

Maintenance of behaviour change after a 12-week mHealth lifestyle programme for young adults.

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REAL WORLD SOLUTIONS FOR OBESITY, DIABETES AND CARDIOVASCULAR DISEASE

THE CHARLES PERKINS CENTRE



Young adults: a high risk group for obesity

Younger adults are

- Gaining the most weight e.g. 0.7 kg per annum in Australia
- Becoming obese e.g. for 18 to 24 year old women prevalence increased from 6% to 21% in < two decades
- Highest consumers of sugar sweetened-beverages
- Binge drinking alcohol
- Lowest consumers of fruit and vegetables
- High consumers of take-away foods
- Reducing physical activity levels after leaving school although 50% sufficiently active (e.g. Australia)



Design of a multicomponent mHealth program

TXT2BFIT

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TXT 2B FiT

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* Coaching calls

* Text messages

* Emails

* Smartphone apps – for self monitoring, information and practical tips

* Nutrition booklet

* Downloadable web resources

Incorporates change processes of the Transtheoretical model and control theory

RCT of TXT2BFiT mobile healthy lifestyle programme

Aim

- To test maintenance of the 12-week TXT2BFiT intervention

Setting

- Community – using General Practices and other recruitment

Intervention

2 phone calls, 6 text messages and 6 emails for maintenance.

No further contact for control

Subjects

- 18 to 35 years old – GEN Y
- BMI 25 to 31.9 kg/M² or BMI ≥ 23 and gained > 2 kg in 12 months
- One or more lifestyle behaviours failing recommendations
 - fruit intake < 2 daily
 - sugary drinks >1 L weekly
 - physical activity < 60 minutes daily
 - vegetables < 5 serves
 - energy dense take-away meals > 1 per week

When commencing TXT2BFiT

Hebden et al. Trials 2013 14 75-78; Partridge et al. JMIR MHealth UHealth 2015 3 e66

Study assessment

Screening

- On-line screener to assess eligibility
- Visit to GP for weight, (primary outcome) height and consent
- Randomization

Baseline

- On-line survey to assess secondary outcomes (lifestyle behaviours; fruit & veg; SSB; take-aways; physical activity) and self-report weight
- TXT2BFiT n=125; Control n=125

12 weeks

- **End of TXT2BFiT program**
- On-line survey to assess primary and secondary outcomes
- In person weight
- TXT2BFiT n=110; Control n=104

36 weeks

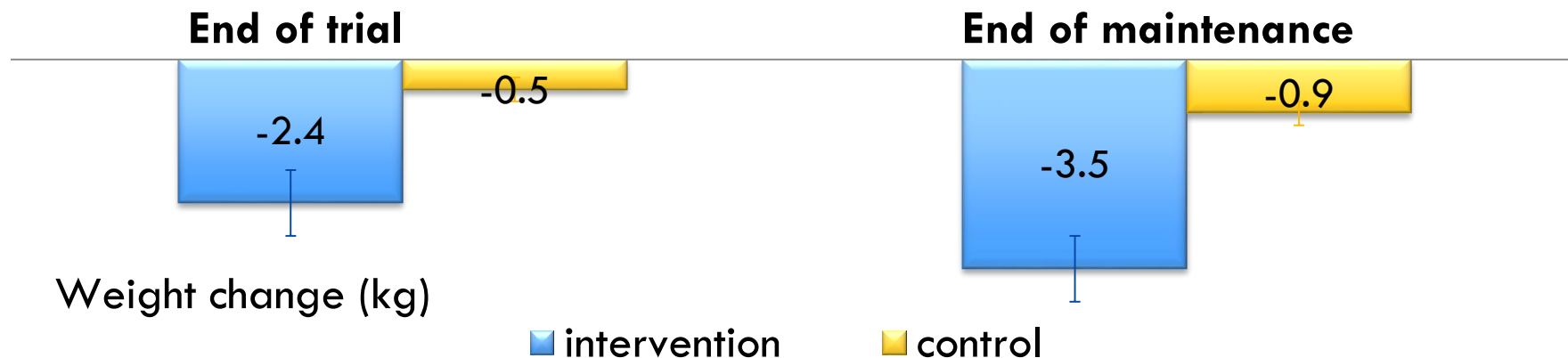
- **End of maintenance**
- On-line survey to assess primary and secondary outcomes
- TXT2BFiT n=98; Control n=106

Body Weights: **TXT2BFiT** intervention versus control

	Baseline 0 weeks		End of Programme 12 weeks			End of Maintenance 36 weeks		
	TXT2BFiT ^a	Control ^a	TXT2BFiT ^a	Control ^a	Mean Diff ^b	TXT2BFiT ^a	Control ^a	Mean Diff ^b
kg	78.4±11.2	79.3±12.6	76.0±10.7	78.8±12.6	-3.7 (-6.1,-1.3) P=0.003	74.9±10.8	78.4±12.8	-4.3 (-6.9,-1.8) P=0.001


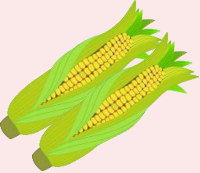

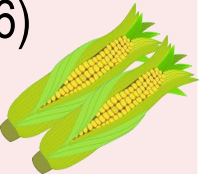
^a mean ± standard deviation

^b mean difference between groups (95% Confidence Intervals) adjusted for practice and gender



Odds ratios (OR) for improvements in fruit & vegetables

Analysed with cumulative logistic regression models with general estimating equations to account for correlation between time points and multiple imputations for missing values.

Improved intake		Fruit OR (95% CI)	Vegetables OR (95% CI)
End of programme 12 weeks	Control	1.00 (ref)	1.00 (ref)
	TXT2BFiT Intervention	1.31 (0.79, 2.15) P=0.29 	2.03 (1.23, 3.35) P=0.01 
End of maintenance 36 weeks	Control	1.00 (ref)	1.00 (ref)
	TXT2BFiT Intervention	2.38 (1.41, 4.01) P=0.001 	1.94 (1.19, 3.16) P=0.008 

Odds ratios (OR) for improvements in sugar-sweetened beverages and take-away

Improved intake		Sugar-sweetened Beverages OR (95% CI)	Take-away meals OR (95% CI)
End of programme 12 weeks	Control	1.00 (ref)	1.00(ref)
	TXT2BFiT Intervention	1.67 (1.07, 2.61) P=0.02	2.16 (1.18, 3.95) P=0.01
End of maintenance 36 weeks	Control	1.00 (ref)	1.00 (ref)
	TXT2BFiT Intervention	1.74 (1.10, 2.77) P=0.018	1.98 (1.17, 3.34) P=0.01

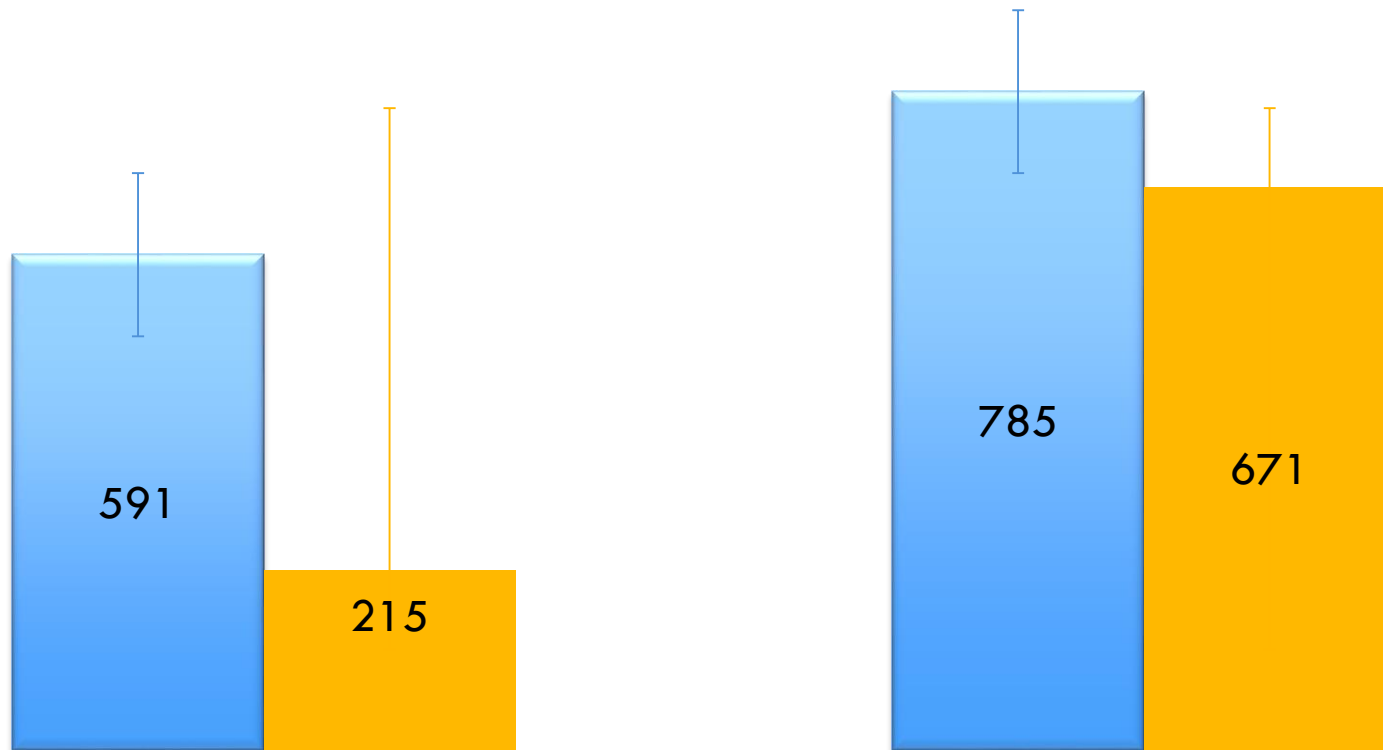


Physical Activity MET-mins

Mean change \pm SD

End of programme 12 weeks

End of maintenance 36 weeks



■ Intervention

■ Control

Conclusions

- Tailoring of a theory-based intervention to individuals at risk of obesity led to weight loss and improved lifestyles with continued benefits 6 months after the 12 week programme concluded
- mHealth affords the opportunity to deliver effective health promotion en masse but in an individualized manner and potentially at low cost
- The behaviours addressed in this program are prevalent in young adults in all western countries so it is potentially transferable



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