

Effects of a Digital Lifestyle Program in Routine Care for Adults at Cardiometabolic Risk

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Digital Lifestyle Program



- Based on Swedish clinical guidelines¹ and clinical experience
- Designed for sustainability: resource-efficient, scalable, and digitally accessible
- Implementation in august 2022 at the Behavioral Medicine Clinic, University Hospital of Umeå, Sweden
- Lifestyle behaviors: **diet, physical activity**, tobacco, alcohol
- Multidisciplinary team

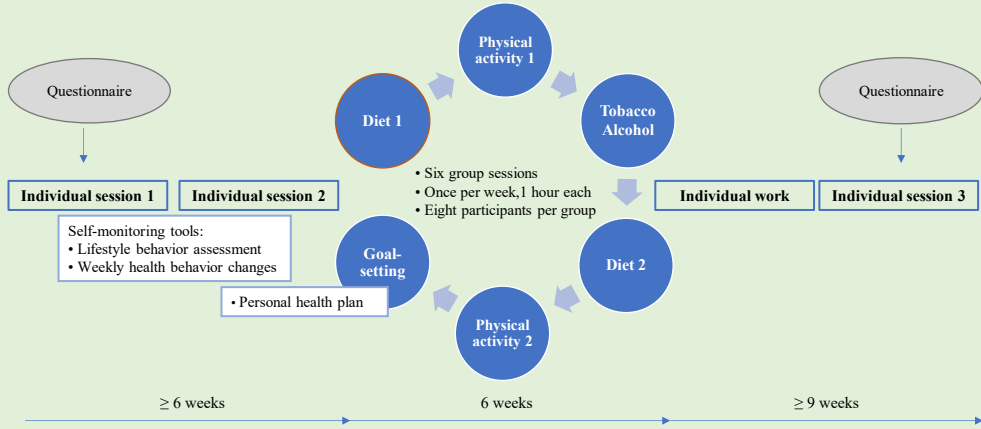
¹Swedish National Board of Health and Welfare. *National clinical guideline for unhealthy lifestyle habits: prevention and treatment*. Sweden; 2022.



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Figure 1. Timeline and content of the digital lifestyle program during 2022-23

The program is regularly updated and refined.



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Program Evaluation - Health Behaviors, Weight, and Experience

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Participant characteristics 2022-23

- N = 251
- 71% women
- Age: 54 ± 11 år
- BMI: 34.9 ± 4.6
- 47% reported hypertension and 10% type 2 diabetes
- 92% were referred from healthcare services
- Time from baseline to post-intervention: 6 months



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Effects on health behaviors - DIET

Diet	Baseline	Post-intervention	Change	P-value	n*
Eating all 3 main meals, n (%)	173 (74.2)	187 (80.3)	-	0.020	233
Regular breakfast consumption, n (%)	205 (81.7)	225 (89.6)	-	<0.001	251
Dietary index score, mean (SD)	5.9 (2.2)	7.1 (2.0)	1.2 (1.9)	<0.001	250

SD, Standard deviation.

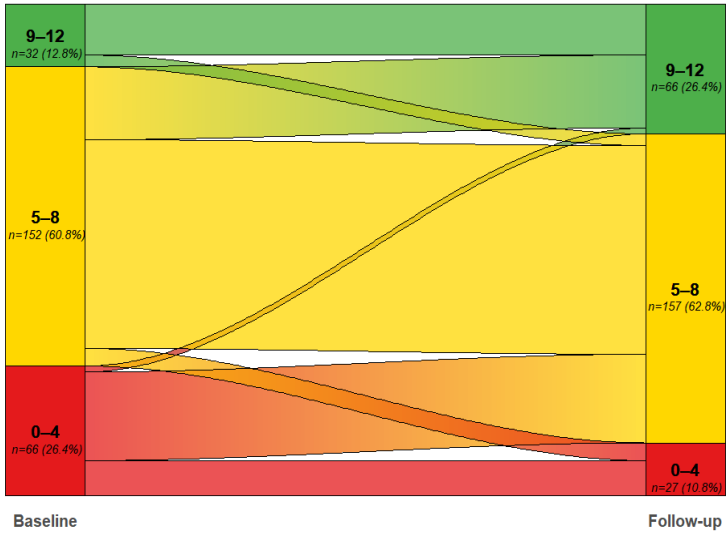
Evaluated using questionnaires from the Swedish National Clinical Guidelines for Unhealthy Lifestyle Habits.

*Participants with data available at both baseline and follow-up were included.



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Figure 2. Changes in dietary index score categories¹ (n = 250)



¹Dietary index score categories

0-4, substantial unhealthy eating habits;
 5-8, possibly unhealthy eating habits;
 9-12, healthy eating

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Effects on health behaviors – PHYSICAL ACTIVITY

Physical activity	Baseline	Post-intervention	Change	P-value	n*
Minutes per week, mean (SD)	192 (127)	224 (126)	32 (117)	<0.001	251
<150 minutes per week ¹ , n (%)	106 (42.2)	81 (32.3)	-	0.003	251
Daily sedentary time, hours, mean (SD)	7.6 (3.7)	7.1 (3.3)	-0.56 (3.1)	0.004	251

SD, Standard deviation.
 Evaluated using questionnaires from the Swedish National Clinical Guidelines for Unhealthy Lifestyle Habits.
 *Participants with data available at both baseline and follow-up were included.
¹Insufficient physical activity



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Effects on health behaviors – ALCOHOL & TOBACCO USE

Risk behaviors	Baseline	Post-intervention	Change	P-value	n*
Alcohol consumption, yes	190 (81.2)	184 (78.6)	-	0.134	235
At-risk alcohol consumption ¹ , yes, n (%) [*]	42 (17.9)	29 (12.4)	-	0.007	234
Tobacco use ² , yes, n (%) [*]	50 (21.0)	46 (19.5)	-	0.21	235

SD, Standard deviation.

Evaluated using questionnaires from the Swedish National Clinical Guidelines for Unhealthy Lifestyle Habits.

^{*}Participants with data available at both baseline and follow-up were included.

¹Defined as >9 standard drinks/week or ≥4/occasion for women; >14 standard drinks/week or ≥5/occasion for men, ≥1 ×/month; One standard drink = 12 g alcohol.

²Any use of cigarettes or snuff.



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Effects on health behaviors – BODY WEIGHT

Body weight	Baseline	Post-intervention	Change	P-value	n*
Weight, kg, mean (SD)	101.4 (22.5)	99.3 (22.3)	-2.2 (4.2)	<0.001	246
Weight change, %, mean (SD)	-	-	-2.1 (4.0)	<0.001	246
BMI, mean (SD)	34.8 (6.4)	34.1 (6.4)	-0.75 (1.5)	<0.001	246

SD, Standard deviation.

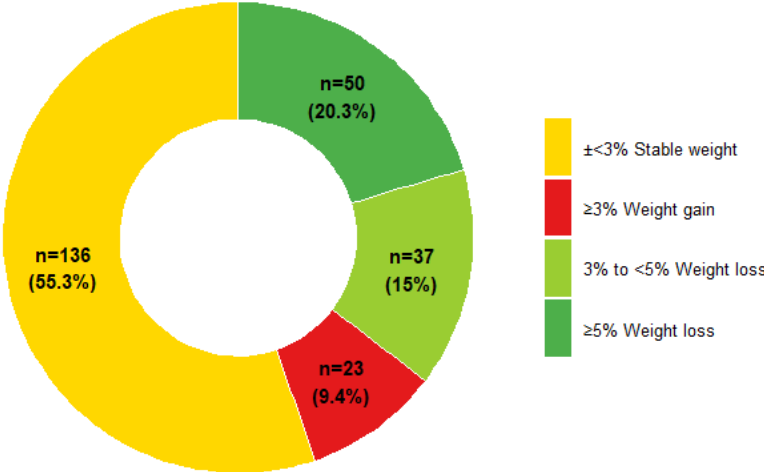
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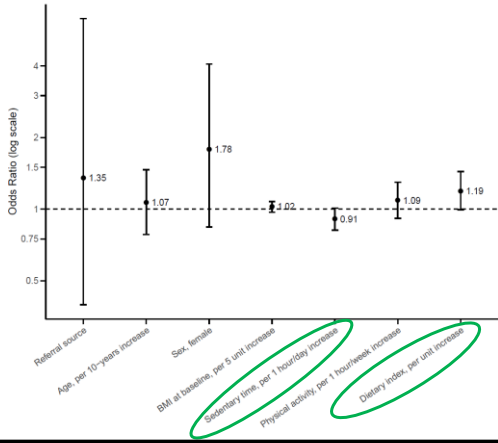
Figure 3. Categorical distribution of weight change (%) (n = 246)



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Figure 4. Predictors of achieving at least 5% weight loss (n = 246)

- **Dietary index score** was positively associated (OR 1.22 per unit increase, 95% CI 1.02–1.46).
- **Sedentary time** showed a weak inverse association (OR 0.91 per additional hour/day, 95% CI 0.81–1.00).



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Relevance – Sustainable, Equitable & Resilient Healthcare

- Scalable, resource-efficient prevention embedded in routine care
- Digital delivery enhances equity of access and reach
- Promotes participant self-management
- Multidisciplinary, participatory model
- Supports sustainable and resilient healthcare systems



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Thank you!



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