

SUPPLEMENTARY ONLINE APPENDIX

Study flow chart

Figure S1 shows the flow of participants through the study.

Additional study results

Table S1 shows study outcomes based on sensor glucose levels.

Figure S2 shows Clarke error grid analysis of Dexcom™ G4 continuous glucose monitor.

Figure S1. Flow of participants (CONSORT Flow Diagram) through the study comparing closed-loop therapy using diluted insulin and closed-loop using standard insulin strength

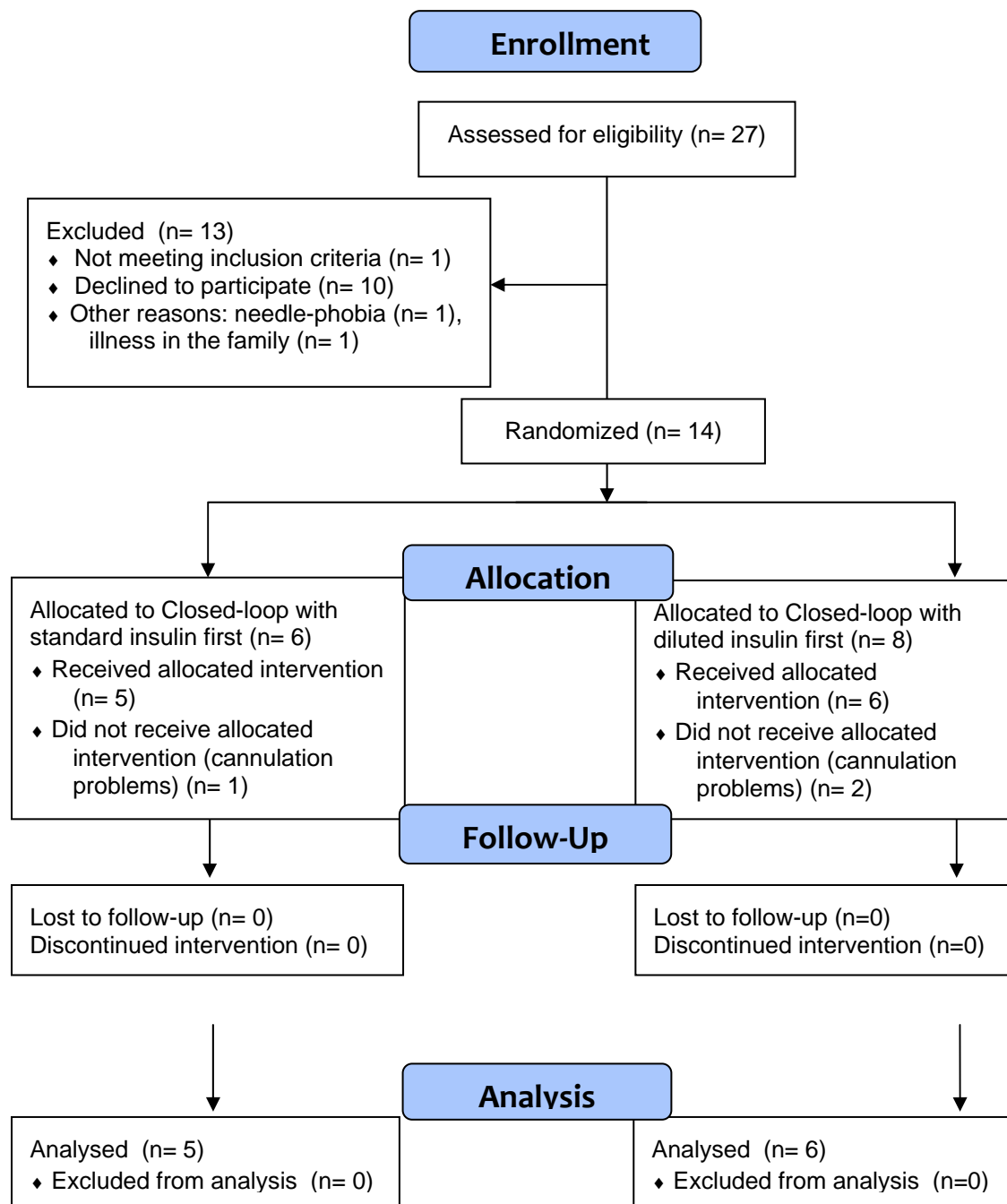


Table S1. Study outcome measures from 21:00 until 8:00am the next day based on sensor glucose levels. Data are mean (SD) or median (interquartile range).

Outcome	Closed-loop with standard insulin (n=11)	Closed-loop with diluted insulin (n=11)	p value
Primary outcome			
Time in target 70–145mg/dl (%)	71 (51, 78)	78 (68, 94)	0.131
Secondary outcomes			
Mean glucose (mg/dl)	126 (30)	121 (22)	0.573
Time in target 70–180mg/dl (%)	89 (77, 95)	82 (61, 91)	0.131
<i>Hypoglycemia:</i>			
Less than 70mg/dl (%)	8.0 (2.4, 17.7)	1.8 (0.0, 4.8)	0.053
Less than 63mg/dl (%)	4.1 (0.8, 11.4)	0.0 (0.0, 0.0)	0.028
Low blood glucose index (unitless)	1.7 (1.2, 3.3)	1.0 (0.7, 1.4)	0.026
<i>Hyperglycemia:</i>			
Greater than 145mg/dl (%)	14.5 (11.8, 32.4)	17.4 (2.1, 32.3)	0.594
Greater than 180mg/dl (%)	2.0 (0.0, 21.3)	8.8 (0.0, 14.6)	0.799
<i>Glucose variability:</i>			
SD of glucose (mg/dl)	35 (18, 44)	33 (27, 57)	0.213
CV of glucose (%)	32 (27, 46)	30 (17, 34)	0.131
MAGE (mg/dl)	100 (56, 141)	77 (26, 102)	0.333
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Figure S2. The Clarke error grid evaluating Dexcom™ G4 continuous glucose monitor. During the study, 98.6% of the values were in zone A+B, 0% in zone C, 1.4% in zone D and 0% in zone E.

