV, mg/dL	19.9 ± 4.0	22.1 ± 4.3	0.19
Maximum CGM glucose, mg/dL	175.2 ± 16.5	193.9 ± 41.1	0.16
Minimum CGM glucose, mg/dL	51.2 ± 17.5	54.7 ± 12.2	0.53
Mean Glucose Range, mg/dL	124.0 ± 25.9	139.2 ± 38.1	0.25
% Time CGM ≥ 120 mg/dL	17.8 ± 8.8	24.0 ± 16.5	0.26
% Time CGM ≥ 140 mg/dL	4.0 ± 2.5	10.4 ± 9.2	0.03
% Time CGM ≥ 160 mg/dL	0.8 ± 0.7	4.2 ± 4.0	0.01
CONGA	19.4 ± 3.0	22.3 ± 5.3	0.11
DySF	2.9 ± 1.8	4.6 ± 3.4	0.15
MAGE	40.9 ± 7.2	45.1 ± 11.4	0.28
MODD	19.3 ± 3.3	23.2 ± 5.8	0.05
Daytime CGM metrics			
Mean †day glucose, mg/dL	101.1 ± 7.5	105.7 ± 12.3	0.27
Maximum †day glucose value, mg/dL	173.5 ± 16.2	193.9 ± 41.1	0.13
Overnight CGM metrics			
Mean night glucose, mg/dL	99.9 ± 14.5	101.2 ± 15.6	0.83
Maximum night glucose value, mg/dL	148.9 ± 23.5	153.5 ± 32.5	0.69

Unless otherwise noted, values are the mean ± SD (continuous variables). †Values between 6 am and midnight. Abbreviations: IQR, interquartile range; BMI, body mass index; Dx, diagnosis.

Supplementary Table 2. Demographic data and CGM Measures of Interstitial Glucose Control and Variability. Stage 1 participants who progressed to type 1 diabetes vs. Stage 2 participants who progressed to type 1 diabetes.

% > 140	Sensitivity	95% CI	Specificity	95% CI	Likelihood ratio
> 0.1000	0.9310	0.7723 to 0.9915	0.1000	0.002529 to 0.4450	1.034
> 0.3000	0.9310	0.7723 to 0.9915	0.2000	0.02521 to 0.5561	1.164
> 0.5000	0.8966	0.7265 to 0.9781	0.4000	0.1216 to 0.7376	1.494
> 0.6500	0.8621	0.6834 to 0.9611	0.4000	0.1216 to 0.7376	1.437
> 0.7500	0.8621	0.6834 to 0.9611	0.5000	0.1871 to 0.8129	1.724
> 0.8500	0.8621	0.6834 to 0.9611	0.7000	0.3475 to 0.9333	2.874
> 1.050	0.8276	0.6423 to 0.9415	0.7000	0.3475 to 0.9333	2.759
> 1.600	0.7931	0.6028 to 0.9201	0.7000	0.3475 to 0.9333	2.644
> 2.250	0.7586	0.5646 to 0.8970	0.7000	0.3475 to 0.9333	2.529
> 2.550	0.7241	0.5276 to 0.8727	0.7000	0.3475 to 0.9333	2.414
> 3.000	0.6552	0.4567 to 0.8206	0.7000	0.3475 to 0.9333	2.184
> 3.700	0.6207	0.4226 to 0.7931	0.7000	0.3475 to 0.9333	2.069
> 4.050	0.5862	0.3894 to 0.7648	0.7000	0.3475 to 0.9333	1.954
> 4.150	0.5517	0.3569 to 0.7355	0.7000	0.3475 to 0.9333	1.839
> 4.400	0.5517	0.3569 to 0.7355	0.8000	0.4439 to 0.9748	2.759
> 4.700	0.5172	0.3253 to 0.7055	0.8000	0.4439 to 0.9748	2.586
> 5.000	0.4828	0.2945 to 0.6747	0.8000	0.4439 to 0.9748	2.414
> 5.450	0.4483	0.2645 to 0.6431	0.8000	0.4439 to 0.9748	2.241
> 6.200	0.4138	0.2352 to 0.6106	0.8000	0.4439 to 0.9748	2.069
> 6.900	0.3793	0.2069 to 0.5774	0.8000	0.4439 to 0.9748	1.897
> 8.050	0.3793	0.2069 to 0.5774	0.9000	0.5550 to 0.9975	3.793
> 9.050	0.3448	0.1794 to 0.5433	0.9000	0.5550 to 0.9975	3.448
> 9.550	0.3448	0.1794 to 0.5433	1.000	0.6915 to 1.000	
> 10.45	0.3103	0.1528 to 0.5083	1.000	0.6915 to 1.000	
> 11.20	0.2759	0.1273 to 0.4724	1.000	0.6915 to 1.000	
> 11.85	0.2414	0.1030 to 0.4354	1.000	0.6915 to 1.000	
> 13.95	0.2069	0.07994 to 0.3972	1.000	0.6915 to 1.000	
> 15.80	0.1724	0.05846 to 0.3577	1.000	0.6915 to 1.000	
> 16.65	0.1379	0.03889 to 0.3166	1.000	0.6915 to 1.000	
> 19.60	0.1034	0.02186 to 0.2735	1.000	0.6915 to 1.000	
> 23.45	0.06897	0.008464 to 0.2277	1.000	0.6915 to 1.000	
> 27.85	0.03448	0.0008726 to 0.1776	1.000	0.6915 to 1.000	

Supplementary Table 3. ROC analysis for %> 140 mg/dL. Cut-off values with their corresponding sensitivity and specificity of the test.

% > 160	Sensitivity	95% CI	Specificity	95% CI	Likelihood ratio
> 0.0500	0.7931	0.6028 to 0.9201	0.6000	0.2624 to 0.8784	1.983
> 0.2000	0.7241	0.5276 to 0.8727	0.6000	0.2624 to 0.8784	1.810
> 0.4000	0.7241	0.5276 to 0.8727	0.8000	0.4439 to 0.9748	3.621
> 0.5500	0.6552	0.4567 to 0.8206	0.8000	0.4439 to 0.9748	3.276
> 0.7000	0.6207	0.4226 to 0.7931	0.8000	0.4439 to 0.9748	3.103
> 0.9000	0.5517	0.3569 to 0.7355	0.8000	0.4439 to 0.9748	2.759
> 1.150	0.4828	0.2945 to 0.6747	0.8000	0.4439 to 0.9748	2.414
> 1.600	0.4138	0.2352 to 0.6106	0.8000	0.4439 to 0.9748	2.069
> 2.050	0.3793	0.2069 to 0.5774	0.8000	0.4439 to 0.9748	1.897
> 2.250	0.3793	0.2069 to 0.5774	0.9000	0.5550 to 0.9975	3.793
> 2.950	0.3448	0.1794 to 0.5433	0.9000	0.5550 to 0.9975	3.448
> 3.850	0.3103	0.1528 to 0.5083	1.000	0.6915 to 1.000	
> 4.800	0.2759	0.1273 to 0.4724	1.000	0.6915 to 1.000	
> 5.700	0.2414	0.1030 to 0.4354	1.000	0.6915 to 1.000	
> 6.000	0.2069	0.07994 to 0.3972	1.000	0.6915 to 1.000	
> 6.250	0.1724	0.05846 to 0.3577	1.000	0.6915 to 1.000	
> 7.000	0.1379	0.03889 to 0.3166	1.000	0.6915 to 1.000	
> 8.400	0.1034	0.02186 to 0.2735	1.000	0.6915 to 1.000	
> 10.30	0.06897	0.008464 to 0.2277	1.000	0.6915 to 1.000	
> 11.65	0.03448	0.0008726 to 0.1776	1.000	0.6915 to 1.000	

Supplementary Table 4. ROC analysis for % >160 mg/dL. Cut-off values with their corresponding sensitivity and specificity of the test.

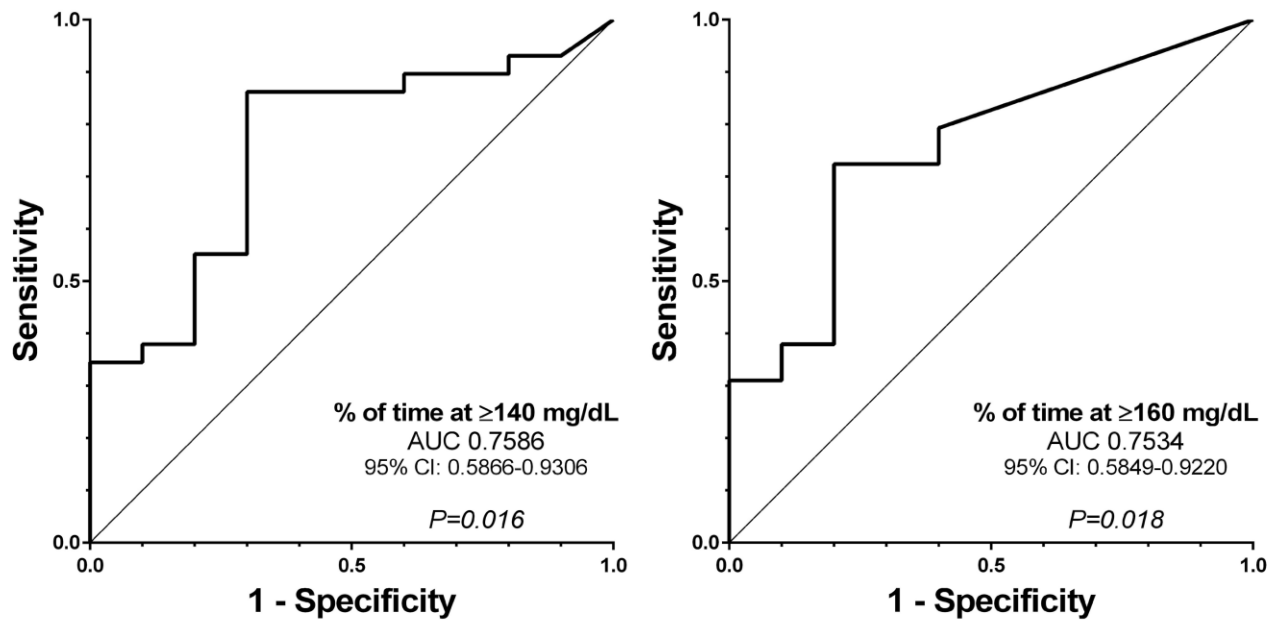
<u>Logistic regression model with % Time CGM \geq 140 mg/dL</u>		
	Coefficient	p-value
Intercept	-2.989	<i>0.014</i>
Gender	1.353	<i>0.014</i>
Number of Autoantibody positive	0.632	<i>0.009</i>
FDR	-0.306	0.743
% Time CGM \geq 140 mg/dL	0.083	<i>0.036</i>
Age at sampling	-0.0001	<i>0.047</i>
<u>Logistic regression model with % Time CGM \geq 160 mg/dL</u>		
	Coefficient	p-value
Intercept	-2.681	<i>0.022</i>
Gender	1.173	<i>0.026</i>
Number of Autoantibody positive	0.675	<i>0.004</i>
FDR	-0.485	0.589
% Time CGM \geq 160 mg/dL	0.011	0.153
Age at sampling	-0.0001	0.077

FDR, First-degree Relatives.

Supplementary Table 5. Logistic regression models.

Percentage of time	Cutoff	PPV	NPV	Sensitivity	Specificity
At \geq 140 mg/mL	5%	88%	35%	48%	80%
At \geq 140 mg/mL	8%	92%	33%	38%	90%
At \geq 160 mg/mL	5%	100%	32%	28%	100%
At \geq 160 mg/mL	8%	100%	29%	14%	100%

Abbreviations: PPV, positive predictive value; NPV, negative predictive value.



Supplementary Figure 1. Sensitivity and specificity for type 1 diabetes prediction were calculated for different baseline CGM cut-off points. ROC curves for percentage of time of spent at ≥ 140 mg/dL (left) and ≥ 160 mg/dL (right) supported the use of 5% and 8% as cut-off points without a significant loss of specificity (80-100%).