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What App? Mobile Health Interventions for Promoting Healthy Eating

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Objectives

- **Systematic literature review:**

  To review the effectiveness of mHealth interventions for promoting healthy eating in adults

- **RCT – SaltSwitch Trial:**

  To explore the 10-week effect of the SaltSwitch app on the salt content of packaged food purchases for adults with CVD

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Background

- **Globally 38 million people die each year from NCDs**
- **11% of premature mortality in NZ is due to NCDs (obesity is the main risk factor)**
- **Current strategies for improving nutritional intakes and reducing obesity are not working**

Search strategy

Based on **Cochrane Handbook for Systematic Reviews**

Higgins, 2011

- Medline
- Embase
- PsycInfo
- CENTRAL
- Grey literature
- Google Scholar

Literature review methods

- RCTs
- Reported in English
- Participants ≥18 years old, of any gender, ethnicity or health status

- HbA1c as only measure of healthy eating
- Control group given mHealth intervention
- Healthy eating not main focus

Outcomes of healthy eating

Eligible outcomes: measures of healthy eating such as:

- Dietary intake (e.g. specific nutrients or food groups)
- Biochemical markers (e.g. lipids)
- Clinical measures (e.g. weight, BP)

Study flow diagram

385 studies found

208 records after duplicates removed

157 excluded

51 full-text articles assessed

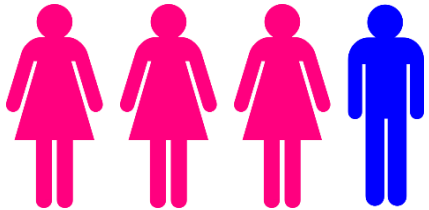
12 studies included (21 reports)

Results: 12 RCTs

1 to 24 months duration (median: 6 months)

Participants

- n=2018 overweight / obese adults
- More females than males
- Mean age: 45 years old
- Various ethnicities



mHealth interventions

- **Smartphones (n=3)**
- **Regular mobile phones (n=5)**
- **PDAs (n=4)**

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Results

- **5/12** trials demonstrated a positive effect of mHealth interventions on healthy eating

- **However, only 1/5 powered** to detect differences in treatment outcomes (Haapala et al.)

Example: Haapala et al. (Finland)

- n=125 overweight & obese participants (78% F)
- Study duration: 12 months

- 50% received text message weight loss programme
- 50% received no intervention (control)

- Between-group difference in weight loss: 3.4kg (p=0.006)

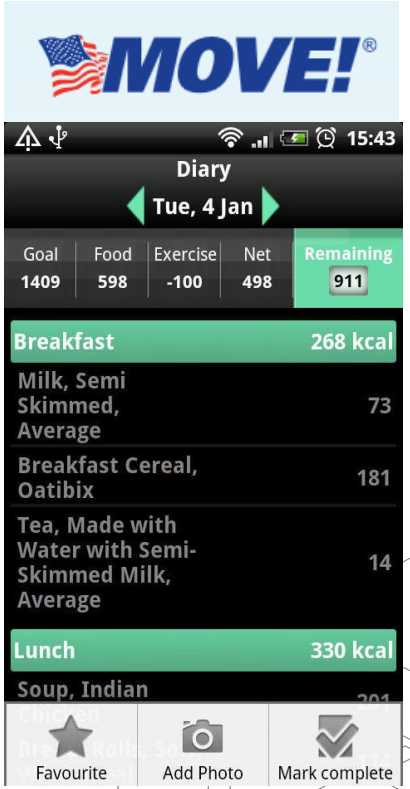
Haapala et al., 2009

Example: Spring et al. (Chicago)

- n=70 overweight and obese veterans with chronic pain enrolled in MOVE! (85% M) (12 months)

- 50% received PDA to record food intake
- 50% received no intervention (control)

- Between-group difference in weight loss: 3.5kg at 6 months, 2.9kg at 12 months



Spring et al., 2013

Bias and quality

- **10/12** trials at high risk of bias
- **2/12** trials at unclear risk of bias

- Only **3/12** trials adequately powered
- Large between-trial heterogeneity
  - Variety of interventions received
  - Variety of outcomes measured

Conclusion

Currently there is insufficient evidence to determine if mHealth interventions have an effect on healthy eating

A greater number of higher quality studies are needed

SaltSwitch – a mobile solution

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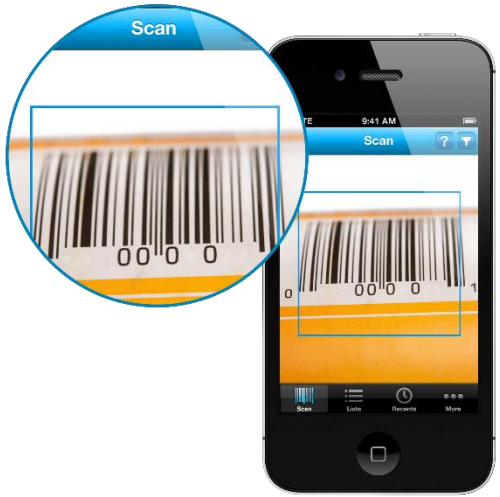
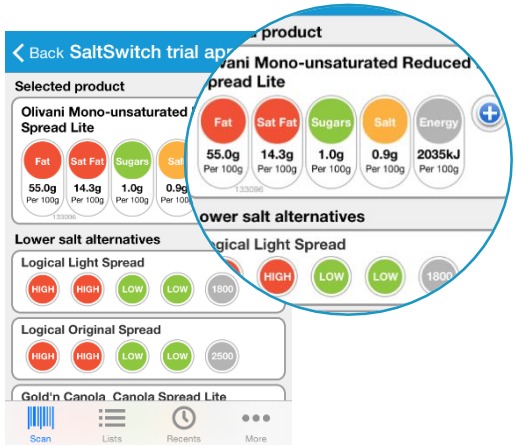
Bupa

- **Free** smartphone app

1) Scan



2) Switch



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Sneak peak

10-week effect of the SaltSwitch app:

- No between-group differences in the salt content of food purchases

- Those who received the app had lower blood pressure and lower urinary sodium

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Awaited

The results of the main SaltSwitch trial are awaited…

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Questions?