Clinical guidelines for dietary treatment of obesity in adolescence

Presented by

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Wait and see?

- Increases in BMI for waitlisted controls (Truby 2016)
- High BMI is highly likely to persist into adulthood - relative risk 5.21 [95%CI: 4.50, 6.02] (Simmonds 2016)
- Increased risk of future complications (Twig et al 2016 and 2018)
  - T2DM
  - NAFLD
  - CAD
  - Some cancers

Truby, H., et al., PLoS One, 2016. **11**(3): p. e0151787
Simmonds, M., et al. Obesity Reviews, 2016. **17**(2): p. 95-107
Twig, G., et al. NEJM, 2016. 374(25): p. 2430-2440.
Twig, G., et al. Obesity, 2018. 26(4): p. 776-781

Defining effective management

- Reduction in weight outcomes (BMIz)
- Changed weight gain trajectory
- Improvement in obesity associated complications
- Changed markers of future complications

Steinbeck, K. S., et al. (2018). "Treatment of adolescent obesity." Nature Reviews Endocrinology.

What do adolescents want?

Table 2 Motivations for weight loss in adolescents with overweight and obesity

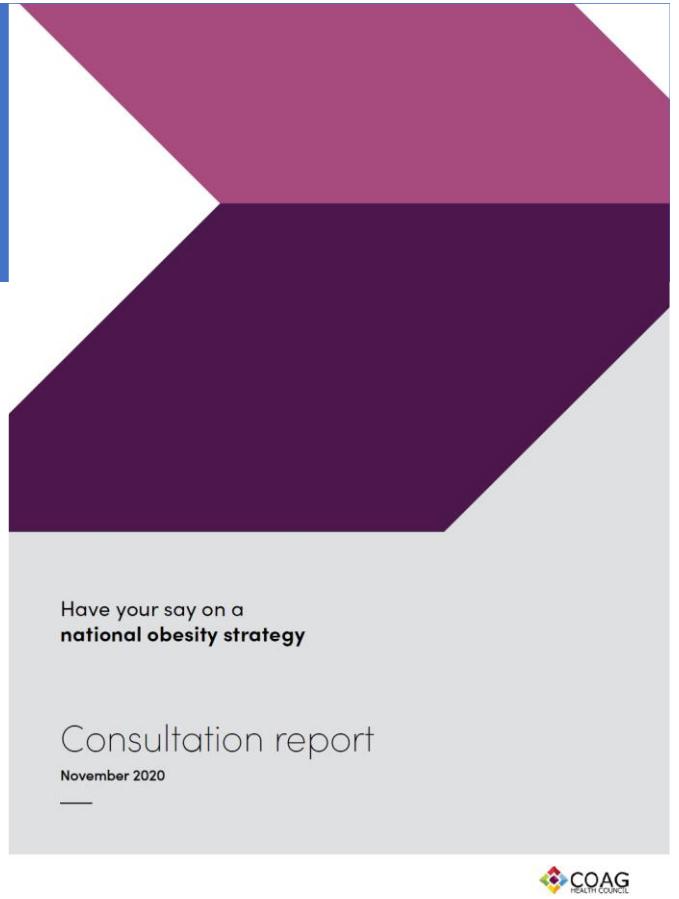
Author	Instrument for assessing the motivation for weight loss	Motivations for weight loss
Jensen et al. [19]	Questionnaire with open questions	Appearance, desire for better health, doing things to enjoy, major life transition, peer acceptance, self-motivation and self-worth
Taylor et al. [20]	Interview with open questions	Celebration symbolizing a girl's transition to womanhood at her 15th birthday, improved health, avoidance of teasing and bullying, inability to fit into "normal" or stylish clothing, and limitations on movement, physical activity, and exercise
In-iv et al. [21]	Questionnaire with open questions	Cosmetic purposes, medical reasons, and attractiveness to the opposite sex
Morinder et al. [22]	Interview with open questions	Feeling good and accepting oneself, being healthy and in good physical shape, having more self-esteem, and not worrying about hospital visits and future diseases
Reece et al. [23]	Interview with open questions	Avoidance of bullying and a desire to integrate socially with peers
Lofrano-Prado et al. [24]	Interview with open questions	To become healthy, fit in clothes, personal appearance, bullying, self-esteem, physical fitness, and quality of life

Silva et al. BMC Pediatrics (2018) 18:364 https://doi.org/10.1186/s12887-018-1333-2

What do adolescents want?

- Holistic approach to care

- Better recognition: general health, wellbeing, healthy lifestyles and weight



Clinical practice guidelines

Clinical Practice Guidelines

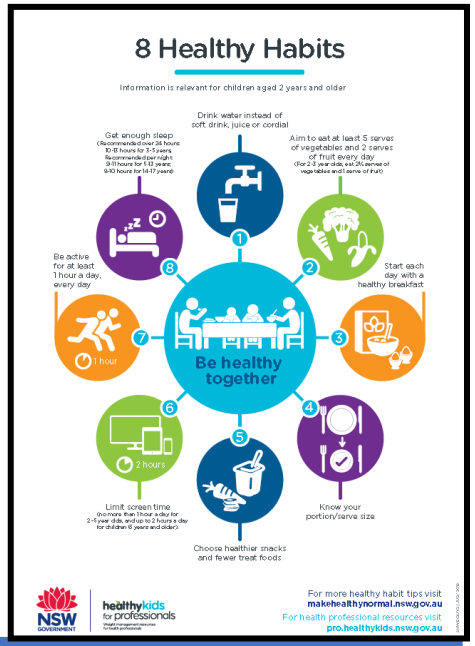
- No current clinical practice guidelines for overweight and obesity management in Australia

Treatment goals		Recommended by guideline/28
Weight recommendations	Weight maintenance	17
	Weight loss for specific groups based on age, pubertal growth status, stage of growth, or BMI percentile	15
	Weight loss for children and adolescents with obesity and associated complications, or severe obesity	21

Alman KL, et al (2021). Dietetic management of obesity and severe obesity in children and adolescents: A scoping review of guidelines. Obesity Reviews; 22:e13132.

Clinical Practice Guidelines

- All guidelines (n = 28) recommend a multicomponent, lifestyle intervention
  - diet, physical activity, and behaviour modification
  - 27 recommend family involvement
  - 22 address sedentary behaviours
  - 4 provide sleep recommendations



Treatment		Recommended by guideline/28
Dietary approaches	Caloric restriction	14
	Traffic Light diet	6
	Intensive (VLED, PSMF, very low carb, ketogenic diets)	7

Alman KL, et al (2021). Dietetic management of obesity and severe obesity in children and adolescents: A scoping review of guidelines. Obesity Reviews; 22:e13132.

Cochrane review 2017

Diet, physical activity and behavioural interventions for the treatment of overweight or obese adolescents aged 12 to 17 years

44 randomized controlled trials (RCTs)

Follow-up periods of 6–24 months

Intervention v wait-list or no treatment control

- BMI −1.18 kg/m^2 (95% CI −1.67 to −0.69)
- BMI z-score −0.13 units (−0.21 to −0.05)
- body weight −3.67 kg (−5.21 to −2.13).

The effect on weight outcomes persisted in those trials with longer follow-up periods of 18–24 months

Prescriptive dietary approaches

- Evidence base for a variety of approaches
- Aiming to achieve weight loss
- Adolescents with obesity and related comorbidities or severe obesity

- Varied macronutrient composition
- Very low energy diets (VLED)
- Intermittent energy restriction

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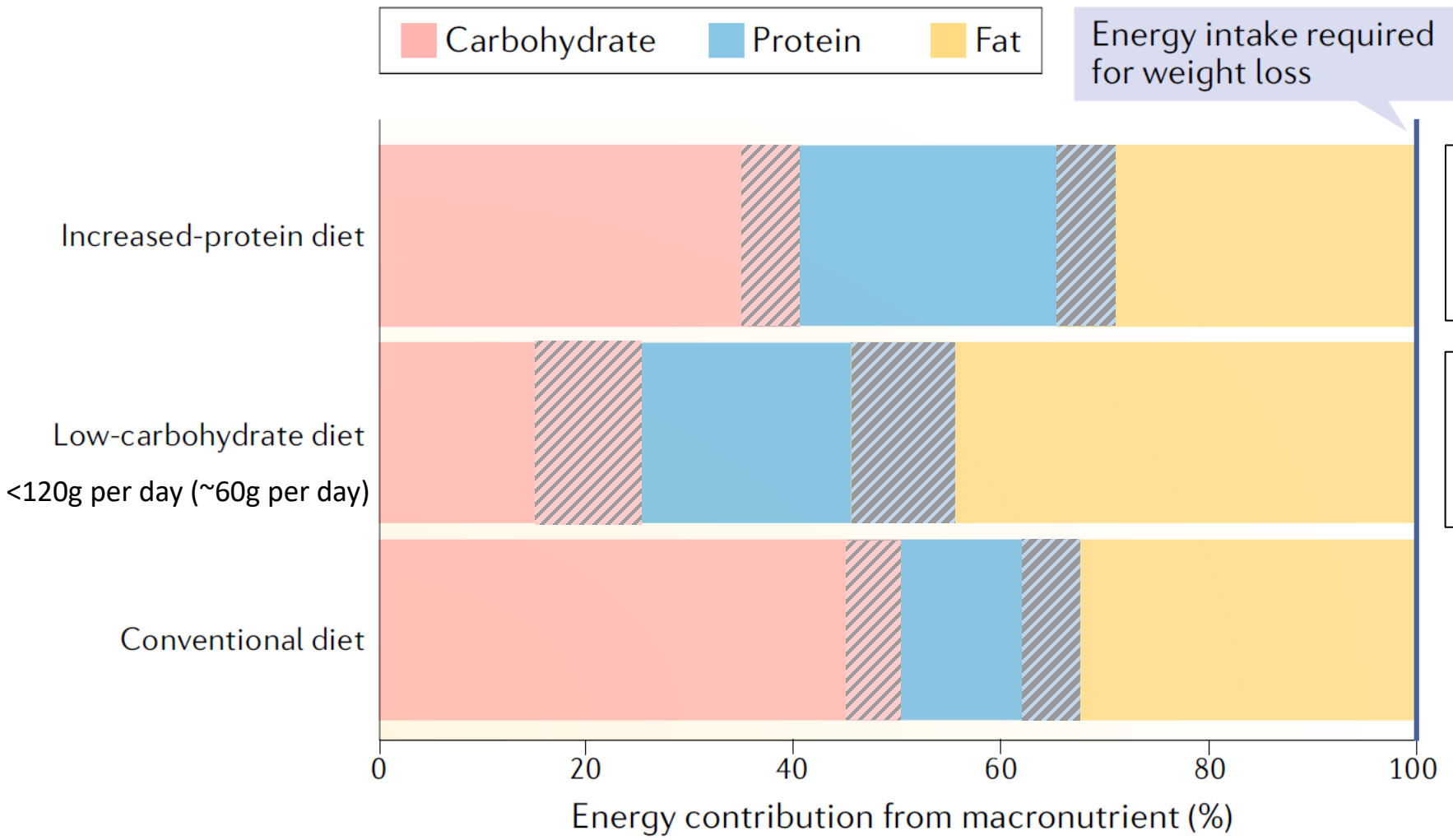
REVIEW ARTICLE

Pediatric OBESITY WILEY

Novel dietary interventions for adolescents with obesity: A narrative review

Johanna K. Hoare[1,2] | Hiba Jebeile[1,2] | Sarah P. Garnett[1,2,3] | Natalie B. Lister[1,2]

Varied macronutrient composition



Hypothesized to lead to greater weight loss
No difference between groups

Possible short-term benefit
No difference in the longer term

Gow, M. L., et al. Nutrition reviews, 2014 72(7): 453-470.

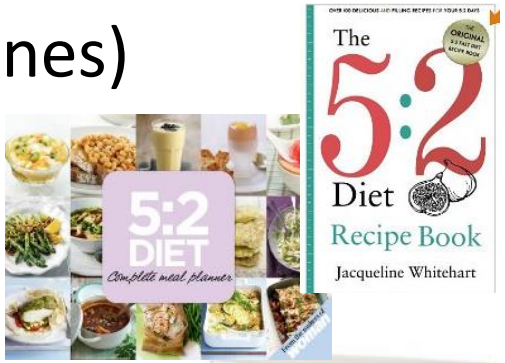
Very Low Energy Diets

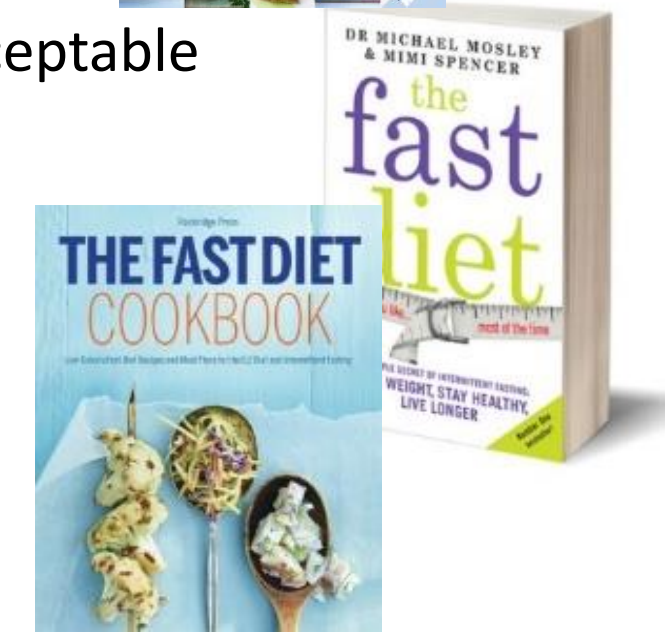
- Strict diet aiming for < 800kcal/day (3350kJ), typically <50g CHO
  - 3-4 meal replacements + 1 family meal (protein + vegetables) + low-carb vegetables + water
- Short-term intervention (4-12 weeks) then transition off
- Potential greater initial weight loss (kick start)
- Potential to reverse type 2 diabetes
- Increasing interest in bariatric surgery for adolescents
- Requires dietetic and medical supervision
  - Experienced teams

+

Intermittent energy restriction

- Emerging area of research (not within clinical practice guidelines)
- Popularised as intermittent fasting and 5:2 diet
  - 4:3 diet
    - 4 days healthy eating: 3 days very low energy diet (600-700 kcal)
  - One pilot study (n=30) – moderate weight change, feasible, acceptable
  - Large RCT underway (Sydney and Melbourne)





- Time-restricted feeding
  - e.g. 16:8 (16 hour overnight fast: 8 hour feeding window)
  - Only one case series
  - Larger trial planned

Jebeile H., et al. The Journal of Nutrition. 2019; 149(7):1189-1197
Vidmar AP., et al. Journal of Food Science Nutrition Research. 2019; 2(3):236-244

Fast Track to Health
NOW RECRUITING

Central Coast site coming soon!

FAST TRACK to health

www.fasttracktrial.org

- Multi-site RCT
  - The Children's Hospital at Westmead
  - Monash University/Monash Children's Hospital

Aim: to determine if Intermittent energy restriction (IER) results in a lower BMI z-score after 52 weeks, compared to continuous energy restriction (CER), in adolescents with obesity.

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Monash Children's Hospital
MONASH University
the children's hospital at Westmead
THE UNIVERSITY OF SYDNEY

Dietary considerations

- Eating behaviours
  - Irregular meal patterns
  - Breakfast/ meal skipping
  - May avoid eating at school
  - Large portions, nutrient poor
  - Night eating

- Nutritional adequacy of the intervention – growth and development

Lister et al European Journal of Clinical Nutrition (2017) 71, 646–651
Jebeile et al Clinical Obesity (2020) 10:e12370

Summary

- For adolescents affected by moderate to severe obesity, evidence suggests:
  - Interventions should be multi-component professionally supervised aiming for weight maintenance/loss with
  - Modest improvements in weight and cardiometabolic outcomes
  - Intensive / prescriptive therapies should be considered - possible alternatives to pharmacotherapy or surgical intervention

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