

SUPPLEMENTARY TABLE S6. STANDARD BOLUS MEAL OUTCOMES STRATIFIED BY BASELINE GLUCOSE

	Baseline glucose ≤ 130 mg/dL		Baseline glucose 131–180 mg/dL		Baseline glucose ≥ 181 mg/dL	
	Standard bolus delivered with meal	Standard bolus delivered before meal	Standard bolus delivered with meal	Standard bolus delivered before meal	Standard bolus delivered with meal	Standard bolus delivered before meal
Number of breakfasts	27	11	11	18	10	9
Meal and insulin delivery characteristics						
Meal size (g of CHO)	68 (60, 80)	70 (61, 80)	65 (63, 75)	63 (53, 75)	67 (60, 78)	60 (51, 72)
Normalized meal size (g of CHO/kg if body weight)	1.00 (0.99, 1.00)	1.00 (0.98, 1.02)	0.99 (0.98, 1.00)	1.00 (0.98, 1.00)	0.98 (0.95, 0.99)	0.99 (0.95, 1.00)
Minutes from bolus to start of meal	0 (-2, +1)	-15 (-17, -14)	-1 (-4, 0)	-15 (-17, -14)	-1 (-3, 0)	-15 (-16, -14)
Meal bolus size (U)	5.9 (5.2, 8.8)	7.6 (5.1, 10.3)	5.6 (4.4, 6.0)	6.0 (4.9, 8.3)	8.5 (6.0, 10.8)	5.4 (4.1, 5.8)
Normalized meal bolus size (unitless) ^a	0.95 (0.93, 0.96)	0.96 (0.95, 0.96)	0.97 (0.95, 0.97)	0.96 (0.95, 0.97)	0.96 (0.95, 0.96)	0.96 (0.96, 0.97)
Cumulative basal insulin delivery at 4 h (% of open-loop basal)	86% (53%, 123%)	72% (53%, 119%)	134% (85%, 204%)	113% (78%, 162%)	118% (95%, 158%)	145% (119%, 166%)
Cumulative basal plus bolus insulin delivery at 4 h (U) ^b	9.9 (7.6, 11.8)	11.5 (8.6, 14.0)	10.8 (6.4, 12.7)	11.3 (10.0, 13.4)	13.6 (10.8, 17.4)	10.7 (8.6, 16.8)
Glycemic outcomes						
Metrics at start of meal						
Baseline glucose	104 (93, 119)	112 (105, 122)	170 (147, 174)	157 (140, 170)	202 (197, 209)	196 (191, 211)
Metrics over 4 h						
Number of YSI measurements	11 (11, 11)	11 (11, 11)	11 (11, 11)	11 (11, 11)	11 (10, 11)	11 (11, 11)
% of meals with a YSI value						
≤ 60 mg/dL	0	1 (9%)	0	0	0	0
≤ 70 mg/dL	2 (7%)	3 (27%)	0	0	0	0
> 180 mg/dL	20 (74%)	7 (64%)	11 (100%)	17 (94%)	10 (100%)	9 (100%)
> 250 mg/dL	11 (41%)	2 (18%)	7 (64%)	10 (56%)	8 (80%)	7 (78%)
> 300 mg/dL	4 (15%)	0	5 (45%)	7 (39%)	5 (50%)	5 (56%)
> 400 mg/dL	0	0	0	0	1 (10%)	0
% of YSI values						
≤ 70 mg/dL	0% (0%, 0%)	0% (0%, 9%)	0% (0%, 0%)	0% (0%, 0%)	0% (0%, 0%)	0% (0%, 0%)
71–180 mg/dL	45% (27%, 91%)	55% (27%, 91%)	18% (0%, 64%)	26% (9%, 60%)	0% (0%, 9%)	0% (0%, 18%)
> 180 mg/dL	55% (0%, 73%)	45% (0%, 64%)	82% (36%, 100%)	74% (40%, 91%)	100% (91%, 100%)	100% (82%, 100%)
Mean glucose (mg/dL)	177 (133, 221)	162 (112, 184)	236 (173, 259)	216 (173, 250)	260 (218, 274)	262 (220, 280)
Glucose CV	23% (19%, 28%)	24% (22%, 35%)	22% (14%, 23%)	20% (17%, 22%)	16% (13%, 19%)	16% (10%, 18%)
Nadir (mg/dL)	102 (94, 125)	93 (70, 111)	160 (130, 194)	143 (129, 177)	195 (152, 208)	187 (170, 196)
Peak (mg/dL)	233 (175, 283)	216 (174, 246)	281 (210, 329)	269 (239, 312)	309 (261, 334)	302 (252, 324)
Excursion (peak minus baseline)	131 (82, 171)	100 (57, 128)	106 (58, 185)	113 (75, 155)	99 (56, 127)	91 (61, 121)
Area under the curve 180 (mg/dL/min) ^c	18 (0, 48)	8 (0, 26)	59 (7, 79)	42 (15, 73)	80 (38, 94)	91 (41, 100)
% meals with a						
Hypoglycemia red light	6 (22%)	3 (27%)	1 (9%)	2 (11%)	1 (10%)	0
Hypoglycemic treatment interventions ^d	0	1 (9%)	0	0	0	0
Hyperglycemic treatment interventions ^d	0	0	1 (9%)	0	0	0

(continued)

SUPPLEMENTARY TABLE S6. (CONTINUED)

	Baseline glucose ≤ 130 mg/dL		Baseline glucose 131–180 mg/dL		Baseline glucose ≥ 181 mg/dL	
	Standard bolus delivered with meal	Standard bolus delivered before meal	Standard bolus delivered with meal	Standard bolus delivered before meal	Standard bolus delivered with meal	Standard bolus delivered before meal
Metrics at 4 h	158 (114, 191)	170 (133, 193)	203 (149, 219)	162 (133, 211)	196 (152, 213)	204 (193, 237)
Glucose at 4 h						
% of meals with a YSI value at 4 h						
≤ 60 mg/dL	0	0	0	0	0	0
≤ 70 mg/dL	0	0	0	0	0	0
71–180 mg/dL	19 (70%)	7 (64%)	4 (36%)	11 (61%)	3 (30%)	2 (22%)
> 180 mg/dL	8 (30%)	4 (36%)	7 (64%)	7 (39%)	7 (70%)	7 (78%)
> 250 mg/dL	1 (4%)	0	1 (9%)	2 (11%)	1 (10%)	2 (22%)
> 300 mg/dL	1 (4%)	0	1 (9%)	0	0	0
> 400 mg/dL	0	0	0	0	0	0

Data are median (25th, 75th percentiles) or *n* (%). Values shown exclude missing baseline measurements.

^aBolus_{NORM} = (bolus_{ACTUAL} × carbohydrate ratio)/meal size.

^bIncludes the meal boluses, correction boluses, and insulin delivered by the controller.

^cArea under the curve calculated for each meal and divided by the time.

^dHypoglycemic treatments preceded by a red light were not counted as an intervention, and YSI values were not imputed.

CHO, carbohydrate; CV, coefficient of variation.