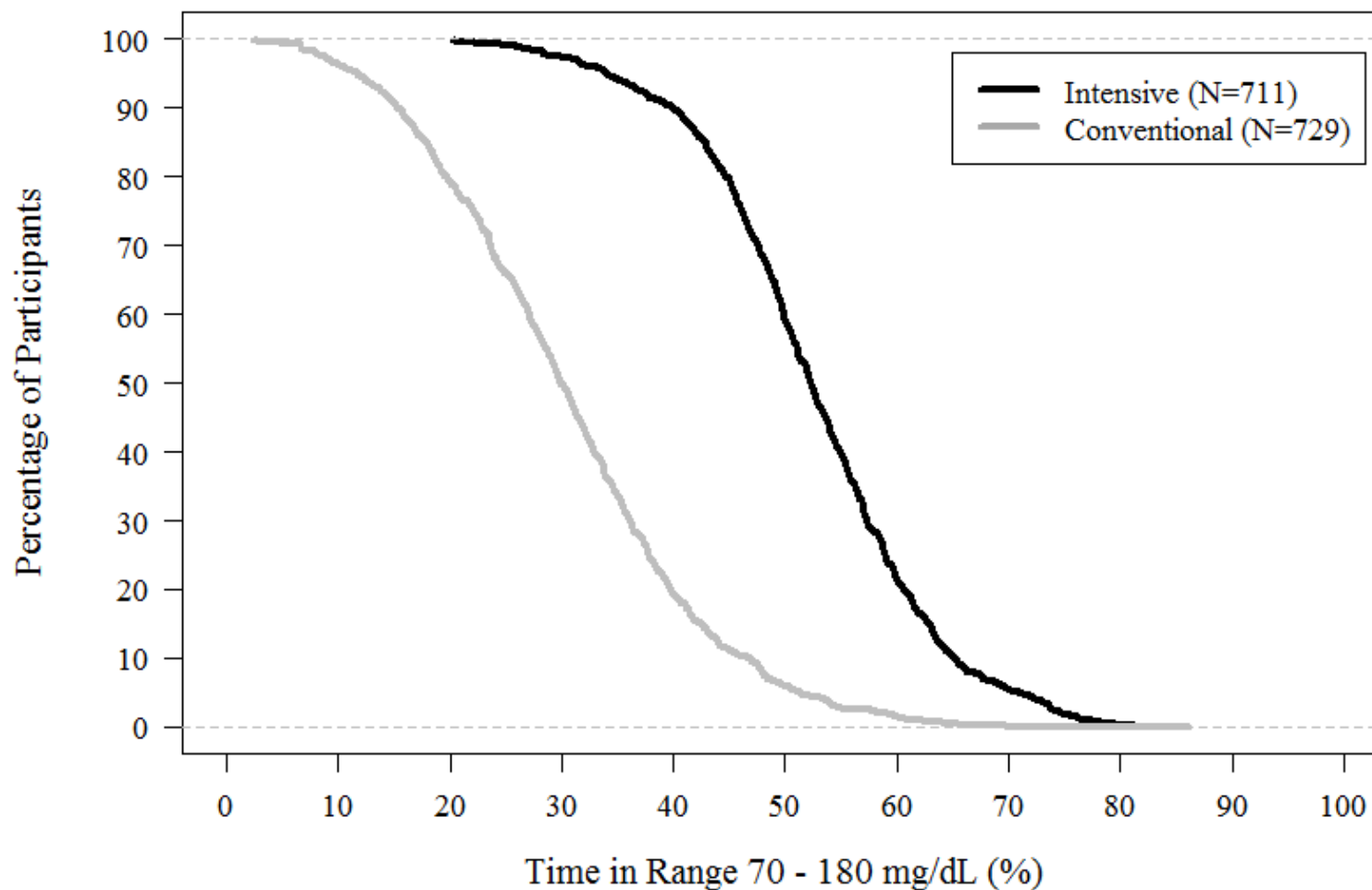


SUPPLEMENTARY DATA

**Supplemental Figure S1. Cumulative distribution of TIR values according to treatment group.** For any TIR level, the percentage of participants in each group with that TIR level or higher can be determined by selecting the TIR level on the x-axis and then identifying the y-axis value of the intersecting point on the curve.



SUPPLEMENTARY DATA

**Supplemental Table S1. Summary of Glucose Metrics according to Complication Development**

	Developed retinopathy during the study?		Developed microalbuminuria during the study?	
	Yes	No	Yes	No
Overall	N=271	N=1169	N=116	N=1167
% Time in range	32 ± 15	44 ± 15	32 ± 14	42 ± 16
Mean glucose (mg/dL)	233 ± 54	188 ± 50	232 ± 55	192 ± 52
% Time >180 mg/dL	62 ± 18	46 ± 20	61 ± 17	48 ± 20
% Time >250 mg/dL	43 (28, 55)	21 (11, 37)	40 (28,52)	23 (12, 40)
AUC 180 mg/dL	76 (49, 103)	36 (20, 64)	74 (49, 101)	39 (21, 70)
HBGI	22 (15, 29)	12 (7, 19)	22 (15, 28)	13 (8, 21)
A1C (%)	9.3 ± 1.4	7.9 ± 1.3	9.1 ± 1.4	8.1 ± 1.4
Primary Cohort	N=107	N=619	N=36	N=662
% Time in range	29 ± 14	43 ± 16	28 ± 16	42 ± 16
Mean glucose (mg/dL)	243 ± 52	191 ± 52	250 ± 61	196 ± 54
% Time >180 mg/dL	65 ± 17	47 ± 20	65 ± 18	49 ± 21
% Time >250 mg/dL	45 (32, 58)	21 (11, 40)	44 (34, 59)	24 (12, 43)
AUC 180 mg/dL	83 (57, 108)	37 (19, 68)	79 (61, 119)	40 (20, 75)
HBGI	24 (18, 30)	12 (7, 20)	23 (18, 32)	13 (8, 22)
A1C (%)	9.6 ± 1.3	8.0 ± 1.4	9.4 ± 1.4	8.2 ± 1.5
Secondary Cohort	N=164	N=550	N=80	N=505
% Time in range	34 ± 15	44 ± 14	33 ± 12	43 ± 15
Mean glucose (mg/dL)	226 ± 54	185 ± 48	224 ± 50	188 ± 48
% Time >180 mg/dL	59 ± 19	45 ± 18	59 ± 17	46 ± 19
% Time >250 mg/dL	41 (25, 52)	20 (11, 35)	38 (26, 50)	22 (12, 37)
AUC 180 mg/dL	71 (43, 97)	34 (20, 61)	68 (45, 96)	37 (21, 66)
HBGI	21 (14, 27)	11 (8, 19)	20 (14, 27)	12 (8, 19)
A1C (%)	9.0 ± 1.4	7.8 ± 1.3	9.0 ± 1.4	8.0 ± 1.3

Values are mean ± SD or median (quartiles) as appropriate for the distribution.

SUPPLEMENTARY DATA

**Supplemental Table S2. Hazard Ratios for Development of Retinopathy and Microalbuminuria Outcomes According to Glycemic Metrics in Overall Cohort**

	Retinopathy				Microalbuminuria			
	N	# (%) with outcome	Unadjusted HR (95% CI) *	Adjusted HR (95% CI) †	N	# (%) with outcome	Unadjusted HR (95% CI) *	Adjusted HR (95% CI) †
<b>Time in range (%)</b>								
≥50	466	36 (8%)	1.00	1.00	412	10 (2%)	1.00	1.00
40 - <50	319	32 (10%)	1.54 (0.94, 2.55)	1.61 (0.97, 2.65)	291	20 (7%)	2.44 (1.05, 5.67)	2.40 (1.03, 5.58)
30 - <40	271	59 (22%)	3.38 (2.22, 5.15)	3.37 (2.20, 5.15)	242	29 (12%)	4.74 (2.16, 10.40)	4.39 (2.01, 9.58)
<30	384	144 (38%)	6.23 (4.25, 9.13)	6.93 (4.69, 10.24)	338	57 (17%)	6.68 (3.35, 13.29)	6.98 (3.49, 13.96)
<b>Mean glucose (mg/dL)</b>								
<150	323	17 (5%)	1.00	1.00	287	6 (2%)	1.00	1.00
150 - <180	341	33 (10%)	1.58 (0.86, 2.91)	1.73 (0.93, 3.20)	308	14 (5%)	2.08 (0.70, 6.16)	2.02 (0.69, 5.90)
180 - <230	403	81 (20%)	3.68 (2.16, 6.27)	3.84 (2.25, 6.56)	360	41 (11%)	4.97 (2.06, 12.00)	4.66 (1.93, 11.26)
≥230	373	140 (38%)	8.36 (5.03, 13.88)	9.50 (5.66, 15.92)	328	55 (17%)	8.42 (3.43, 20.69)	8.59 (3.50, 21.11)
<b>Time &gt;180 mg/dL (%)</b>								
<30	302	19 (6%)	1.00	1.00	268	8 (3%)	1.00	1.00
30 - <45	371	36 (10%)	1.65 (0.90, 3.02)	1.84 (1.01, 3.38)	334	13 (4%)	1.86 (0.56, 6.19)	1.81 (0.53, 6.16)
45 - <65	401	79 (20%)	3.48 (2.04, 5.93)	3.56 (2.07, 6.12)	356	41 (12%)	4.93 (1.86, 13.06)	4.63 (1.74, 12.34)
≥65	366	137 (37%)	8.20 (4.88, 13.81)	9.82 (5.77, 16.73)	325	54 (17%)	7.49 (2.80, 20.04)	7.71 (2.84, 20.89)
<b>Time &gt;250 mg/dL (%)</b>								
<10	277	15 (5%)	1.00	1.00	248	7 (3%)	1.00	1.00
10 - <25	452	40 (9%)	1.60 (0.84, 3.06)	1.75 (0.91, 3.36)	404	17 (4%)	1.62 (0.64, 4.12)	1.61 (0.63, 4.10)
25 - <40	314	68 (22%)	3.89 (2.11, 7.19)	4.12 (2.23, 7.60)	281	33 (12%)	4.52 (1.85, 11.07)	4.28 (1.75, 10.46)
≥40	397	148 (37%)	8.28 (4.71, 14.58)	9.50 (5.33, 16.95)	350	59 (17%)	6.74 (2.91, 15.62)	6.90 (2.97, 16.05)
<b>AUC 180 mg/dL</b>								
<20	321	19 (6%)	1.00	1.00	287	6 (2%)	1.00	1.00
20 - <40	374	30 (8%)	1.31 (0.67, 2.56)	1.39 (0.71, 2.71)	336	15 (4%)	1.69 (0.59, 4.84)	1.65 (0.58, 4.69)
40 - <75	390	86 (22%)	3.76 (2.20, 6.43)	3.96 (2.32, 6.75)	350	38 (11%)	4.92 (2.12, 11.41)	4.51 (1.93, 10.51)
≥75	355	136 (38%)	7.65 (4.54, 12.89)	8.48 (5.01, 14.38)	310	57 (18%)	8.11 (3.48, 18.88)	8.25 (3.53, 19.29)
<b>HBGI</b>								
<8	356	23 (6%)	1.00	1.00	319	8 (3%)	1.00	1.00
8 - <14	377	34 (9%)	1.37 (0.77, 2.43)	1.47 (0.83, 2.63)	342	16 (5%)	1.67 (0.70, 3.96)	1.64 (0.69, 3.88)
14 - <22	355	78 (22%)	3.69 (2.27, 5.97)	3.88 (2.38, 6.33)	312	36 (12%)	4.43 (2.03, 9.68)	4.15 (1.89, 9.08)
≥22	352	136 (39%)	7.37 (4.67, 11.63)	8.26 (5.19, 13.13)	310	56 (18%)	6.95 (3.32, 14.54)	7.12 (3.39, 14.97)
<b>A1C</b>								
<7.0	343	17 (5%)	1.00	1.00	309	10 (3%)	1.00	1.00
7.0 - <8.0	399	33 (8%)	1.65 (0.91, 2.96)	1.67 (0.92, 3.01)	355	16 (5%)	1.40 (0.63, 3.08)	1.37 (0.62, 3.04)
8.0 - <9.0	287	63 (22%)	4.62 (2.70, 7.91)	4.80 (2.79, 8.26)	257	26 (10%)	3.20 (1.54, 6.65)	3.07 (1.47, 6.42)
≥9.0	411	158 (38%)	9.64 (5.83, 15.94)	11.03 (6.62, 18.37)	362	64 (18%)	5.97 (3.06, 11.66)	6.18 (3.14, 12.18)

## SUPPLEMENTARY DATA

For each metric, strata based on average of metric over the entire DCCT study period.

\* For each metric, P value =  $<0.001$  using a time-dependent version of the variable in discrete Cox PH regression models.

† For each metric, P value =  $<0.001$  using a time-dependent version of the variable in discrete Cox PH regression models stratified by the ETDRS level of retinopathy at baseline and adjusted for the pre-DCCT glyceic exposure represented by the pre-existing duration of diabetes separately for the primary and secondary cohorts.