

SUPPLEMENTARY TABLE S4. ASPECTS OF SELF-REPORTED DIABETES MANAGEMENT IN 2016–2018

	Overall, N=11,007	6–12 years old, N=1312	13–17 years old, N=3179	18–25 years old, N=2440	26–49 years old, N=2122	≥50 years old, N=1953
Insulin use						
Timing of insulin bolus, <i>n</i> (%)						
At least several minutes before the meal	2671 (24)	359 (27)	626 (20)	419 (17)	544 (26)	723 (37)
Immediately before the meal	4822 (44)	579 (44)	1491 (47)	1009 (41)	944 (44)	798 (41)
During the meal	1178 (11)	105 (8)	351 (11)	339 (14)	262 (12)	121 (6)
After the meal	2336 (21)	269 (21)	711 (22)	673 (28)	372 (18)	311 (16)
Frequency of use of insulin pump features to decide insulin dose based on carbohydrate intake, <i>n</i> (%)						
Always	4892 (65)	699 (70)	1462 (66)	1063 (66)	859 (59)	809 (64)
Sometimes	1151 (15)	100 (10)	240 (11)	257 (16)	326 (22)	228 (18)
Rarely	441 (6)	32 (3)	102 (5)	96 (6)	141 (10)	70 (6)
Never	1084 (14)	166 (17)	415 (19)	197 (12)	141 (10)	165 (13)
Frequency of use of insulin pump features to decide insulin dose based on elevated glucose values, <i>n</i> (%)						
Always	4984 (66)	675 (68)	1476 (67)	1095 (68)	892 (61)	846 (67)
Sometimes	1384 (18)	149 (15)	311 (14)	285 (18)	383 (26)	256 (20)
Rarely	302 (4)	25 (3)	71 (3)	77 (5)	80 (5)	49 (4)
Never	898 (12)	148 (15)	361 (16)	156 (10)	112 (8)	121 (10)
Frequency of use of insulin pump features to decide insulin dose based on both carbohydrate intake and elevated glucose values, <i>n</i> (%)						
Always	5049 (67)	718 (72)	1507 (68)	1093 (68)	864 (59)	867 (68)
Sometimes	889 (12)	133 (13)	344 (16)	160 (10)	130 (9)	122 (10)
Rarely	322 (4)	31 (3)	74 (3)	67 (4)	102 (7)	48 (4)
Never	1308 (17)	115 (12)	294 (13)	293 (18)	371 (25)	235 (18)
Frequency of missed insulin bolus, <i>n</i> (%)						
Never	3330 (30)	541 (41)	810 (25)	535 (22)	670 (32)	774 (40)
Once a month or less	3411 (31)	430 (33)	894 (28)	687 (28)	736 (35)	664 (34)
Once a week or less	1867 (17)	165 (13)	595 (19)	501 (21)	339 (16)	267 (14)
2 days per week	1335 (12)	112 (9)	482 (15)	376 (15)	225 (11)	140 (7)
3–4 days per week	572 (5)	28 (2)	208 (7)	191 (8)	88 (4)	56 (3)
5–6 days per week	143 (1)	10 (<1)	53 (2)	41 (2)	20 (<1)	19 (<1)
At least once a day	351 (3)	24 (2)	138 (4)	112 (5)	47 (2)	30 (2)
Frequency of missed basal for injection users, ^a <i>n</i> (%)						
Never	2125 (61)	248 (79)	575 (60)	397 (48)	417 (62)	487 (70)
Once a month or less	911 (26)	53 (17)	240 (25)	265 (32)	187 (28)	166 (24)
Once a week or less	214 (6)	8 (3)	65 (7)	77 (9)	34 (5)	30 (4)
2 days per week	119 (3)	2 (<1)	52 (5)	46 (6)	15 (2)	4 (<1)
3–4 days per week	37 (1)	0 (0)	7 (<1)	18 (2)	7 (1)	5 (<1)
5–6 days per week	7 (<1)	2 (<1)	2 (<1)	2 (<1)	1 (<1)	0 (0)
At least once a day	67 (2)	2 (<1)	22 (2)	27 (3)	8 (1)	8 (1)
Duration of infusion set wear, days, mean ± SD	3.1 ± 0.8	2.8 ± 0.6	2.9 ± 0.7	3.2 ± 0.8	3.4 ± 0.9	3.3 ± 0.9

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SUPPLEMENTARY TABLE S4. (CONTINUED)

	Overall, N=11,007	6–12 years old, N=1312	13–17 years old, N=3179	18–25 years old, N=2440	26–49 years old, N=2122	≥50 years old, N=1953
Glucose monitoring						
Frequency of deciding amount of insulin bolus based only on CGM, ^b <i>n</i> (%)						
Always	277 (7)	22 (4)	52 (6)	48 (7)	99 (10)	56 (8)
Most of the time	1154 (30)	114 (21)	217 (24)	232 (35)	374 (39)	217 (29)
Sometimes	1201 (31)	187 (34)	306 (34)	206 (31)	278 (29)	224 (30)
Rarely	671 (18)	116 (21)	177 (19)	113 (17)	130 (14)	135 (18)
Never	510 (13)	112 (20)	156 (17)	58 (9)	70 (7)	114 (15)
Adjust insulin dose based on trend arrows on CGM, ^b <i>n</i> (%)	2870 (75)	400 (72)	634 (70)	533 (81)	773 (81)	530 (71)
Ketone monitoring						
Method of ketone checking, <i>n</i> (%)						
Blood	943 (9)	273 (21)	368 (12)	194 (8)	54 (3)	54 (3)
Urine	5233 (47)	809 (62)	2090 (66)	1383 (57)	575 (27)	376 (19)
Sometimes blood and sometimes urine	333 (3)	59 (4)	144 (5)	89 (4)	23 (1)	18 (<1)
Rarely check for ketones with blood or urine	1724 (16)	119 (9)	366 (11)	415 (17)	443 (21)	380 (19)
Never check for ketones	2828 (26)	53 (4)	215 (7)	364 (15)	1048 (49)	1148 (58)
Has a blood-ketone meter at home, <i>n</i> (%)	2230 (20)	490 (37)	840 (26)	605 (25)	173 (8)	122 (6)
Has urine ketone strips at home, <i>n</i> (%)	7838 (71)	1116 (85)	2809 (88)	2084 (85)	1069 (50)	759 (38)
Frequency of checking ketones via blood in a 30-day period, days, median (IQR)	0 (0–0)	0 (0–0)	0 (0–0)	0 (0–0)	0 (0–0)	0 (0–0)
Frequency of checking ketones via urine in a 30-day period, days, median (IQR)	0 (0–1)	0 (0–3)	0 (0–2)	0 (0–1)	0 (0–0)	0 (0–0)
HbA1c goals						
Participant reported having an HbA1c goal, <i>n</i> (%)	10046 (91)	1185 (90)	2829 (89)	2223 (91)	2000 (93)	1808 (91)
HbA1c goal, <i>n</i> (%)						
<42 mmol/mol (<6%)	670 (7)	40 (3)	91 (3)	107 (5)	245 (12)	187 (10)
<48 mmol/mol (<6.5%)	1387 (14)	85 (7)	189 (7)	260 (12)	490 (25)	363 (20)
<53 mmol/mol (<7.0%)	3949 (39)	393 (33)	958 (34)	896 (40)	894 (45)	808 (45)
<58 mmol/mol (<7.5%)	2391 (24)	427 (36)	862 (31)	563 (25)	234 (12)	305 (17)
<64 mmol/mol (<8.0%)	1087 (11)	189 (16)	442 (16)	252 (11)	100 (5)	104 (6)
<69 mmol/mol (<8.5%)	404 (4)	38 (3)	203 (7)	107 (5)	27 (1)	28 (2)
≥69 mmol/mol (≥8.5%)	112 (1)	6 (<1)	60 (2)	34 (2)	6 (<1)	6 (<1)
Use of glucagon, <i>n</i> (%)						
Used glucagon in prior 3 months to treat severe hypoglycemia	331 (3)	30 (2)	81 (3)	52 (2)	53 (2)	115 (6)
Used glucagon in small doses in prior 3 months before or during exercise	36 (<1)	3 (<1)	18 (<1)	7 (<1)	4 (<1)	4 (<1)
Used glucagon in small doses in prior 3 months in place of carbohydrates	29 (<1)	8 (<1)	9 (<1)	6 (<1)	2 (<1)	4 (<1)

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SUPPLEMENTARY TABLE S4. (CONTINUED)

	Overall, N=11,007	6–12 years old, N=1312	13–17 years old, N=3179	18–25 years old, N=2440	26–49 years old, N=2122	≥50 years old, N=1953
Device downloading						
Frequency of downloading blood glucose meter outside of doctor's office: non-CGM users, ^{bc} n (%)						
Never	5750 (71)	529 (62)	1590 (63)	1420 (72)	1115 (78)	1095 (81)
<1 time a year	461 (6)	53 (6)	137 (5)	145 (7)	84 (6)	42 (3)
Once a year	246 (3)	34 (4)	79 (3)	74 (4)	37 (3)	22 (2)
A few times a year	877 (11)	134 (16)	337 (13)	196 (10)	107 (7)	103 (8)
Once a month	446 (5)	57 (7)	207 (8)	85 (4)	47 (3)	50 (4)
2–3 times per month	174 (2)	28 (3)	85 (3)	28 (1)	17 (1)	16 (1)
Once a week	105 (1)	14 (2)	43 (2)	16 (<1)	16 (1)	16 (1)
2–5 times per week	26 (<1)	4 (<1)	14 (<1)	2 (<1)	4 (<1)	2 (<1)
6–7 times per week	47 (<1)	5 (<1)	19 (<1)	8 (<1)	6 (<1)	9 (<1)
Frequency of downloading blood glucose meter outside of doctor's office: CGM users, ^{bc} n (%)						
Never	1585 (60)	205 (51)	289 (51)	246 (59)	464 (69)	381 (67)
<1 time a year	172 (7)	18 (5)	41 (7)	36 (9)	45 (7)	32 (6)
Once a year	95 (4)	14 (4)	24 (4)	25 (6)	15 (2)	17 (3)
A few times a year	420 (16)	82 (21)	114 (20)	69 (17)	88 (13)	67 (12)
Once a month	217 (8)	47 (12)	63 (11)	28 (7)	40 (6)	39 (7)
2–3 times per month	85 (3)	21 (5)	22 (4)	10 (2)	13 (2)	19 (3)
Once a week	40 (2)	9 (2)	15 (3)	2 (<1)	5 (<1)	9 (2)
2–5 times per week	6 (<1)	0 (0)	3 (<1)	1 (<1)	1 (<1)	1 (<1)
6–7 times per week	12 (<1)	4 (1)	0 (0)	0 (0)	5 (<1)	3 (<1)
Reason for infrequent meter downloading (< once a month), ^d n (%)						
Do not own computer	564 (6)	99 (9)	143 (5)	106 (5)	106 (5)	110 (6)
Did not know it was possible to download	1127 (12)	98 (9)	365 (14)	277 (13)	198 (10)	189 (11)
Did not know how to download	2097 (22)	187 (17)	536 (21)	474 (21)	381 (19)	519 (30)
Download too hard to understand	444 (5)	53 (5)	148 (6)	67 (3)	79 (4)	97 (6)
Takes too much time	2133 (22)	187 (17)	531 (20)	566 (26)	566 (26)	283 (16)
Meter software not compatible with computer	891 (9)	117 (11)	254 (10)	214 (10)	153 (8)	153 (9)
Get blood glucose downloads from pump	1784 (19)	230 (22)	516 (20)	406 (18)	347 (18)	285 (16)
Prefer written records	1236 (13)	173 (16)	360 (14)	259 (12)	187 (10)	257 (15)
Do not find data useful	856 (9)	53 (5)	174 (7)	244 (11)	222 (11)	163 (9)
Frequency of downloading CGM data outside doctor's office, ^b n (%)						
Never	2278 (51)	262 (42)	571 (50)	421 (51)	552 (52)	472 (57)
<1 time per year	280 (6)	33 (5)	64 (6)	62 (8)	76 (7)	45 (5)
Once a year	144 (3)	14 (2)	30 (3)	34 (4)	43 (4)	23 (3)
A few times a year	670 (15)	126 (20)	169 (15)	119 (15)	161 (15)	95 (11)
Once a month	576 (13)	100 (16)	157 (14)	96 (12)	127 (12)	96 (12)
2–3 times per month	221 (5)	43 (7)	50 (4)	37 (5)	48 (5)	43 (5)
Once a week	153 (3)	27 (4)	54 (5)	15 (2)	25 (2)	32 (4)
More than once a week	38 (<1)	8 (1)	12 (1)	6 (<1)	8 (<1)	4 (<1)
Every day	125 (3)	18 (3)	37 (3)	29 (4)	22 (2)	19 (2)

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SUPPLEMENTARY TABLE S4. (CONTINUED)

	Overall, N=11,007	6–12 years old, N=1312	13–17 years old, N=3179	18–25 years old, N=2440	26–49 years old, N=2122	≥50 years old, N=1953
Reason for infrequent CGM downloading (<once a month), ^d n (%)						
Do not own computer	169 (5)	26 (6)	46 (6)	24 (4)	39 (5)	34 (5)
Did not know it was possible to download	388 (12)	49 (11)	134 (16)	82 (13)	60 (7)	63 (10)
Did not know how to download	790 (23)	102 (23)	218 (26)	138 (22)	158 (19)	174 (27)
Download too hard to understand	233 (7)	32 (7)	58 (7)	35 (6)	54 (6)	54 (9)
Takes too much time	1139 (34)	129 (30)	241 (29)	232 (36)	366 (44)	171 (27)
CGM software not compatible with computer	360 (11)	37 (9)	59 (7)	77 (12)	101 (12)	86 (14)
Prefer written records	351 (10)	67 (15)	98 (12)	68 (11)	53 (6)	65 (10)
Do not find data useful	323 (10)	25 (6)	69 (8)	66 (10)	91 (11)	72 (11)
Frequency of downloading insulin pump data outside doctor's office, ^a n (%)						
Never	4587 (60)	456 (45)	1148 (50)	1054 (64)	1017 (69)	912 (71)
<1 time per year	503 (7)	62 (6)	162 (7)	134 (8)	94 (6)	51 (4)
Once a year	273 (4)	40 (4)	83 (4)	70 (4)	45 (3)	35 (3)
A few times a year	1173 (15)	228 (23)	418 (18)	213 (13)	173 (12)	141 (11)
Once a month	756 (10)	134 (13)	310 (14)	130 (8)	94 (6)	88 (7)
2–3 times per month	251 (3)	55 (5)	108 (5)	29 (2)	28 (2)	31 (2)
Once a week	120 (2)	21 (2)	54 (2)	6 (<1)	20 (1)	19 (1)
More than once a week	15 (<1)	2 (<1)	6 (<1)	3 (<1)	3 (<1)	1 (<1)
Every day	24 (<1)	6 (<1)	6 (<1)	3 (<1)	4 (<1)	5 (<1)
Reason for infrequent insulin pump downloading (<once a month), ^d n (%)						
Do not own computer	356 (5)	69 (9)	95 (5)	58 (4)	66 (5)	68 (6)
Did not know it was possible to download	571 (9)	43 (5)	169 (9)	142 (10)	102 (8)	115 (10)
Did not know how to download	1584 (24)	155 (20)	432 (24)	322 (22)	295 (22)	380 (33)
Download too hard to understand	441 (7)	61 (8)	146 (8)	73 (5)	76 (6)	85 (7)
Takes too much time	2170 (33)	226 (29)	607 (34)	542 (37)	535 (40)	260 (23)
Insulin pump software not compatible with computer	771 (12)	117 (15)	201 (11)	185 (13)	143 (11)	125 (11)
Prefer written records	725 (11)	136 (17)	212 (12)	154 (10)	95 (7)	128 (11)
Do not find data useful	682 (10)	60 (8)	146 (8)	200 (14)	154 (12)	122 (11)
Use a mobile medical application to assist with diabetes care, n (%)	1799 (16)	303 (23)	566 (18)	425 (17)	334 (16)	171 (9)
Tasks performed using mobile medical application, ^d n (%)						
View glucose meter data	352 (20)	42 (14)	116 (20)	84 (20)	62 (19)	48 (28)
View CGM data	1298 (72)	248 (82)	416 (73)	280 (66)	243 (73)	111 (65)
View insulin pump data	175 (10)	31 (10)	56 (10)	30 (7)	26 (8)	32 (19)
Manage patterns and adjust insulin	400 (22)	67 (22)	103 (18)	97 (23)	83 (25)	50 (29)
Share results with health care provider	409 (23)	66 (22)	108 (19)	82 (19)	87 (26)	66 (39)
Share results with family members	485 (27)	124 (41)	193 (34)	94 (22)	43 (13)	31 (18)
Record foods	226 (13)	19 (6)	49 (9)	84 (20)	54 (16)	20 (12)
Track exercise	207 (12)	9 (3)	34 (6)	70 (16)	68 (20)	26 (15)

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SUPPLEMENTARY TABLE S4. (CONTINUED)

	Overall, N=11,007	6–12 years old, N=1312	13–17 years old, N=3179	18–25 years old, N=2440	26–49 years old, N=2122	≥50 years old, N=1953
Diabetes mobile medical applications used, ^d <i>n</i> (%)						
Dexcom Share	1218 (68)	239 (79)	408 (72)	267 (63)	211 (63)	93 (54)
Medtronic Connect	135 (8)	19 (6)	33 (6)	25 (6)	36 (11)	22 (13)
Glooko	73 (4)	13 (4)	25 (4)	13 (3)	14 (4)	8 (5)
Tidepool	44 (2)	2 (<1)	5 (<1)	10 (2)	18 (5)	9 (5)
mySugr	91 (5)	8 (3)	27 (5)	37 (9)	16 (5)	3 (2)
Hypoglycemia awareness						
Awareness of beginning to experience low blood sugar (0=Never aware and 5= Always aware), median (IQR)	4 (3–5)	4 (3–4)	4 (4–5)	4 (4–5)	4 (3–5)	4 (3–5)
Level of blood sugar before feel of symptoms, <i>n</i> (%)						
At least 3 · 9 mmol/L (70 mg/dL)	4637 (42)	534 (41)	1628 (51)	1271 (52)	712 (33)	492 (25)
3 · 3–3 · 8 mmol/L (60–69 mg/dL)	3670 (33)	439 (33)	1009 (32)	835 (34)	791 (37)	596 (30)
2 · 8–3 · 3 mmol/L (50–59 mg/dL)	1788 (16)	225 (17)	399 (13)	264 (11)	429 (20)	470 (24)
2 · 2–2 · 7 mmol/L (40–49 mg/dL)	538 (5)	69 (5)	80 (3)	45 (2)	121 (6)	223 (11)
<2 · 2 mmol/L (<40 mg/dL)	320 (3)	33 (3)	51 (2)	22 (<1)	69 (3)	145 (7)
Never feel symptoms	108 (<1)	13 (<1)	16 (<1)	8 (<1)	21 (<1)	50 (3)

^a*N*=7568 participants reported insulin pump use; *N*=3480 reported multiple daily injection use.

^b*N*=3830 participants reported using a CGM; *N*=223 reported using a Medtronic 530G pump/CGM.

^c*N*=297 participants reported not using a blood glucose meter (*N*=246 non-CGM users | *N*=51 CGM users).

^dProportions of each row assessed individually (represent row percentages).