

SUPPLEMENTARY DATA

**Supplementary Table 1.** Variation from mean basal rate per hour of all patients clustering in either pattern F, AG, BC and D  $\pm$  1 SD for each hour in a 24 hours interval (mean BR = 1) according to figure 1. To calculate a patient's individual cluster basal rate in insulin units per hour, the given variation has either to be added to the mean basal rate per hour or subtracted from the mean basal rate per hour of that patient in each of the 24 hours.

pattern / time	BC	$\pm$ 1 SD	AG	$\pm$ 1 SD	F	$\pm$ 1SD	D	$\pm$ 1SD
0AM-1AM	-0.34	0.36	-0.46	0.39	0.02	0.47	0.21	0.35
1AM-2AM	-0.19	0.35	-0.50	0.40	-0.10	0.44	0.25	0.33
2AM-3AM	0.03	0.34	-0.50	0.40	-0.16	0.40	0.31	0.32
3AM-4AM	0.26	0.33	-0.42	0.40	-0.20	0.41	0.39	0.31
4AM-5AM	0.45	0.32	-0.30	0.42	-0.17	0.42	0.44	0.33
5AM-6AM	0.55	0.32	-0.16	0.40	-0.13	0.43	0.46	0.34
6AM-7AM	0.49	0.32	-0.01	0.37	-0.10	0.43	0.38	0.34
7AM-8AM	0.33	0.30	0.08	0.37	-0.08	0.43	0.21	0.35
8AM-9AM	0.14	0.31	0.15	0.36	-0.14	0.46	-0.03	0.38
9AM-10AM	-0.03	0.31	0.17	0.36	-0.25	0.51	-0.25	0.42
10AM-11AM	-0.15	0.30	0.16	0.35	-0.37	0.48	-0.44	0.42
11AM-12AM	-0.22	0.31	0.16	0.33	-0.42	0.45	-0.57	0.43
12AM-1PM	-0.25	0.30	0.17	0.31	-0.35	0.46	-0.62	0.42
1PM-2PM	-0.21	0.27	0.17	0.30	-0.25	0.40	-0.55	0.38
2PM-3PM	-0.11	0.26	0.18	0.31	-0.13	0.40	-0.43	0.36
3PM-4PM	0.03	0.26	0.21	0.32	-0.01	0.40	-0.25	0.36
4PM-5PM	0.17	0.26	0.25	0.32	0.10	0.39	-0.10	0.37
5PM-6PM	0.21	0.26	0.24	0.30	0.20	0.38	0.00	0.35
6PM-7PM	0.15	0.28	0.25	0.28	0.27	0.37	0.04	0.35
7PM-8PM	-0.01	0.30	0.25	0.35	0.38	0.39	0.04	0.36
8PM-9PM	-0.18	0.34	0.18	0.39	0.50	0.44	0.07	0.37
9PM-10PM	-0.32	0.36	0.07	0.40	0.57	0.44	0.10	0.39
10PM-11PM	-0.39	0.35	-0.10	0.42	0.51	0.43	0.15	0.39
11PM-12PM	-0.41	0.35	-0.24	0.41	0.34	0.44	0.17	0.38

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**Supplementary Table 2.** Statistic data table displaying the estimates, standard errors, Wald Chi-squares, and Pr>ChiSq for intercept, age at retrieval of most recent BR, duration of diabetes and sex. Data is provided for all 4 BR patterns F, AG, BC and D, including both, new dataset 2 and previous dataset 1.

BR - cluster (dataset)	parameter	estimate	standard error	Wald Chi-Square	Pr>ChiSq
F (dataset 2)	intercept	0.6733	0.0852	62.4965	<0.0001
	age at retrieval of the most recent BR	-0.2660	0.0129	427.9782	<0.0001
	duration of diabetes	-0.0309	0.0199	2.4108	0.1205
	male sex	0.0454	0.0411	1.2208	0.2692
F (dataset 1)	intercept	0.9070	0.2610	12.0706	0.0005
	age at retrieval of the most recent BR	-0.3021	0.0314	92.4432	<0.0001
	duration of diabetes	0.0376	0.0435	0.7456	0.3879
	male sex	-0.1101	0.1094	1.0128	0.3142
AG (dataset 2)	intercept	-1.5826	0.1153	188.4527	<0.0001
	age at retrieval of the most recent BR	-0.1193	0.0149	63.7029	<0.0001
	duration of diabetes	0.0330	0.0205	2.5847	0.1079
	male sex	-0.1582	0.0526	9.0351	0.0026
AG (dataset 1)	intercept	-1.1122	0.2890	14.8139	0.0001
	age at retrieval of the most recent BR	-0.0803	0.0269	8.9072	0.0028
	duration of diabetes	-0.0232	0.0338	0.4690	0.4935
	male sex	-0.2648	0.1010	6.8720	0.0088
BC (dataset 2)	intercept	-3.1399	0.1012	962.6206	<0.0001
	age at retrieval of the most recent BR	0.2606	0.00936	775.3928	<0.0001
	duration of diabetes	-0.0154	0.00974	2.5151	0.1128
	male sex	0.00585	0.0294	0.0396	0.8423
BC (dataset 1)	intercept	-2.5275	0.2623	92.8716	<0.0001
	age at retrieval of the most recent BR	0.2736	0.0229	142.7108	<0.0001
	duration of diabetes	-0.0220	0.0229	0.9210	0.3372
	male sex	0.1170	0.0692	2.8570	0.0910
D (dataset 2)	intercept	-0.1104	0.0705	2.4522	0.1174
	age at retrieval of the most recent BR	-0.0480	0.00751	40.8671	<0.0001
	duration of diabetes	0.0152	0.00964	2.5041	0.1135
	male sex	-0.00898	0.0272	0.1093	0.7409
D (dataset 1)	intercept	-0.6815	0.2607	6.8318	0.0090
	age at retrieval of the most recent BR	-0.1184	0.0252	22.0929	<0.0001
	duration of diabetes	0.0385	0.0302	1.6221	0.2028
	male sex	0.0690	0.0992	0.6116	0.4342

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**Supplementary Tables 3a-d.** Calculation of probabilities for typical patients of being treated with a BR pattern F (table 3a), AG (table 3b), BC (table 3c), and D (table 3d) in both datasets using the prediction equations presented in the main text and the statistical data presented in the online appendix table 2. The probability data shown here is displayed graphically in figures 2a-d of the manuscript.

**Supplementary Table 3a.** Probability of baseline insulin infusion pattern F (%)

age (duration of diabetes)	old dataset		new dataset	
	girls	boys	girls	boys
4 (1)	46	41	39	41
4 (2)	47	42	38	40
8 (1)	20	17	18	19
8 (2)	21	18	17	19
8 (4)	22	19	16	18
12 (1)	7	6	7	8
12 (2)	7	6	7	7
12 (4)	8	6	6	7
12 (8)	9	7	6	6
16 (1)	2	2	3	3
16 (2)	2	2	2	3
16 (4)	2	2	2	3
16 (8)	3	2	2	2
16 (12)	3	3	2	2

**Supplementary Table 3b.** Probability of basal insulin infusion pattern AG (%)

age (duration of diabetes)	old dataset		new dataset	
	girls	boys	girls	boys
4 (1)	23	15	13	10
4 (2)	23	15	14	10
8 (1)	18	11	9	7
8 (2)	18	11	9	7
8 (4)	17	11	10	7
12 (1)	14	9	6	4
12 (2)	13	8	6	4
12 (4)	13	8	6	5
12 (8)	12	7	7	5
16 (1)	10	6	4	3
16 (2)	10	6	4	3
16 (4)	10	6	4	3
16 (8)	9	5	4	3
16 (12)	8	5	5	4

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**Supplementary Table 3c.** Probability of basal insulin infusion pattern BC (%)

age (duration of diabetes)	old dataset		new dataset	
	girls	boys	girls	boys
4 (1)	17	21	11	11
4 (2)	17	20	11	11
8 (1)	38	44	25	26
8 (2)	38	43	25	25
8 (4)	37	42	25	25
12 (1)	65	70	49	49
12 (2)	64	70	49	49
12 (4)	63	69	48	48
12 (8)	61	67	46	47
16 (1)	85	87	73	74
16 (2)	84	87	73	73
16 (4)	84	87	72	73
16 (8)	83	86	71	71
16 (12)	81	85	70	70

**Supplementary Table 3d.** Probability of basal insulin infusion pattern D (%)

age (duration of diabetes)	old dataset		new dataset	
	girls	boys	girls	boys
4 (1)	23	26	43	43
4 (2)	24	27	43	43
8 (1)	16	18	38	38
8 (2)	17	19	39	38
8 (4)	18	20	40	39
12 (1)	11	12	34	34
12 (2)	11	12	34	34
12 (4)	12	13	35	35
12 (8)	13	15	36	36
16 (1)	7	8	30	29
16 (2)	7	8	30	30
16 (4)	8	9	31	30
16 (8)	9	10	32	32
16 (12)	10	11	33	33