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The JDRF Continuous Glucose Monitoring Study Group

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 Sibayan, M.P.H.; *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.

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Supplementary Table 1. Baseline characteristics according to whether a severe hypoglycemia (SH) event occurred [#]

	Total [¶]	No SH Events During Study	≥1 SH Event During Study
	N=436	N=382	N=54
Age *(years, Mean ± SD)*	25.6 ± 15.9	25.0 ± 15.5	29.6 ± 18.3
8 to 14 years	138 (32%)	124 (32%)	14 (26%)
15 to 24 years	138 (32%)	121 (32%)	17 (31%)
≥25 years	160 (37%)	137 (36%)	23 (43%)
Diabetes duration *(years, Mean ± SD)*	13.7 ± 11.8	13.3 ± 11.7	16.6 ± 11.9
Gender			
Female	237 (54%)	201 (53%)	36 (67%)
Male	199 (46%)	181 (47%)	18 (33%)
# Severe hypoglycemia events in 6 months prior to study *(self-reported)*			
0	400 (92%)	361 (95%)	39 (72%)
1	24 (6%)	17 (4%)	7 (13%)
≥ 2	12 (3%)	4 (1%)	8 (15%)
Home blood glucose meter measurements per day *(self-reported)* [*] Median (25th, 75th percentiles)	6 (5,8)	6 (5,8)	6 (5,8)
≤5	135 (31%)	112 (29%)	23 (43%)
6-8	179 (41%)	164 (43%)	15 (28%)
>8	69 (16%)	60 (16%)	9 (17%)
Insulin delivery			
Pump	356 (82%)	313 (82%)	43 (80%)
Multiple Daily Injections	80 (18%)	69 (18%)	11 (20%)
HbA1c *(%, mean ± SD)*	7.4 ± 0.9	7.4 ± 0.9	7.3 ± 0.9
N (%)			
<7.0%	127 (29%)	111 (29%)	16 (30%)
7.0%-<8.0%	197 (45%)	169 (44%)	28 (52%)
≥ 8.0%	112 (26%)	102 (27%)	10 (19%)
Hypoglycemia Fear Scale Score[†]	28.1 ± 17.3	27.5 ± 17.0	32.8 ± 18.9
(mean ± SD)			
Baseline % CGM values ≤70 mg/dL[‡]			
Median (25th, 75th percentiles)	4% (1%, 9%)	4% (1%, 9%)	8% (3%, 11%)
None	25 (6%)	23 (6%)	2 (4%)

<5%	207 (47%)	188 (49%)	19 (35%)
5%-<15%	160 (37%)	134 (35%)	26 (48%)
≥15%	44 (10%)	37 (10%)	7 (13%)
Coefficient of Variation (CV)			
Median (25th, 75th percentiles)	39% (35%, 45%)	39% (34%, 45%)	40% (37%, 46%)
0-<35%	116 (27%)	108 (28%)	8 (15%)
35%-<40%	115 (26%)	100 (26%)	15 (28%)
40%-<45%	88 (20%)	74 (19%)	14 (26%)
≥45%	117 (27%)	100 (26%)	17 (31%)

P-value associated with each factor as listed in table 1

¶ Column percentages may not add up to 100% due to rounding.

* Self-reported number of HGM tests per day. Data collected after study initialization and are therefore missing for 53 subjects.

† Hypoglycemia Fear Questionnaire (16) consists of 15 5-point Likert scale items, with scores scaled to a 0 to 100 range. Higher score denotes more fear of hypoglycemia. Missing for 5 subjects.

‡ CGM data based on blinded use at baseline for approximately one week prior to randomization. Results were similar for hypoglycemic AUC and LBGI (data not shown) (3).

Supplementary Table 2. Sensitivity, specificity, false alarm rates and positive predictive value of CGM-measured hypoglycemia on one day (AUC, LBGI and whether glucose ≤ 54 mg/dL for at least 30 consecutive minutes) for the occurrence of severe hypoglycemia (SH) on the following day

Hypoglycemic AUC based on CGM readings on prior day	# of Days			Sensitivity[*]	Specificity[†]	False Alarm[‡]	Positive Predictive Value[§]
	Total	No SH	SH				
≤0	2,177	2,166	11				
>0	3,118	3,102	16	59%	41%	99.5%	0.5%
≤0.25	3,230	3,216	14				
>0.25	2,065	2,052	13	48%	61%	99.4%	0.6%
≤1.0	4,210	4,193	17				
>1.0	1,085	1,075	10	37%	80%	99.1%	0.9%
≤2.0	4,726	4,708	18				
>2.0	569	560	9	33%	89%	98.4%	1.6%
All	**5,295**	**5,268**	**27**				

LBGI based on CGM data on prior day	# of Days			Sensitivity[*]	Specificity[†]	False Alarm[‡]	Positive Predictive Value[§]
	Total	No SH	SH				
≤1.0	2,904	2,891	13				
>1.0	2,391	2,377	14	52%	55%	99.4%	0.6%
≤2.5	4,280	4,263	17				
>2.5	1,015	1,005	10	37%	81%	99.0%	1.0%
≤5.0	5,005	4,984	21				
>5.0	290	284	6	22%	95%	97.9%	2.1%
All	**5,295**	**5,268**	**27**				

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30 consecutive minutes ≤54 mg/dL base on CGM data on prior day‖	# of Days			Sensitivity*	Specificity†	False Alarm‡	Positive Predictive
	Total	No SH	SH				
No	4,473	4,454	19				
Yes	822	814	8	30%	85%	99.0%	1.0%
All	5,295	5,268	27				

*- Sensitivity= Proportion of true SH events where the CGM indices correctly predicted the prior days as positive.

†- Specificity= Proportion of days without SH where the CGM indices correctly predicted the prior days as negative.

‡- False Alarm= Proportion of days with CGM indices predicted as positive where there were no SH in the following days.

§- Positive Predictive Value= Proportion of days with CGM indices predicted as positive where there were SH events in the following days (this is 100% minus the false alarm rate).

‖- Davis et al., Diabetes, 2000; 49: 1897-1903(18)

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Supplementary Figure 1. The incidence of severe hypoglycemia in this study was substantially lower than that of the intensive treatment group in the Diabetes Control and Complications Trial (61.2/100 person-years). HbA1c values in x-axis were calculated by averaging monthly HbA1c during mean of 6.5 follow-up years in DCCT and quarterly HbA1c in JDRT CGM RCT during 1 year follow-up period.

Rate of Severe Hypoglycemia Compared With DCCT

JDRF CGM RCT:
a. A1c <7.0% and age 8-14 years (N=34)
b. A1c <7.0% and age 15-24 years (N=31)
c. A1c <7.0% and age ≥25 years (N=83)
d. A1c 7.0%-<8.0% and age 8-14 years (N=71)
e. A1c 7.0%-<8.0% and age 15-24 years (N=72)
f. A1c 7.0%-<8.0% and age ≥25 years (N=71)
g. A1c ≥8.0% and age 8-14 years (N=33)
h. A1c ≥8.0% and age 15-24 years (N=35)
i. A1c ≥8.0% and age ≥25 years (N=6)

DCCT: Curve taken from NEJM 1993;329:977