Online Appendix

Supplemental Table 1. Factors Associated with Sensor Use[*] ≥ 6 Days per Week During Weeks 22-26

	N	% ≥ 6 Days/Wk in Month 6	P-value Unadjusted/ Adjusted for Age Group	Model 1[†] OR	95% CI	P value	Model 2[‡] OR	95% CI	P value
Total	212	79 (37%)							
Age (years)			<0.001			<0.001			<0.001
8-<15	61	15 (25%)		1.0			1.0		
15-<25	73	14 (19%)		0.82	0.34, 1.96		0.72	0.31, 1.66	
≥ 25	78	50 (64%)		6.39	2.90, 14.08		6.12	2.84, 13.21	
Gender			0.85/0.90						
Female	119	45 (38%)							
Male	93	34 (37%)							
Race/Ethnicity	197	72 (37%)	0.44/0.67						
Non-White	15	7 (47%)							
White, Non-Hispanic									
Duration of Diabetes (years) [§]			<0.001/0.54						
< 5	47	12 (26%)							
5-<10	64	17 (27%)							
10-<20	54	20 (37%)							
≥20	47	30 (64%)							
Baseline Insulin Modality			0.04/0.07			0.25			
MDI	43	10 (23%)		1.0					
Pump	169	69 (41%)		1.76	0.74, 4.15				
Baseline A1c [§]			0.51/0.53						
<7.0%	58	19 (33%)							
7.0%- <8.0%	110	46 (42%)							
≥8.0%	44	14 (32%)							
Severe Hypoglycemia in Last 6 Months			0.02/0.008			0.01			0.008
None	190	76 (40%)		1.0					
≥1 Episode	22	3 (14%)		0.18	0.05, 0.70		0.16	0.04, 0.62	

Self-Reported Home Blood Glucose Meter Measurements per Day[§]			0.06/0.10		0.16
3-5	101	35 (35%)	1.0		
6-8	80	28 (35%)	0.95	0.46, 1.94	
≥ 9	31	16 (52%)	1.82	0.71, 4.66	

*One subject had self reported use imputed for missing sensor download.

[†]The multivariate logistic regression model includes all variables having age-adjusted P value <0.2.

[‡] Multivariate logistic regression model using backward selection keeping those variables with P value < 0.05.

[§] P Value obtained by treating as continuous variable.

Supplemental Table 2: CGM Use[*] and Sensor Glucose Values During First 4 Weeks as Predictors of Month 6 CGM Use (N=212)

	N	Sensor Use[†] ≥6 Days/Week During Month 6 # (%)	Odds Ratio (95% Confidence Interval)	P value [‡]
Sensor Use During First 7 Days[§]				0.004
0-5	30	4 (13%)	1.0	
6	21	1 (5%)	0.51 (0.05, 5.30)	
7	157	71 (45%)	4.58 (1.42, 14.81)	
Sensor Use During First 14 Days[‖]				<0.001
0-8	16	2 (13%)	1.0	
9-11	31	2 (6%)	0.37 (0.04, 3.17)	
12-13	30	3 (10%)	0.68 (0.09, 4.82)	
14	132	69 (52%)	4.76 (0.98, 23.13)	
Sensor Use During First 21 Days[¶]				<0.001
0-13	27	1 (4%)	1.0	
14-17	31	4 (13%)	2.68 (0.27, 27.07)	
18-20	39	11 (28%)	8.15 (0.95, 69.98)	
21	113	61 (54%)	16.16 (2.05, 127.46)	
Sensor Use During First 28 Days				<0.001
0-20	44	1 (2%)	1.0	
21-23	14	1 (7%)	3.18 (0.18, 57.96)	
24-26	32	8 (25%)	11.68 (1.34, 101.87)	
27-28	122	69 (57%)	33.66 (4.37, 258.97)	
Sensor Use During 15- 28 Days[‖]				<0.001
0-10	45	1 (2%)	1.0	
11-13	46	12 (26%)	12.05 (1.45, 99.97)	
14	118	63 (53%)	29.91 (3.87, 231.04)	
% of Day 71-180 mg/dL During First Month[#]				0.22
26-<55%	64	17 (27%)	1.0	
55-<70%	94	35 (37%)	1.65 (0.70, 3.92)	
70-89%	53	27 (51%)	1.20 (0.44, 3.31)	
% of Day ≤70 mg/dL During First Month[#]				0.05
5-26%	71	20 (28%)	1.0	
2-<5%	62	23 (37%)	2.02 (0.82, 4.94)	
0-<2%	78	36 (46%)	1.17 (0.48, 2.86)	
% of Day >180 mg/dL During First Month[#]				0.53
40-73%	68	19 (28%)	1.0	
25-<40%	89	33 (37%)	1.48 (0.56, 3.96)	
4-<25%	54	27 (50%)	1.06 (0.44, 2.54)	

[*]CGM use was calculated by taking the average of the days with available downloads.

[†]One subject had self reported use imputed for missing sensor download.

[‡] P Values are from logistic regression model treating CGM use as continuous variable, adjusting for age and whether subject had a severe hypoglycemic event in the 6 months prior to baseline. Categories were created for presentation purposes.

[§]4 Subjects are missing sensor data.

[‖]3 Subjects are missing sensor data.

[¶]2 Subjects are missing sensor data.

[#]One subject is missing glucose data because at least 24 hours of glucose data was required to be included in analysis.

Supplemental Table 3: CGM Use During First 4 Weeks as Predictor of Month 6 CGM Use* by Age Group (N=212)

	N	≥ 6 Days/Wk in Month 6 #(%)
Sensor Use During First 28 Days		
Age ≥25		
7-20 Days	5	1 (20%)
21-23 Days	2	0
24-26 Days	7	3 (43%)
27-28 Days	64	46 (72%)
Age 15-<25		
7-20 Days	25	0
21-23 Days	8	1 (13%)
24-26 Days	13	4 (31%)
27-28 Days	27	9 (33%)
Age 8-<15		
7-20 Days	14	0
21-23 Days	4	0
24-26 Days	12	1 (8%)
27-28 Days	31	14 (45%)

*One subject had self reported use imputed for missing sensor download.

Supplemental Table 4. Glycemic Indices[*] Stratified by Daytime vs. Nighttime[†] (Website)

	Age ≥25 Years				Age 15-24 Years				Age 8-14 ears			
	Day		Night		Day		Night		Day		Night	
	Baseline (Blinded)	*Month 6*	*Baseline (Blinded)*	*Month 6*	*Baseline (Blinded)*	*Month 6*	*Baseline (Blinded)*	*Month 6*	*Baseline (Blinded)*	*Month 6*	*Baseline (Blinded)*	*Month 6*
	N = 74	N = 73	N = 74	N = 73	N =55	N = 55	N = 55	N = 55	N = 44	N = 44	N = 44	N = 44
Mean Glucose mg/dL)	157 ± 25	152 ± 19	158 ± 35	154 ± 22	166 ± 31	174 ± 31	162 ± 34	169 ± 33	172 ± 29	169 ± 28	170 ± 38	170 ± 33
Min/Day 71-180 mg/dL-Median	691	735	205	230	628	578	198	199	605	624	180	204
Hypoglycemia-Median												
Min/Day ≤70 mg/dL	41	32	12	11	67	40	25	10	33	32	7	4
Min/Day ≤60 mg/dL	15	12	2	4	28	16	12	4	14	8	0	0
Min/Day ≤50 mg/dL	4	3	0	1	9	2	0	0	0	1	0	0
Area under the Curve[‡]	0.3	0.2	0.2	0.3	0.6	0.3	0.6	0.3	0.3	0.2	0.1	0.0
LBGI[§]	0.9	0.8	0.8	0.8	1.1	0.9	1.4	0.8	0.9	0.8	0.5	0.6
Hyperglycemia-Median												
Min/Day>180 mg/dL	309	280	118	110	384	454	119	136	420	425	152	143
Min/Day>200 mg/dL	202	180	84	76	278	342	83	95	334	329	122	104
Min/Day>250 mg/dL	84	53	21	17	115	135	44	34	167	138	48	51
Area under the Curve[‖]	14.8	11.4	13.6	13.1	20.4	24.3	19.4	21.4	25.4	22.1	26.4	24.5
HBGI[¶]	7.0	5.6	6.9	6.6	8.2	9.9	8.2	7.8	9.7	8.8	9.7	8.9

[*]Subjects had to have at least 18 hours of glucose data to be included in daytime analysis and 6 hours for nighttime analysis.
[†]Night time was defined as the hours between 12 AM and 6 AM.
[‡]Total area below 70 mg/dL; reflects both percentage and severity of glucose values in the hypoglycemic range.
[§]Low Blood Glucose Index (13).

[‖]Total area above 180 mg/dL; reflects both percentage and severity of glucose values in the hyperglycemic range.
[¶]High Blood Glucose Index (13).

Supplemental Table 5. Glycemic Indices[*] Stratified by Baseline A1c (Website)

	Age ≥25 Years					
	A1c <7.0%			*A1c ≥7.0%*		
	Baseline (Blinded)*	Month 6	P value	*Baseline (Blinded)*	Month 6	P Value
	N = 27	N = 27		N = 47	N = 47	
Mean Glucose (mg/dL)	142 ± 25	144 ± 18		165 ± 21	157 ± 17	
Min/Day 71-180 mg/dL -Median	946	1019	0.06	863	967	0.001
Hypoglycemia-Median						
Min/Day ≤70 mg/dL	104	80	0.005	35	39	0.44
Min/Day ≤60 mg/dL	45	32		10	10	
Min/Day ≤50 mg/dL	12	9		4	3	
Area over the Curve[†]	0.8	0.5		0.2	0.2	
LBGI[‡]	1.9	1.3		0.7	0.7	
Hyperglycemia-Median						
Min/Day >180 mg/dL	300	328	0.85	541	415	0.009
Min/Day >200 mg/dL	219	218		348	286	
Min/Day >250 mg/dL	82	56		133	86	
Area under the Curve[§]	12.2	10.3		17.5	13.6	
HBGI[‖]	5.2	5.0		7.7	6.3	
	Age 15-24 Years					
	N = 13	N = 13		N =42	N =42	
Mean Glucose (mg/dL)	145 ± 23	154 ± 27		171 ± 26	179 ± 26	
Min/Day 71-180 mg/dL -Median	995	949	0.68	816	755	0.16
Hypoglycemia-Median						
Min/Day ≤70 mg/dL	134	86	0.22	83	51	0.008
Min/Day ≤60 mg/dL	66	26		46	19	
Min/Day ≤50 mg/dL	32	6		18	2	
Area over the Curve[†]	1.2	0.5		0.7	0.3	
LBGI[‡]	2.5	1.4		1.4	0.9	
Hyperglycemia-Median						
Min/Day >180 mg/dL	397	325	0.54	529	589	0.04
Min/Day >200 mg/dL	273	233		415	454	
Min/Day >250 mg/dL	106	80		170	229	
Area under the Curve[§]	12.3	11.5		23.1	27.0	
HBGI[‖]	5.4	5.0		8.7	10.3	
	Age 8-14 Years					
	N =12	N =12		N =32	N =32	
Mean Glucose (mg/dL)	161 ± 33	158 ± 35		176 ± 27	173 ± 25	
Min/Day 71-180 mg/dL -Median	841	814	0.47	797	812	0.29
Hypoglycemia-Median						
Min/Day ≤70 mg/dL	74	50	0.85	54	33	0.58
Min/Day ≤60 mg/dL	27	15		18	10	
Min/Day ≤50 mg/dL	2	2		2	1	
Area over the Curve[†]	0.4	0.2		0.3	0.2	
LBGI[‡]	1.0	1.1		0.9	0.7	

Hyperglycemia-						
Median						
Min/Day >180 mg/dL	397	459	0.38	572	568	0.63
Min/Day >200 mg/dL	288	371		474	452	
Min/Day >250 mg/dL	97	130		227	202	
Area under the Curve[§]	13.1	17.5		27.8	24.5	
HBGI[‖]	5.7	7.4		10.4	9.6	

*Subjects had to have at least 24 hours of glucose data to be included in analysis.

†Total area below 70 mg/dL; reflects both percentage and severity of glucose values in the hypoglycemic range.

‡Low Blood Glucose Index (13).

§Total area above 180 mg/dL; reflects both percentage and severity of glucose values in the hyperglycemic range.

‖High Blood Glucose Index (13).

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Clinical Centers: Listed in order of number of patients enrolled with clinical center name, city, and state. Personnel are listed as (PI) for Principal Investigator, (I) for co-Investigator and (C) for Coordinators:

Diabetes Care Center, University of Washington, Seattle, WA: Irl B. Hirsch, M.D. (PI); Lisa K. Gilliam, M.D., Ph.D. (I); Kathy Fitzpatrick, R.N., M.N., C.D.E. (C); Dori Khakpour, R.D., C.D., C.D.E. (C); Department of Pediatrics, *Yale University School of Medicine, New Haven, CT:* Stuart A. Weinzimer, M.D. (PI); William V. Tamborlane, M.D. (I); Brett Ives, M.S.N., A.P.R.N. (C); Joan Bosson-Heenan (C); *Adult Section, Joslin Diabetes Center, Boston, MA:* Howard Wolpert, M.D. (PI); Greeshma Shetty, M.D. (I); Astrid Atakov-Castillo (C); Judith Giusti, M.S., R.D., L.D.N., C.D.E. (C); Stacey O'Donnell, R.N., C.D.E. (C); Suzanne Ghiloni, R.N., C.D.E. (C); *Atlanta Diabetes Associates, Atlanta, GA:* Bruce W. Bode, M.D. (PI); Kelli O'Neil, C.D.E. (C); Lisa Tolbert, R.N., M.N., C.D.E. (C); *Nemours Children's Clinic, Jacksonville, FL:* Tim Wysocki, Ph.D. (co-PI); Larry A. Fox, M.D. (co-PI); Nelly Mauras, M.D. (I); Kimberly Englert, R.N. (C); Joe Permuy, M.S.N., A.R.N.P. (C); *Division of Pediatric Endocrinology and Diabetes, Stanford University, Stanford, CA:* Bruce Buckingham, M.D. (PI); Darrell M. Wilson, M.D. (I); Jennifer Block, R.N., C.D.E. (C); Kari Benassi, R.N., N.P. (C); *Department of Pediatrics, University of Iowa Carver College of Medicine, Iowa City, IA:* Eva Tsalikian, M.D. (PI); Michael Tansey, M.D. (I); Debra Kucera, A.R.N.P., C.P.N.P. (C); Julie Coffey, A.R.N.P., C.P.N.P. (C); Joanne Cabbage (C); *Pediatric Adolescent, and Young Adult Section, Joslin Diabetes Center, Boston, MA:* Lori Laffel, M.D., M.P.H., (PI), Kerry Milaszewski, R.N., C.D.E. (C); Katherine Pratt (C); Elise Bismuth, M.D., M.S., (C); Joyce Keady, M.S.N., C.P.N.P. (C); Margie Lawlor, M.S., C.D.E. (C); *Barbara Davis Center for Childhood Diabetes, University of Colorado, Denver, CO*: H. Peter Chase, M.D. (PI); Rosanna Fiallo-Scharer, M.D. (I); Paul Wadwa, M.D. (I); Laurel Messer, R.N., C.D.E. (C); Victoria Gage, R.N. (C); Patricia Burdick (C); *Departments of Pediatric Endocrinology and Research and Evaluation, Kaiser Permanente, San Diego and Pasadena, CA:* Jean M. Lawrence, Sc.D., M.P.H., M.S.S.A. (co-PI); Robert Clemons, M.D. (co-PI); Michelle Maeva, R.N., C.D.E. (C); Bonnie Sattler, M.S., R.D. (C); *Coordinating Center:* Jaeb Center for Health Research, Tampa, FL: Roy W. Beck, M.D., Ph.D.; Katrina J. Ruedy, M.S.P.H.; Craig Kollman, Ph.D.; Dongyuan Xing, M.P.H.; Judy Jackson

University of Minnesota Central Laboratory: Michael Steffes, M.D., Ph.D., Jean M. Bucksa, C.L.S., Maren L. Nowicki, C.L.S., Carol Van Hale, C.L.S., Vicky Makky, C.L.S.

Cost-effectiveness investigators: *National Opinion Research Center, University of Chicago:* Michael O'Grady, Ph.D.; Elbert Huang, M.D., M.P.H.; Anirban Basu, Ph.D.; David O. Meltzer, M.D., Ph.D.; Lan Zhao. Ph.D. *University of Michigan:* Joyce Lee, M.D., M.P.H.

Juvenile Diabetes Research Foundation, Inc.: Aaron J. Kowalski, Ph.D.

Operations Committee: Lori Laffel, M.D., M.P.H. (co-chair), William V. Tamborlane, M.D. (co-chair), Roy W. Beck, M.D., Ph.D., Aaron J. Kowalski, Ph.D., Katrina J. Ruedy, M.S.P.H.

Data and Safety Monitoring Board: Ruth S. Weinstock, M.D., Ph.D. (chair), Barbara J Anderson, Ph.D.; Davida Kruger, M.S.N., A.P.R.N.; Lisa LaVange, Ph.D.; Henry Rodriguez, M.D.