healthintegrator

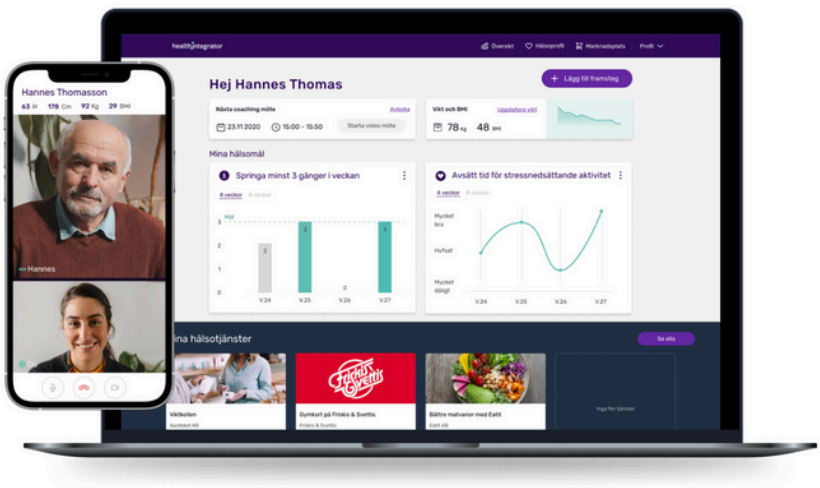
HEALTH INTEGRATOR -PREVENTION OF TYPE 2 DIABETES

24&36-monthreport

appendix with updated data

JANUARY 2025

CONTENT



1.VERSION HISTORY

This report covers the 36 months data in the Region of Stockholm Health Programme and is an update of the 24 months follow-up data. It includes data from 773 participants (358 last report) from the 24 months follow-up, and the first 485 participants with data from the 36 months follow up. In addition, 160 participants have reported 42 months data but will not be presented in this report. Tables are numbered similar to the previous report. However, only the main results are presented in this report and therefore some of the tables are excluded.

Please see link below to the full 24 month report which was published in September 2023.

24-month report

2.ABSTRACT

Backgrund

Region Stockholm's health care board has decided to test a model for more effective governance and financing of prevention initiatives. Among other things, the region wants to evaluate Health Integrator's preventive health programme, a prevention with significant digital elements to reduce the risk of type 2 diabetes. Previous scientific studies have shown that it is possible to halve the risk of type 2 diabetes with health-promoting lifestyle initiatives. Region Stockholm expects a health economic effect of SEK 1.4 billion per year at full scale-up to all pre-diabetics.

Aims and Objectives

The intervention aims to bring as many as possible (at least one third) of the participants from a prediabetes stage (HbA1c 42-47 mmol/mol) to a normal HbA1c (<42 mmol/mol) after two years of active intervention and maintain that proportion at the 3-, 4- and 5-year follow-up.

Participants and Methodology

Participants were mainly recruited through advertisements in social media and the daily press (both print and digital), newsletters to various companies and interest groups, and information sheets in waiting rooms at health centres. Interested participants were further screened using the FINDRISC form and blood tests where participants had to have an HbA1c between 42-47 mmol/mol to be included in the intervention. 925 participants were recruited from October 2020 to February 2022. The participants met with a health coach and together they planned different types of health goals to improve their lifestyle. Participants then booked health services and products using the Health Integrator digital platform.

Results

On 9 December 2024, 773 participants had reported data for the 24 months follow up, and 554 for the 36 months follow up, In addition, 54 participants had dropped out. The results show that 53.2% of the participants at 24 months and 49.9% at 36 months have a blood test showing an HbA1c <42 mmol/mol. There were 7.0% of the participants at 24 months and 9.3% at 36 months who increased their HbA1c to meet the diagnostic criteria for diabetes, >=48 mmol/mol. The results showed a statistically significant reduction in both HbA1c and BMI at 24 months and 36 months compared to baseline, p<0.001.

Conclusion

The results at 24 months and 36 months show that the intervention has achieved its primary objective to improve at least 1/3 of all participants into a normal HbA1C level <42 mmol/mol, as half of the participants have reduced HbA1c to the point of leaving prediabetes status. The lifestyle intervention appears to be working and it also reduces the participants' BMI, with the effect occurring after six months and being sustained until 36 months. Less than 10% of participants have developed an HbA1c indicative of type 2 diabetes over 3 years compared to 23% without lifestyle intervention.

3.PRIMARY AND SECONDARY OUTCOME VARIABLES

Primary outcome variable:

- Proportion of participants with HbA1c <42 mmol/mol at 24 months.

Secondary outcome variables

- Proportion of participants with HbA1c <42 mmol/mol
- Proportion of participants who improved HbA1c
- Mean change in HbA1c
- Mean change in BMI
- Proportion of participants with BMI classification of normal weight, .
- Proportion of participants measuring and maintaining HbA1c <42 mmol/mol
- Change in perceived quality of life

STATISTICS

The statistics are the same as previously reported. Analyses and results have been updated with the additional participants.

4.OUTCOME OF PARTICIPANTS AFTER 36 MONTHS

4.1 PARTICIPANT FLOW AND BASELINE DATA

As of 9 December 2024, 773 participants have responded to the 24-month follow-up and 485 participants responded to the 36 months follow-up. Results for the primary and main secondary outcome measures are updated and presented in this report.

Baseline data for the entire intervention population is presented in Table 1. Data may differ from previous reporting as data has been cleaned from incorrect entries found since the 18-month reporting.

Table 1a. Descriptive Statistics Baseline.

		Valid N	Mean	Standard Deviation	Median	Minimum	Maximum
Female	Weight (kg)	611	90,3	19,1	88,0	51,0	167,8
Male	Weight (kg)	314	100,1	17,9	98,7	52,0	155,0
Total	Weight (kg)	925	93,6	19,2	91,8	51,0	167,8
Female	BMI	611	32,6	6,4	31,8	18,7	57,4
Male	BMI	314	30,9	5,1	30,4	18,0	52,0
Total	BMI	925	32,0	6,1	31,2	18,0	57,4
Female	Waist circumference (cm)	596	105,4	15,2	104,0	60,0	165,0
Male	Waist circumference (cm)	300	110,9	14,0	110,0	82,0	175,0
Total	Waist circumference (cm)	896	107,3	15,1	106,0	60,0	175,0
Female	Height (cm)	611	166,3	6,1	167,0	149,0	182,0
Male	Height (cm)	314	180,0	6,7	180,0	159,0	200,0
Total	Height (cm)	925	170,9	9,0	170,0	149,0	200,0
Female	Age	611	55,8	3,0	56,0	50,0	62,0
Male	Age	314	55,2	2,9	55,0	50,0	61,0
Total	Age	925	55,6	3,0	56,0	50,0	62,0
Female	Findrisc score	608	16,2	3,9	16,0	4,0	25,0
Male	Findrisc score	313	15,5	4,2	16,0	4,0	25,0
Total	Findrisc score	921	15,9	4,0	16,0	4,0	25,0

4.2 RESULTS OF PRIMARY AND SECONDARY OUTCOME VARIABLES

4.2.1 PRIMARY OUTCOME VARIABLE

There primary outcome variable for the proportion of participants who met the criteria of normal HbA1C was above 50% at 24 months and 50% at 36 months, The results are presented in Table 2a. There were more men than women who developed HbA1c levels qualifying for diabetes, >=48 mmol/mol at 24 and 36 months. HbA1c levels by age and FINDRISC score at baseline are presented in 2c.

There was a similar proportion of normal HbA1c in both age groups. There was somewhat a greater proportion with normal HbA1c among those with a FINDRISC score <13 'low risk' at baseline than those with 13 or more 'high risk'.

Figure 2 illustrates the results for the primary outcome variable and the proportion leaving pre-diabetes at each follow-up point.

Table 2a. Primary Outcome Variable HbA1c by Gender.

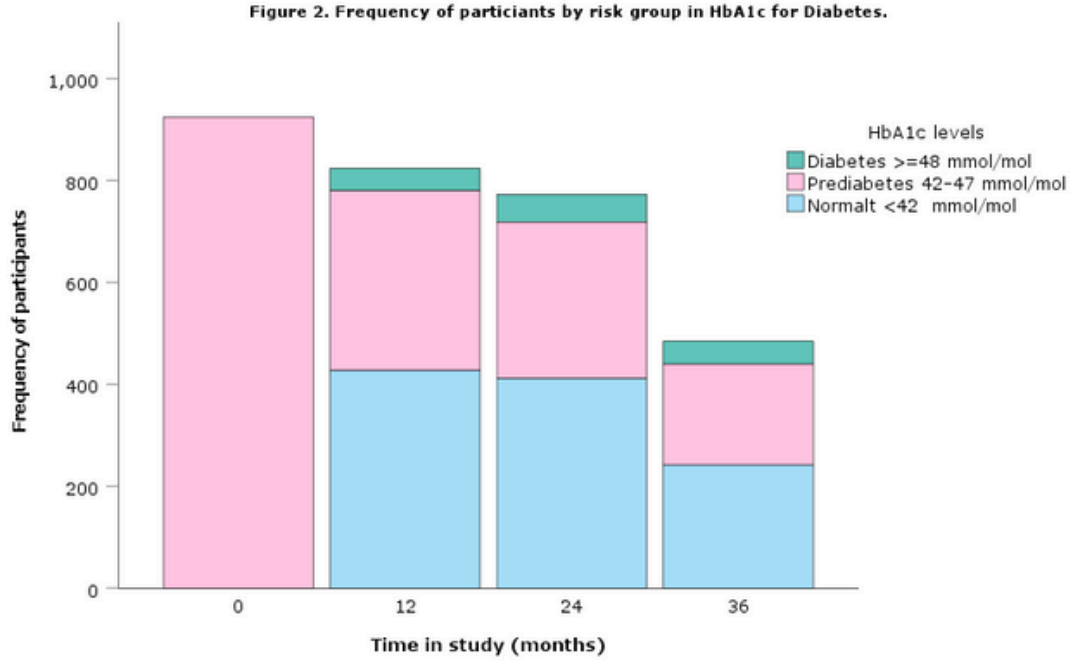
		Month in the study							
		0		12		24		36	
Gender	HbA1C	N	Percent	N	Percent	N	Percent	N	Percent
Female	Normal <42 mmol/mol	0	0.0%	280	51.3%	281	54.2%	169	51.4%
	Prediabetes 42-47 mmol/mol	610	100.0%	243	44.5%	207	40.0%	138	41.9%
	Diabetes >=48 mmol/mol	0	0.0%	23	4.2%	30	5.8%	22	6.7%
	Total	610	100.0%	546	100.0%	518	100.0%	329	100.0%
Male	Normal <42 mmol/mol	0	0.0%	147	52.9%	130	51.0%	73	46.8%
	Prediabetes 42-47 mmol/mol	313	100.0%	110	39.6%	101	39.6%	60	38.5%
	Diabetes >=48 mmol/mol	0	0.0%	21	7.6%	24	9.4%	23	14.7%
	Total	313	100.0%	278	100.0%	255	100.0%	156	100.0%
Total	Normal <42 mmol/mol	0	0.0%	427	51.8%	411	53.2%	242	49.9%
	Prediabetes 42-47 mmol/mol	925	100.0%	353	42.8%	308	39.8%	198	40.8%
	Diabetes >=48 mmol/mol	0	0.0%	44	5.3%	54	7.0%	45	9.3%
	Total	925	100.0%	824	100.0%	773	100.0%	485	100.0%

4.2.1 PRIMARY OUTCOME VARIABLE (CONT)

Table 2c. Primary Outcome Variable HbA1c by FINDRISC score.

		Month in the study							
		0		12		24		36	
FINDRISC at baseline	HbA1C	N	Percent	N	Percent	N	Percent	N	Percent
<13	Normal <42 mmol/mol	0	0.0%	114	66.3%	89	55.3%	21	52.5%
	Prediabetes 42-47 mmol/mol	181	100.0%	50	29.1%	65	40.4%	14	35.0%
	Diabetes >=48 mmol/mol	0	0.0%	8	4.7%	7	4.3%	5	12.5%
	Total	181	100.0%	172	100.0%	161	100.0%	40	100.0%
>=13	Normal <42 mmol/mol	0	0.0%	310	47.8%	320	52.5%	219	49.5%
	Prediabetes 42-47 mmol/mol	738	100.0%	302	46.6%	242	39.7%	184	41.6%
	Diabetes >=48 mmol/mol	0	0.0%	36	5.6%	47	7.7%	39	8.8%
	Total	738	100.0%	648	100.0%	609	100.0%	442	100.0%
Total	Normal <42 mmol/mol	0	0.0%	424	51.7%	409	53.1%	240	49.8%
	Prediabetes 42-47 mmol/mol	919	100.0%	352	42.9%	307	39.9%	198	41.1%
	Diabetes >=48 mmol/mol	0	0.0%	44	5.4%	54	7.0%	44	9.1%
	Total	919	100.0%	820	100.0%	770	100.0%	482	100.0%

Figure 2. Frequency of particiants by risk group in HbA1c for Diabetes.



4.2.2 SECONDARY OUTCOME VARIABLES

The mean HbA1c at each follow-up occasion is presented in Table 3.

Table 3a. Mean HbA1c over Time by Gender.

		Month in the study			
Gender	HbA1C	0	12	24	36
Female	N	609	546	518	329
	Mean	43.37	41.64	41.52	41.59
	Standard Deviation	1.54	3.31	3.51	3.93
	Median	43.00	41.00	41.00	41.00
	Minimum	42.00	30.00	30.00	27.00
	Maximum	47.00	56.00	63.00	64.00
Male	N	313	278	255	156
	Mean	43.54	42.29	41.71	42.28
	Standard Deviation	1.55	5.95	3.96	4.83
	Median	43.00	41.00	41.00	42.00
	Minimum	42.00	34.00	31.00	29.00
	Maximum	47.00	100.00	58.00	64.00
Total	N	924	824	773	485
	Mean	43.43	41.86	41.58	41.81
	Standard Deviation	1.54	4.39	3.66	4.25
	Median	43.00	41.00	41.00	42.00
	Minimum	42.00	30.00	30.00	27.00
	Maximum	47.00	100.00	63.00	64.00

As presented in Table 3c, mean HbA1c was statistically significant decreased from baseline to follow-up at 24 months and 36 months, $p<0.001$.

More than 60% of the participants improved in HbA1c from baseline to 24 and 36 months with somewhat greater proportion for women than for men.

The results are presented in Table 4. The number of participants who improved in HbA1c is illustrated in Figure 3.

4.2.2 SECONDARY OUTCOME VARIABLES

Table 3c. Mean Change in HbA1c over time by Gender.

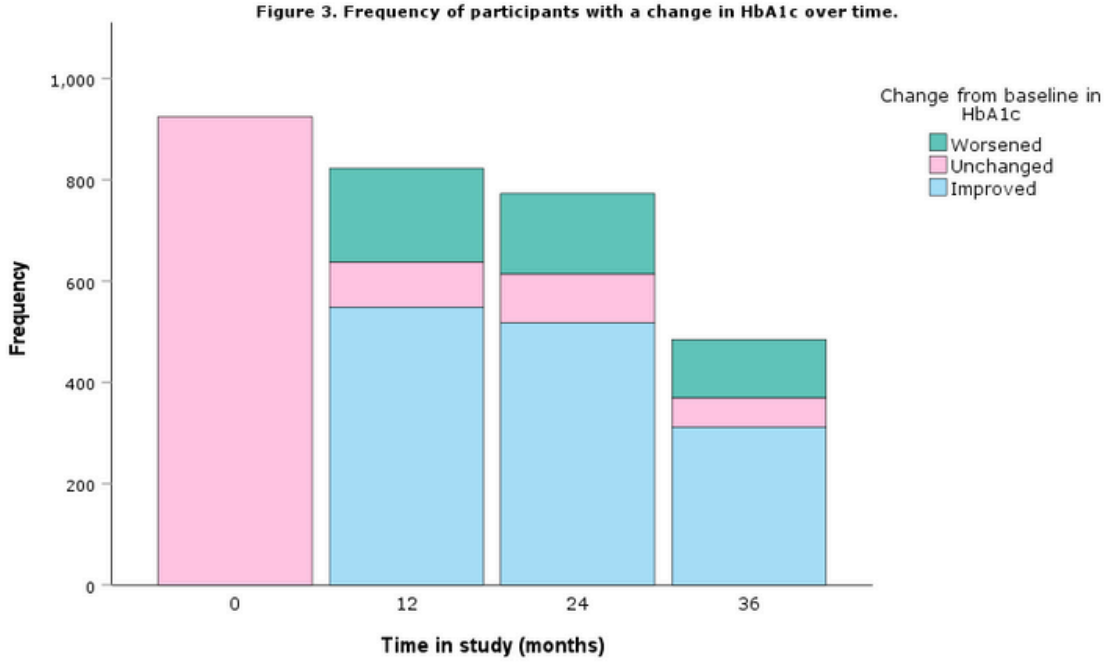
		Month in the study			
Gender	Change in HbA1c from baseline	0	12	24	36
Female	N	610	545	518	329
	Mean	0.00	-1.72	-1.84	-1.78
	95.0% Lower CL for Mean	0.00	-1.98	-2.13	-2.20
	95.0% Upper CL for Mean	0.00	-1.46	-1.54	-1.36
	Standard Deviation	0.00	3.05	3.43	3.90
	Median	0.00	-2.00	-2.00	-2.00
	Minimum	0.00	-14.00	-17.00	-15.00
	Maximum	0.00	14.00	21.00	22.00
Male	N	313	278	255	156
	Mean	0.00	-1.24	-1.83	-1.44
	95.0% Lower CL for Mean	0.00	-1.90	-2.30	-2.20
	95.0% Upper CL for Mean	0.00	-0.58	-1.36	-0.67
	Standard Deviation	0.00	5.60	3.78	4.83
	Median	0.00	-2.00	-2.00	-2.00
	Minimum	0.00	-12.00	-13.00	-17.00
	Maximum	0.00	53.00	12.00	18.00
Total	N	925	823	773	485
	Mean	0.00	-1.56	-1.83	-1.67
	95.0% Lower CL for Mean	0.00	-1.84	-2.08	-2.05
	95.0% Upper CL for Mean	0.00	-1.28	-1.58	-1.29
	Standard Deviation	0.00	4.09	3.54	4.22
	Median	0.00	-2.00	-2.00	-2.00
	Minimum	0.00	-14.00	-17.00	-17.00
	Maximum	0.00	17.00	53.00	35.00

4.2.2 SECONDARY OUTCOME VARIABLES

Table 4a. Proportion of participants with improvement in HbA1c by Gender.

		Month in the study							
		0		12		24		36	
Gender	Change in HbA1c	N	Percent	N	Percent	N	Percent	N	Percent
Female	Improved	0	0.0%	374	68.6%	355	68.5%	218	66.3%
	Unchanged	610	100.0%	56	10.3%	65	12.5%	38	11.6%
	Worsened	0	0.0%	115	21.1%	98	18.9%	73	22.2%
	Total	610	100.0%	545	100.0%	518	100.0%	329	100.0%
Male	Improved	0	0.0%	175	62.9%	163	63.9%	94	60.3%
	Unchanged	313	100.0%	32	11.5%	31	12.2%	19	12.2%
	Worsened	0	0.0%	71	25.5%	61	23.9%	43	27.6%
	Total	313	100.0%	278	100.0%	255	100.0%	156	100.0%
Total	Improved	0	0.0%	549	66.7%	518	67.0%	312	64.3%
	Unchanged	925	100.0%	88	10.7%	96	12.4%	57	11.8%
	Worsened	0	0.0%	186	22.6%	159	20.6%	116	23.9%
	Total	925	100.0%	823	100.0%	773	100.0%	485	100.0%

Figure 3. Frequency of participants with a change in HbA1c over time.



4.2.2 SECONDARY OUTCOME VARIABLES

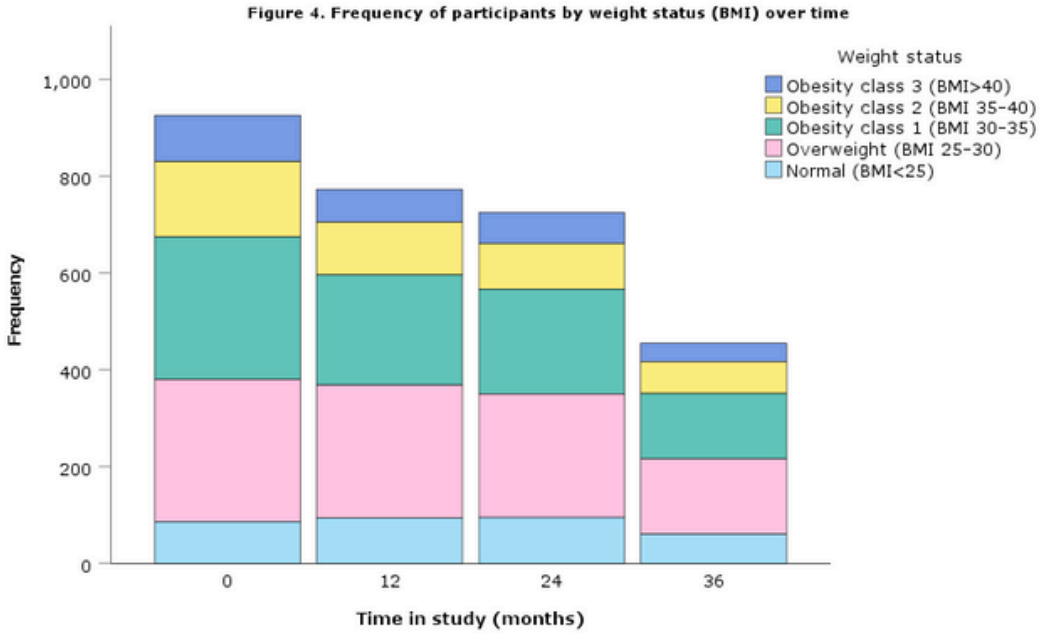
Change in weight status

The proportion of participants with obesity has decreased from 59% at baseline to 51,7% at 24 and 52.4% at 36 months, see Table 5. The change in weight status at each follow-up point is illustrated in Figure 4.

Table 5a. Weight Status (BMI) over time by Gender.

		Month in the study							
		0		12		24		36	
Gender	Weight	N	Percent	N	Percent	N	Percent	N	Percent
Female	Normal (BMI<25)	57	9.3%	66	12.9%	65	13.4%	45	14.4%
	Overweight (BMI	178	29.1%	159	31.0%	147	30.3%	95	30.4%
	Obesity class 1	180	29.5%	146	28.5%	144	29.7%	89	28.5%
	Obesity class 2	117	19.1%	83	16.2%	77	15.9%	51	16.3%
	Obesity class 3	79	12.9%	59	11.5%	52	10.7%	32	10.3%
	Total	611	100.0%	513	100.0%	485	100.0%	312	100.0%
Male	Normal (BMI<25)	29	9.3%	28	10.8%	30	12.5%	15	10.5%
	Overweight (BMI	115	36.7%	115	44.2%	108	45.0%	61	42.7%
	Obesity class 1	114	36.4%	82	31.5%	73	30.4%	46	32.2%
	Obesity class 2	38	12.1%	26	10.0%	17	7.1%	15	10.5%
	Obesity class 3	17	5.4%	9	3.5%	12	5.0%	6	4.2%
	Total	313	100.0%	260	100.0%	240	100.0%	143	100.0%
Total	Normal (BMI<25)	86	9.3%	94	12.2%	95	13.1%	60	13.2%
	Overweight (BMI	293	31.7%	274	35.4%	255	35.2%	156	34.3%
	Obesity class 1	295	31.9%	228	29.5%	217	29.9%	135	29.7%
	Obesity class 2	155	16.7%	109	14.1%	94	13.0%	66	14.5%
	Obesity class 3	96	10.4%	68	8.8%	64	8.8%	38	8.4%
	Total	925	100.0%	773	100.0%	725	100.0%	455	100.0%

4.2.2 SECONDARY OUTCOME VARIABLES



4.2.2 SECONDARY OUTCOME VARIABLES

The mean BMI at each follow-up point is presented in Table 6, and the corresponding mean change from baseline in BMI is presented in Table 7.

Table 6a. BMI over time by Gender.

		Month in the study			
Gender	BMI	0	12	24	36
Female	N	611	513	485	312
	Mean	32.6	31.9	32.7	31.6
	Standard Deviation	6.4	6.6	21.5	6.3
	Median	31.8	30.7	30.6	30.5
	Minimum	18.7	19.1	19.2	19.4
	Maximum	57.4	57.5	482.5	59.9
Male	N	313	260	240	143
	Mean	30.9	30.2	31.1	30.3
	Standard Deviation	5.0	4.7	19.3	5.0
	Median	30.4	29.2	29.1	29.3
	Minimum	19.4	19.1	20.3	19.4
	Maximum	52.0	47.0	319.2	53.8
Total	N	925	773	725	455
	Mean	32.0	31.3	32.2	31.1
	Standard Deviation	6.0	6.1	20.8	5.9
	Median	31.2	30.4	30.1	30.1
	Minimum	18.7	19.1	19.2	19.4
	Maximum	57.4	57.5	482.5	59.9

4.2.2 SECONDARY OUTCOME VARIABLES

Table 7a. Mean change in BMI over time by Gender.

Gender	Change in BMI from baselir	Month in the study 0	12	24	36
Female	N	611	513	485	312
	Mean	0.0	-0.5	0.1	-1.1
	95.0% Lower CL for Mean	0.0	-0.7	-1.6	-1.5
	95.0% Upper CL for Mean	0.0	-0.4	1.9	-0.7
	Standard Deviation	0.0	2.2	19.9	3.5
	Median	0.0	-0.3	-0.4	-0.7
	Minimum	0.0	-16.2	-12.4	-12.6
	Maximum	0.0	22.4	431.6	36.7
Male	N	313	260	240	143
	Mean	0.0	-0.2	0.8	-0.2
	95.0% Lower CL for Mean	0.0	-0.4	-1.6	-0.6
	95.0% Upper CL for Mean	0.0	-0.1	3.2	0.1
	Standard Deviation	0.0	1.5	18.5	2.2
	Median	0.0	-0.3	-0.3	-0.2
	Minimum	0.0	-6.3	-9.1	-11.6
	Maximum	0.0	10.6	285.7	10.8
Total	N	925	773	725	455
	Mean	0.0	-0.4	0.4	-0.8
	95.0% Lower CL for Mean	0.0	-0.6	-1.1	-1.1
	95.0% Upper CL for Mean	0.0	-0.3	1.8	-0.5
	Standard Deviation	0.0	2.0	19.4	3.2
	Median	0.0	-0.3	-0.3	-0.5
	Minimum	0.0	-16.2	-12.4	-12.6
	Maximum	0.0	22.4	431.6	36.7

Missing data analysis

There were 54 dropouts in the study at 36 months, 14 men and 40 women,
Of these, 33 reported personal reasons, 15 has moved, 5 were having a severe disease, and one deceased.

5 DISCUSSION

Among the 925 participants included at baseline, over 50% have reported data for the primary outcome variable at 36 months .

The results show that over half of the participants have left the pre-diabetes status in HbA1c at both 24 and 36 months. It is statistically significant and robust as the 95% confidence interval shows that this proportion has a very good precision and that proportion. This indicates that a significant proportion of participants have changed their lifestyle with this programme, and It suggests that this proportion is likely to sustain until 60 months.

Previous studies have shown that the proportion of participants who develop type 2 diabetes after 3 years of lifestyle intervention is 11% compared to 23% in the control group, i.e. a risk reduction of 58%. The 24 and 36 months follow-up data shows that it is <10% who have developed a HbA1C value which indicates diabetes. The effectiveness is sustained and looks promising to be maintained until 60 months.

The results show that the intervention also has en effect on reducing BMI and the proportion of participants who were obese at baseline has decreased and more participants have normal weight at 24 months and 36 months than at baseline. Overall, 85% of participants felt that the health programme contributed to improved quality of life. This could likely explain the low dropout rate of only 54 participants, which is just over 5%.

Limitations of the results include the fact that there is still a large proportion of participants who have not yet reported 36-month data. However, the findings are so strong that there is very unlikely that this results will be altered when all data are collected. We also see that the first (last) report of the 24-month follow-up data are very similar to this updated 24-month report.

A further limitation in the interpretation of the results is absence of information on contemporary medical and pharmacological treatment of the participants. The participants were recruited from outside the health care system but it is not unlikely that some may have been patients in the health care system for medical treatment
Health Integrator has not been provided with any data regarding medication that participants may have used or are currently using or stopped using.

It would be possible to link data with the drug registry to measure the participants' drug consumption during the same time period. However, this data is not accessible for us and beyond the scope of the intervention.

6 CONCLUSION

The participants have statistically significant left the pre-diabetes status in HbA1c at 24-month and that the effectiveness is sustained at 36-months follow-up, i.e., 12 months after stop of the active intervention. The results are very promising to reach the primary objective at 60-months and the proportion of participants who developed the diagnostic criteria for type 2 diabetes in HbA1c is very low. It shows that the lifestyle intervention works and that it also lowers BMI and improves perceived quality of life and mental health. The effect comes already after six months and lasts until at least 36 months which is a unique outcome when it comes to behavioural changes. This intervention shows that the results can be maintained over time.

07 USER STORY

Charles joined the Region of Stockholm Health Programme in 2021 and now, three years after the start of the programme, he is no longer at risk of diabetes. His HbA1c value has decreased from 44 mmol/mol at the start to 34 mmol/mol today.

Here are the benefits Charles has experienced from the health programme:

- Improved eating habits
- Increased energy
- Weight loss
- Change in lifestyle
- Reduced blood sugar levels and blood pressure
- Medication-free
- Holistic approach to health

"I don't want to feel as I did before the program. The Health Program has provided me with the right conditions to successfully change my diet and start exercising, which has brought my long-term blood sugar down from 44 to 34. To be honest, I don't think many people will succeed without a coaching aspect. It's the holistic approach that is key where you get all the help you need in one place."

Charles
Participant in the Region of Stockholm Health Programme

REFERENCES

Link to: 24-month report

APPENDIX

LIST OF TABLES AND FIGURES

2. SUPPLEMENTARY TABLES AND FIGURES

Table 2b. Primary Outcome Variable HbA1c by Age.

		Month in the study							
		0		12		24		36	
Age interval	HbA1C	N	Percent	N	Percent	N	Percent	N	Percent
-55 years	Normal <42 mmol/mol	0	0.0%	211	53.4%	192	52.5%	115	50.2%
	Prediabetes 42-47 mmol/mol	445	100.0%	159	40.3%	154	42.1%	91	39.7%
	Diabetes >=48 mmol/mol	0	0.0%	25	6.3%	20	5.5%	23	10.0%
	Total	445	100.0%	395	100.0%	366	100.0%	229	100.0%
>55 years	Normal <42 mmol/mol	0	0.0%	216	50.3%	219	53.8%	127	49.6%
	Prediabetes 42-47 mmol/mol	477	100.0%	194	45.2%	154	37.8%	107	41.8%
	Diabetes >=48 mmol/mol	0	0.0%	19	4.4%	34	8.4%	22	8.6%
	Total	477	100.0%	429	100.0%	407	100.0%	256	100.0%
Total	Normal <42 mmol/mol	0	0.0%	427	51.8%	411	53.2%	242	49.9%
	Prediabetes 42-47 mmol/mol	922	100.0%	353	42.8%	308	39.8%	198	40.8%
	Diabetes >=48 mmol/mol	0	0.0%	44	5.3%	54	7.0%	45	9.3%
	Total	922	100.0%	824	100.0%	773	100.0%	485	100.0%

Table 2d. Primary Outcome Variable HbA1c with Confidence Interval.

		Month in the study			
HbA1C		0	12	24	36
Normal <42	N	0	427	411	242
mmol/mol	Percent	0.0%	51.8%	53.2%	49.9%
	95.0% Lower CL for Percent		48.4%	49.6%	45.5%
	95.0% Upper CL for Percent		55.2%	56.7%	54.3%
Prediabetes 42-47	N	924	353	308	198
mmol/mol	Percent	100.0%	42.8%	39.8%	40.8%
	95.0% Lower CL for Percent		39.5%	36.4%	36.5%
	95.0% Upper CL for Percent		46.2%	43.3%	45.2%
Diabetes >=48	N	0	44	54	45
mmol/mol	Percent	0.0%	5.3%	7.0%	9.3%
	95.0% Lower CL for Percent		4.0%	5.3%	6.9%
	95.0% Upper CL for Percent		7.0%	8.9%	12.1%

2. SUPPLEMENTARY TABLES AND FIGURES

Table 3b. Mean HbA1c over Time by Age.

Age interval	HbA1C	Month in the study 0	12	24	36
-55 years	N	445	395	366	229
	Mean	43.35	41.76	41.50	41.88
	Standard Deviation	1.49	4.54	3.71	4.58
	Median	43.00	41.00	41.00	41.00
	Minimum	42.00	30.00	30.00	27.00
	Maximum	47.00	87.00	63.00	64.00
>55 years	N	477	429	407	256
	Mean	43.51	41.94	41.65	41.75
	Standard Deviation	1.59	4.25	3.62	3.94
	Median	43.00	41.00	41.00	42.00
	Minimum	42.00	35.00	33.00	29.00
	Maximum	47.00	100.00	58.00	58.00
Total	N	922	824	773	485
	Mean	43.43	41.86	41.58	41.81
	Standard Deviation	1.54	4.39	3.66	4.25
	Median	43.00	41.00	41.00	42.00
	Minimum	42.00	30.00	30.00	27.00
	Maximum	47.00	100.00	63.00	64.00

Table 3d. Mean change in HbA1c over time by Age.

Age interval	Change in HbA1c from baseline	Month in the study 0	12	24	36
-55 years	N	446	395	366	229
	Mean	0.00	-1.59	-1.86	-1.54
	95.0% Lower CL for Mean	0.00	-2.01	-2.24	-2.13
	95.0% Upper CL for Mean	0.00	-1.17	-1.48	-0.96
	Standard Deviation	0.00	4.26	3.71	4.48
	Median	0.00	-2.00	-2.00	-2.00
	Minimum	0.00	-14.00	-17.00	-15.00
	Maximum	0.00	42.00	21.00	22.00
>55 years	N	477	428	407	256
	Mean	0.00	-1.53	-1.81	-1.79
	95.0% Lower CL for Mean	0.00	-1.90	-2.14	-2.27
	95.0% Upper CL for Mean	0.00	-1.15	-1.48	-1.30
	Standard Deviation	0.00	3.94	3.39	3.97
	Median	0.00	-2.00	-2.00	-2.00
	Minimum	0.00	-12.00	-13.00	-17.00
	Maximum	0.00	53.00	11.00	15.00
Total	N	923	823	773	485
	Mean	0.00	-1.56	-1.83	-1.67
	95.0% Lower CL for Mean	0.00	-1.84	-2.08	-2.05
	95.0% Upper CL for Mean	0.00	-1.28	-1.58	-1.29
	Standard Deviation	0.00	4.09	3.54	4.22
	Median	0.00	-2.00	-2.00	-2.00
	Minimum	0.00	-14.00	-17.00	-17.00
	Maximum	0.00	53.00	21.00	22.00

Table 4b. Proportion of participants with improvment in HbA1c by Age.

		Month in the study							
		0		12		24		36	
Age interval	Change in HbA1c from baseline	N	Percent	N	Percent	N	Percent	N	Percent
-55 years	Improved	0	0.0%	266	67.3%	240	65.6%	145	63.3%
	Unchanged	446	100.0%	41	10.4%	54	14.8%	26	11.4%
	Worsened	0	0.0%	88	22.3%	72	19.7%	58	25.3%
	Total	446	100.0%	395	100.0%	366	100.0%	229	100.0%
>55 years	Improved	0	0.0%	283	66.1%	278	68.3%	167	65.2%
	Unchanged	477	100.0%	47	11.0%	42	10.3%	31	12.1%
	Worsened	0	0.0%	98	22.9%	87	21.4%	58	22.7%
	Total	477	100.0%	428	100.0%	407	100.0%	256	100.0%
Total	Improved	0	0.0%	549	66.7%	518	67.0%	312	64.3%
	Unchanged	923	100.0%	88	10.7%	96	12.4%	57	11.8%
	Worsened	0	0.0%	186	22.6%	159	20.6%	116	23.9%
	Total	923	100.0%	823	100.0%	773	100.0%	485	100.0%

Table 5b. Weight Status (BMI) over time by Age.

		Month in the study							
		0		12		24		36	
Age interval	Weight	N	Percent	N	Percent	N	Percent	N	Percent
-55 years	Normal (BMI<25)	33	7.4%	33	8.9%	40	11.7%	25	11.9%
	Overweight (BMI 25-30)	132	29.6%	128	34.6%	107	31.2%	70	33.3%
	Obesity class 1 (BMI 30-35)	146	32.7%	115	31.1%	110	32.1%	61	29.0%
	Obesity class 2 (BMI 35-40)	80	17.9%	57	15.4%	51	14.9%	36	17.1%
	Obesity class 3 (BMI>40)	55	12.3%	37	10.0%	35	10.2%	18	8.6%
	Total	446	100.0%	370	100.0%	343	100.0%	210	100.0%
>55 years	Normal (BMI<25)	53	11.1%	61	15.1%	55	14.4%	35	14.3%
	Overweight (BMI 25-30)	161	33.7%	146	36.2%	148	38.7%	86	35.1%
	Obesity class 1 (BMI 30-35)	148	31.0%	113	28.0%	107	28.0%	74	30.2%
	Obesity class 2 (BMI 35-40)	75	15.7%	52	12.9%	43	11.3%	30	12.2%
	Obesity class 3 (BMI>40)	41	8.6%	31	7.7%	29	7.6%	20	8.2%
	Total	478	100.0%	403	100.0%	382	100.0%	245	100.0%
Total	Normal (BMI<25)	86	9.3%	94	12.2%	95	13.1%	60	13.2%
	Overweight (BMI 25-30)	293	31.7%	274	35.4%	255	35.2%	156	34.3%
	Obesity class 1 (BMI 30-35)	294	31.8%	228	29.5%	217	29.9%	135	29.7%
	Obesity class 2 (BMI 35-40)	155	16.8%	109	14.1%	94	13.0%	66	14.5%
	Obesity class 3 (BMI>40)	96	10.4%	68	8.8%	64	8.8%	38	8.4%
	Total	924	100.0%	773	100.0%	725	100.0%	455	100.0%

2. SUPPLEMENTARY TABLES AND FIGURES

Table 6b. BMI over time by Age.

Age interval	BMI	Month in the study 0	12	24	36
-55 years	N	446	370	343	210
	Mean	32.6	31.9	32.6	31.4
	Standard Deviation	6.2	6.1	16.7	5.7
	Median	32.0	30.9	30.9	31.0
	Minimum	19.9	20.3	20.5	21.2
	Maximum	57.4	57.5	319.2	47.8
>55 years	N	478	403	382	245
	Mean	31.5	30.8	31.8	30.9
	Standard Deviation	5.9	6.0	23.9	6.1
	Median	30.8	29.7	29.7	30.0
	Minimum	18.7	19.1	19.2	19.4
	Maximum	57.1	57.1	482.5	59.9
Total	N	924	773	725	455
	Mean	32.0	31.3	32.2	31.1
	Standard Deviation	6.0	6.1	20.8	5.9
	Median	31.2	30.4	30.1	30.1
	Minimum	18.7	19.1	19.2	19.4
	Maximum	57.4	57.5	482.5	59.9

2. SUPPLEMENTARY TABLES AND FIGURES

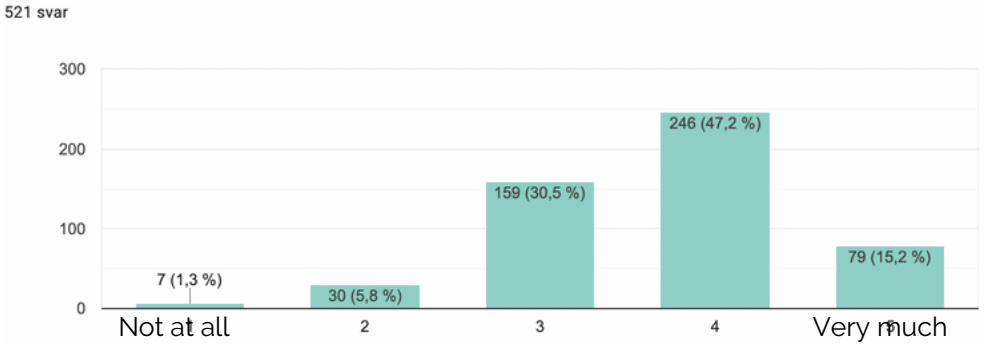
Table 7b. Mean change in BMI over time by Age.

Age interval	Change in BMI from baseline	Month in the study 0	12	24	36
-55 years	N	446	370	343	210
	Mean	0.0	-0.5	0.1	-1.0
	95.0% Lower CL for Mean	0.0	-0.7	-1.6	-1.4
	95.0% Upper CL for Mean	0.0	-0.3	1.8	-0.6
	Standard Deviation	0.0	2.0	15.6	2.7
	Median	0.0	-0.3	-0.4	-0.6
	Minimum	0.0	-16.2	-12.4	-12.6
	Maximum	0.0	3.8	285.7	5.1
>55 years	N	478	403	382	245
	Mean	0.0	-0.4	0.6	-0.6
	95.0% Lower CL for Mean	0.0	-0.6	-1.7	-1.1
	95.0% Upper CL for Mean	0.0	-0.2	2.8	-0.2
	Standard Deviation	0.0	2.0	22.3	3.5
	Median	0.0	-0.3	-0.3	-0.4
	Minimum	0.0	-8.7	-12.2	-12.3
	Maximum	0.0	22.4	431.6	36.7
Total	N	925	773	725	455
	Mean	0.0	-0.4	0.4	-0.8
	95.0% Lower CL for Mean	0.0	-0.6	-1.1	-1.1
	95.0% Upper CL for Mean	0.0	-0.3	1.8	-0.5
	Standard Deviation	0.0	2.0	19.4	3.2
	Median	0.0	-0.3	-0.3	-0.5
	Minimum	0.0	-16.2	-12.4	-12.6
	Maximum	0.0	22.4	431.6	36.7

2. SUPPLEMENTARY TABLES AND FIGURES

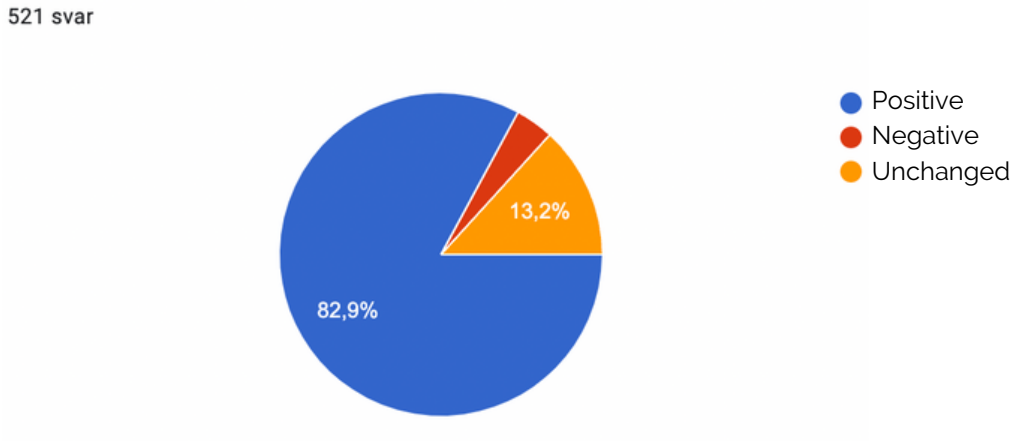
FIGUR 6

Has your quality of life changed since you joined the health program?



FIGUR 7A&B

In what direction has the change taken place?



Improved quality of life

Would you say that the health program has been a contributing factor to improved quality of life?