Evidence based tools for weight loss maintenance

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Approximately 250 mio. Adult Europeans are overweight and 90-100 mio. obese.
Prevalence of personal weight control attempts in adults: a systematic review and meta-analysis.

Seventy-two studies: n = 1,184,942.

In the general population about 40% adults have tried to lose weight at some point in time and also in the last five years.

About 25% of adults from general populations reported trying to maintain weight annually.

Weight loss is easy,
Weight loss maintenance is difficult...

K Hall and K Scott: 2018;102:183-197
Weight loss is easy, Weight loss maintenance is difficult…

Engagement with evidence-based programmes

But drop out and relapse are common…

90-95% can loose weight
5-10% can maintain it in the long run
Scalable solutions are needed!

Interventions that support sustained WLM are needed to optimise and achieve the long-term health effects of successful weight loss interventions.
Established community-based and commercial approaches are effective for initial weight loss.

However, most people regain the lost weight within 12-24 months.

Dombrowski et al. BMJ. 2014; 348: g2646:
- There is limited evidence that weight loss can be sustained beyond 24 months.
- Effective WLM interventions have been highly resource intensive and hence not scalable
- Attempts to use technology - to make interventions flexible, efficient and scalable - have not used contemporary digital technologies.
- WLM interventions using the internet for intervention delivery were not generally effective.
The key challenge is *not* to find new ways to achieve weight loss – but ways to *maintain* it that are scalable.
5 year European Commission-funded Research and Innovation Action (€5 million).

Personalising Health and Care - self management of health and disease: citizen engagement and mHealth.

Evidence-based digital technologies and tools for weight loss maintenance.
What is the NoHoW?

Personalisable portfolio of ICT-enabled tools, that equips users with evidence based behaviour change techniques and methods for weight loss maintenance.

We test, in a randomised controlled trial (RCT) in the UK, Denmark and Portugal, how these tools can most effectively be used to support long-term weight loss maintenance (WLM).

Results will directly feed into the development of new products and services, to provide a much needed WLM services, that can be up-scaled and disseminated through a commercial partner (weight management company, food/pharma industry, Health insurance company, it-device company, public health etc..)
What questions will be answered in NoHoW?

Why don’t lifestyle interventions work in the long run?

Why do people start regaining weight?

Who are those that succeed?

Can we make low cost it-based solutions that will help prevent regain?
IT technology

Builds on participant’s previous positive experiences with weight loss

*Novel approach using motivation, autonomy, goal setting, emotion regulation and stress management*

*Personalized feedback to maintain weight*
What are the solutions in NoHoW?
Trial design

CID = Clinical investigation day

2 x 2 RCT

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<tr>
<th>Emotion/stress regulation</th>
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- Screening
- Active intervention
- Follow-up

0 months | 6 months | 12 months | 18 months | 24 months

Baseline | Primary outcomes

3 European countries (UK, DK, Pt)
1600 participants: BMI >25 and lost ≥5% in last 12 months

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement no. 643309. The material presented and views expressed here are the responsibility of the author(s) only. The EU Commission takes no responsibility for any use made of the information set out.”
1 - We test in NoHoW if behavior change techniques are helpful in weight loss maintenance

Self-monitoring (tracking), goal setting, and action control
(Self-regulatory skills to promote volitional aspects of WLM)

Building autonomous engagement and self-determined motivation
(Maintain engagement with sustained behaviour change eg. for maintaining dietary and physical activity behaviours along with self-efficacy)

(Stubbs et al., Nutrition Bulletin 2013).
2 – We test in NoHoW if stress management and emotion regulation can prevent weight relapses and improve WLM

- *may* undermine pathways of planned behaviour change and successful self-regulation.

- *may* alter the physiological response to energy intake or expenditure towards higher/more efficient efficient storage
NoHoW Toolkit (TK)

It delivered behavioural tools (motivation and emotion/stress regulation)

Motion trackers

Inventories

Datahub
Trial design

CID = Clinical investigation day

0 months 6 months 12 months 18 months 24 months

Baseline Primary outcomes

Screening Active intervention Follow-up

CID 1 CID 2 CID 3 CID 4

2 x 2 RCT

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Engagement analysis

• investigating how participants use the tool: e.g. frequency of visits, time spent on the intervention, use of specific intervention components, dose of intervention
Acknowledgements

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