Supplementary Appendix

This appendix has been provided by the authors to give readers additional information about their work.

Supplement to:

A prospective study of the prevalence of self-measurement of blood glucose according to guidelines in persons with type 1 diabetes in Sweden

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2 Translated Questionnaire. Original text in Swedish.

Survey on habits regarding blood glucose monitoring among persons with type 1 diabetes

You have been <u>asked</u> to participate in the study "Do self-measurements of blood glucose in persons with type 1 diabetes function according to guidelines?"

<u>NOTE !! Please read the **"Information to study participants".** If you want to participate in the study after reading the information, please sign the **consent form** *before* filling out the questionnaire.</u>

Some of the questions in this survey regard your habits of measuring blood glucose levels. Other questions concern your diabetes and its potential complications. We also ask general questions about e.g. housing, education, exercise habits, stress et cetera that may affect the results.

Please read the questions carefully and answer as truthfully as possible to ensure accurate results. If you have any difficulty in answering any question, do not hesitate to contact us for assistance. Telephone number and email address are available in the patient information pamphlet.

As a token of appreciation for filling out the questionnaire, we will send you a lottery ticket.

Thank you for your participation,

Study management

Date questionnaire was filled out _____ _____

2.1.1 Poll ID _____

Poll ID is used for us to identify who has answered the questionnaire.

NOTE! If you are using continuous blood glucose monitoring (CGM), please tick the box below and send in/submit the questionnaire without filling out the remaining survey.

☐   I am currently using CGM

Your habits of blood sugar measurement

1. How many times have you measured your blood glucose in the past week?

Check your blood glucose meter. Report the total number of measurements the last 7 days, regardless of how the week has been. If you are using more than one meter, add the numbers from all of them.

_____ (Number of measurements the last 7 days)

2. How many times have you measured the blood glucose the last 30 days?

Check your blood glucose meter. Report the total number of measurements the last 30 days, regardless of how the month has been. If you are using more than one meter, add the numbers from all of them.
 If for some reason you cannot find the numbers, please make an estimation.

_____ (Number of measurements the last 30 days)

3. How many measurements over the past week did you perform after food intake?

Blood glucose measurements 1½-2½ hours after food intake. Check your blood glucose meter or make an estimation.

_____ (Number of measurements after food intake last week)

4. How many times a day do you estimate that you measure blood glucose levels on average?

Please make an estimation.

_____ (Measurements per day)

5. How many times per month do you complete a blood glucose curve*?

*Defined as measuring blood sugar before and after breakfast, lunch and dinner and before bedtime, i.e. at least 7 measurements in one day?
Please make an estimation.

_____ (Blood glucose curves per month)

6. Have you received advice from your diabetes healthcare professionals on how often you routinely should measure your blood glucose levels every day?

☐ Yes

☐ No

☐ Do not know or do not remember

7. How often should you measure your blood glucose levels under optimal conditions according to your clinic?

☐ Once (1) daily

☐ Two (2) times daily

☐ Three (3) times daily

☐ Four (4) times daily

☐ Five (5) times or more daily

8. What is/are the main reason/reasons for not performing more frequent measurements?

You can tick more than one box.

☐ Lack of time

☐ Discomfort of the puncturing of finger/forearm

☐ I do not remember

☐ I feel self-conscious

☐ I do not want to know

☐ Other reason (s): _____

9. What would make you perform more frequent measurements?

☐ Smaller or more user friendly blood glucose meters

☐ More frequent visits to the clinic

☐ More frequent sampling at the clinic

☐ IT tools, e.g. mobile phone apps

☐ Nothing

☐ Other reason (s), please give suggestions:_____

10. Do you consider yourself using so-called carbohydrate counting*?

*Carbohydrate counting is when you calculate the amount of carbohydrates in grams in a meal, and adjust the insulin dose accordingly.

☐ I do not use carbohydrate counting, or I do not know what it is.

☐ I use carbohydrate counting without weighing the food.

☐ I use carbohydrate counting by at least weighing certain foods regularly.

Possible complications of diabetes

11. Have you ever performed laser photocoagulation of your eyes?

☐ Yes

☐ No

12. Have you ever had one or more protracted foot ulcers?

☐ Yes

☐ No

13. Have you ever had a stroke (cerebral hemorrhage or cerebral infarction)?

☐ Yes

☐ No

14. Have you ever had a heart attack?

☐ Yes

☐ No

15. Have you ever had to perform coronary artery procedures after for example a heart attack?

☐ No

☐ PCI (angioplasty)

☐ Bypass Surgery

16. If you think back, how often have you historically measured your blood glucose levels per day?

Make an estimation for each period.
If you have not had diabetes during that period, please omit answering.

3 months back	average _____ times daily
1 year back	average _____ times daily
5 years back	average _____ times daily
5-10 years back	average _____ times daily
10-20 years back	average _____ times daily

17. What is your level of education?

Tick the option that best meets the highest level of education that you have completed. Only one box should be ticked.

☐ I have not completed compulsory school, age group 7-16

☐ Compulsory school, age group 7-16

☐ Upper Secondary school

☐ College/University degree

18. What is your main current occupation?

(Several options can be made. For example, if you work 20 hours per week and have sickness benefits for the rest of the time, please tick the boxes for both options)

☐ Employed, number of hours per week: __ __ __ __
(Please specify the number of hours per week as accurately as possible, both part-time work or if you have more than one job.)

☐ Senior (retirement or similar)

☐ Sickness benefits/Activity compensation (disability pension, temporary disability/sickness pension)

☐ Student

☐ Parental leave

☐ Unemployed, since __ __ __ months

☐ On sick leave, since __ __ __ months

☐ Other – Non gainfully employed

19. What is your residential status?

☐ I am married or living with a partner with no children living at home

☐ I am married or living with a partner <u>with</u> children living at home

☐ I am living with children at home

☐ I am living with another person, but not my child, my spouse or my partner

☐ I am living alone

20. Do you smoke?

☐ No, I have never smoked

☐ Yes, I smoke regularly

☐ Yes, I smoke occasionally, for example at parties.

☐ No, I quit smoking year __ __ __ __

21. Stress

By stress we mean feelings of tension, irritability, nervousness, anxiousness or difficulties in sleeping as a result of, for example, conditions at work or at home. Have you experienced this?

Please tick ONE box below:

☐ I have never experienced stress

☐ I have experienced one or more stressful periods

☐ I have experienced one or more stressful periods during the past five years

☐ I have experienced constant stress during the past year

☐ I have experienced constant stress the past five years

22. Physical activity

How much physical activities have you engaged in in your leisure time during the past 12 months?

If your activity varies between e.g. summer and winter, try to estimate an average. Note! Please, tick only ONE box!

☐ Sedentary leisure. You spend most time reading, watching TV, films or other sedentary leisure activities. You walk, cycle or engage in other physical activities less than 2 hours a week.

☐ Moderate exercise during leisure time. You walk, cycle or engage in other physical activities for at least two hours a week without sweating. This includes e.g. walking or biking to and from work, other walks, heavier household work, normal gardening, fishing, playing table tennis or bowling.

☐ Moderate but regular exercise during leisure time. You exercise regularly 1-2 times per week for at least 30 minutes at a time, e.g. by running, swimming, playing tennis, badminton or any other activity that makes you sweat.

☐ Regular exercise and training during leisure time. You exercise by running, swimming, playing tennis or badminton, doing gymnastics or similar activity at least 3 times per week. Each session lasts at least 30 minutes at a time.

Again, many thanks for your participation!
Study Management

We will send your lottery ticket as soon as possible after receiving your response.

3   Tables

3.1   Table S1. Comparison of characteristics of study population to general patient characteristics in Sweden according to The Swedish National Register (NDR).

	Our data (all clinics)	National data (NDR)
Age (years)	46.9 (16.7) 47.0 (18.0; 87.0) n=328	45,5
Male	183 (55.8%)	56,9 %
Diabetes duration (years)	21.8 (15.1) 19.0 (0.0; 62.0) n=329	22,9
HbA1c (mmol/mol)	61.7 (12.7) 60.5 (35.0; 119.0) n=328	61,2
Insulin pump	81 (24.7%)	22,8 %

3.2 Table S2. Apprehension of recommended amount of daily SMBG (all clinics)

How many SMBG per day do you think is recommended?	
1	7 (2.9%)
2	21 (8.5%)
3	45 (18.3%)
4	82 (33.3%)
5	91 (37.0%)
n (%) is presented.	

3.3 Table S3. HbA1c level association with SMBG frequency

Change in SMBG	Change in HbA1c (mmol/mol) (95% CI)	
	Crude	Adjusted*
0 to 1	-2.19 (-3.51; -0.86)	-2.39 (-3.75; -1.03)
1 to 2	-1.97 (-3.05; -0.90)	-2.11 (-3.22; -1.01)
2 to 3	-1.76 (-2.61; -0.91)	-1.83 (-2.70; -0.97)
3 to 4	-1.55 (-2.20; -0.90)	-1.56 (-2.22; -0.89)
4 to 5	-1.33 (-1.86; -0.81)	-1.28 (-1.82; -0.74)
5 to 6	-1.12 (-1.65; -0.59)	-1.00 (-1.54; -0.46)
6 to 7	-0.91 (-1.57; -0.24)	-0.72 (-1.39; -0.06)
*Adjusted for age, smoking, activity, BMI and insulin delivery.		

3.4 Table S4 Reasons for not performing SMBG more frequently

What prevents you for doing SMBG more often?	All sites (n=176 of 329)	Site 1–3 (n=117 of 228)	Site 4–5 (n=59 of 101)
Lack of time	89 (50.6%)	61 (52.1%)	28 (47.5%)
Discomfort of the puncturing of finger/forearm	24 (13.6%)	14 (12.0%)	10 (16.9%)
I do not remember	94 (53.4%)	64 (54.7%)	30 (50.8%)
I feel self-conscious	37 (21.0%)	18 (15.4%)	19 (32.2%)
I do not want to know	10 (5.7%)	5 (4.3%)	5 (8.5%)
n (%) is presented.			