

THE SCIENCE OF WEIGHT LOSS

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Key learning take home messages

1. To understand hierarchy of dietary advice for managing nutrition and weight

Titrate energy restriction from ADGs to VLEDs versus adherence versus time

2. To prescribe technology tools to support each level of dietary advice hierarchy

Match technology to client resources, ability and capacity

3. To be aware of research evidence on technology use for personalised nutrition

Technology evolves but can make services cheaper, equitable, timely and empowering

<https://www.nhmrc.gov.au/guidelines-publications/n57>

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Outline

1. Why talk diet (and technology)?
2. My dietary advice hierarchy – linked to supportive technologies
3. Technology use - linked to evidence based change in diet and behaviour
4. Case studies

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Daily kilojoule intake in Australia has increased

From 1983/85 to 1995 energy intake in Australia increased by:-

- 3-4% in adults
(260-400kJ or 60-100 Calories per day)
- 11-15% in children
(660-1250kJ or 150-300 Cal per day)



Cook T, et al (2001). *Comparable Data on Food and Nutrient Intake and Physical Measurements from 1983, 1995 and 1995: National Nutrition Surveys*. AusInfo: Canberra, ACT.

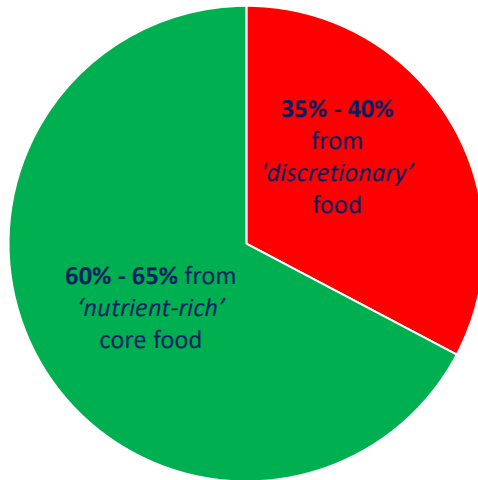
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% total daily energy intake



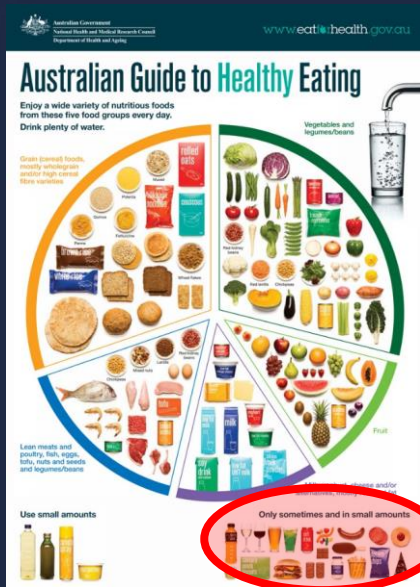
Over 1/3 of daily kilojoules come from energy-dense nutrient-poor 'junk' foods

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- AGHE - 'discretionary' foods should be limited to **10-15%** total daily kilojoules
- '*... only sometimes and in small amounts*'

Eat for Health <https://www.eatforhealth.gov.au/>

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The main culprits contributing to high discretionary intakes

1. Alcohol	4.8%
2. Cakes, muffins, scones and desserts	3.4%
3. Confectionery, cereal/nut/fruit/seed bars	2.8%
4. Pastries	2.6%
5. Sweet/savoury biscuits	2.5%
6. Soft drinks/flavoured mineral water	1.9%
7. Potato fries	1.7%
8. Snack foods	1.5%

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Recommendations for weight management in adults		
RECOMMENDATION	GRADE	SECTION
Ask about and assess weight		
1 Use BMI to classify overweight or obesity in adults.	B	4.2
2 For adults, use waist circumference, in addition to BMI, to refine assessment of risk of obesity-related comorbidities.	C	4.3
3 For adults who are overweight or obese, discuss readiness to change lifestyle behaviours.	D	4.4,5
Advise adults about the health benefits of lifestyle change and weight loss		
4 Adults who are overweight or obese can be strongly advised that modest weight loss reduces cardiovascular risk factors.	A	5.1 Appendix C
5 Adults with prediabetes or diabetes can be strongly advised that the health benefits of modest weight loss include prevention, delayed progression or improved control of type 2 diabetes.	A	5.1 Appendix C
6 Adults with kidney disease or sleep apnoea can be advised that improvements in these conditions are associated with a 5% weight loss.	B	5.1 Appendix C
7 Adults with musculoskeletal problems, gastro-oesophageal reflux or urinary incontinence can be advised that weight loss of 5% or more may improve symptoms.	C	5.1 Appendix C
8 Adults who are overweight or obese can be advised that quality of life, self-esteem and depression may improve even with small amounts of weight loss.	C	5.1 Appendix C
Assist adults to lose weight through lifestyle interventions		
9 For adults who are overweight or obese, strongly recommend lifestyle change—including reduced energy intake, increased physical activity and measures to support behavioural change.	A	6.1 Appendix C
10 For adults who are overweight or obese, design dietary interventions that produce a 2500 kilojoule per day energy deficit and tailor programs to the dietary preferences of the individual.	A	6.1.1
11 For adults who are overweight or obese, prescribe approximately 300 minutes of moderate-intensity activity or 150 minutes of vigorous activity, or an equivalent combination of moderate-intensity and vigorous activities each week combined with reduced dietary intake.	CBR	6.1.2 Appendix C
Assist adults who require additional intensive intervention		
12 For adults with BMI > 30 kg/m ² or adults with BMI > 27 kg/m ² and comorbidities, orlistat may be considered as an adjunct to lifestyle interventions, taking into account the individual situation.	A	6.2.2 Appendix C
13 For adults with BMI > 40 kg/m ² , or adults with BMI > 35 kg/m ² and comorbidities that may improve with weight loss, bariatric surgery may be considered, taking into account the individual situation.	A	6.2.3 Appendix C
Develop an appropriate weight loss program		
14 For adults, include a self-management approach in weight management programs.	C	6.3.4 Appendix C
15 For active weight management in adults, arrange fortnightly review for the first 3 months and plan for continuing monitoring for at least 12 months, with additional intervention as required.	B	6.3.5 Appendix C
Long-term weight management		
16 For adults who achieve initial weight loss, strongly recommend the adoption of specific strategies, appropriate to their individual situation, to minimise weight regain.	A	7.2 Appendix C

- When patient ready – attempt weight loss
- Aim for 10% weight loss initially
- Keeping off 5% is success and improve health, ↓ meds, QOL
- Decrease energy intake
- Aim for ↓ 2500 kJ per day

NHMRC guidelines (234 pages)



www.nhmrc.gov.au/guidelines/publications/n57

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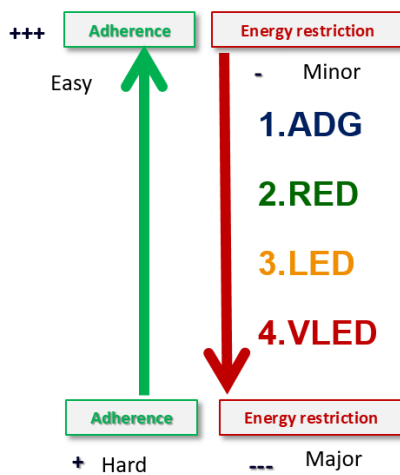
Defining MNT Medical Nutrition Therapy ... aka 'diets'

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MNT uses appropriate level of energy restriction to optimise adherence for each individual

This may change over time

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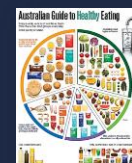
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Levels of energy restriction for Medical Nutrition Therapy (MNT)

DIETARY STRATEGY	DESCRIPTION	ENERGY INTAKE TARGET	How hard is it	Read more
HEALTHY EATING	Australian Dietary Guidelines and Australian Guide to Healthy Eating	Minor energy restriction or Energy balance	+	<ul style="list-style-type: none"> ▪ Balanced diet ▪ Weight loss maintenance
REDUCED ENERGY DIET	Identify key 'swaps' to achieve energy reduction	2000-4000 kJ less than usual intake daily intake	++	<ul style="list-style-type: none"> ▪ Drop 2000 kJs ▪ No fads
LOW ENERGY DIET	Prescribed eating plan	4200-7000 kJ/day	+++	<ul style="list-style-type: none"> ▪ The best diet
VERY LOW ENERGY DIET	Formulated meal replacement program	1800-2500kJ/day	++++	<ul style="list-style-type: none"> ▪ Fasting diet



1 Calorie ≈ 4.2 kilojoules

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+++
Easy

Adherence

Energy restriction

- Minor
1.ADG



Images	Tool	Weblink
	Eat for Health-calculator	www.eatforhealth.gov.au/node/added/calculator-servings
	Healthy Eating Quiz	www.healthyeatingquiz.com.au
	Food Switch App	https://www.foodswitch.com.au/#/home
Self-monitoring WiFi scales	Weight data to app	Various
Self-monitoring activity tracker / weight / diet	Pedometer, fitbit, Garmin, iWatch	Various


MNT uses appropriate level of energy restriction to optimise adherence for each individual

This may change over time

Take the free assessment of your diet quality


Compare your score within the family www.healthyeatingquiz.com.au

Get instant feedback and personal report







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Target	Tool	Weblink
Easy Diet Diary iPhone (free) app <ul style="list-style-type: none">Food recordCan send record to dietitian		https://xyris.com.au/products/easy-diet-diary/
Calorie King (free) website <ul style="list-style-type: none">monitor food intakeFood database		http://www.calorieking.com.au/
NSW Health 8700 website		http://www.8700.com.au/kj-in-food/guess-how-many/
Live Lighter program Junk food calculator		http://www.swapitwa.com.au/
Healthy Food Guide Portion size poster	Portion size poster (pdf)	https://www.healthyfoodguide.com.au/resources/portion-size-guide
Managing alcohol intake	5-min Drink audit Hello Sunday Morning Drinks calculator	https://alcoholthinkagain.com.au/Alcohol-Your-Health/Online-tools/5-Minute-drinking-audit https://www.hellosundaymorning.org/ https://drinkwise.org.au/standard-drinks-calculator/#


MNT uses appropriate level of energy restriction to optimise adherence for each individual

This may change over time

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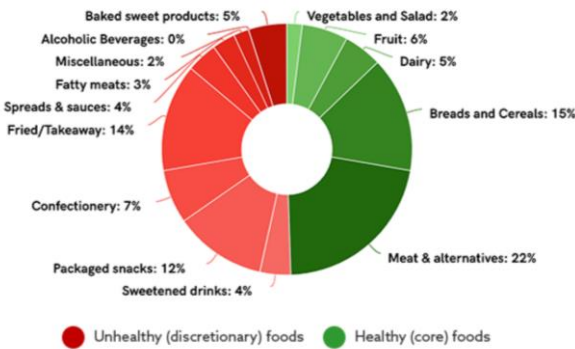
Australian Eating Survey



Online Australian Eating Survey

<http://australianeatingsurvey.com.au/>

Foods in your diet contributing to your energy intake



Note: The Australian Eating Survey is not a free tool

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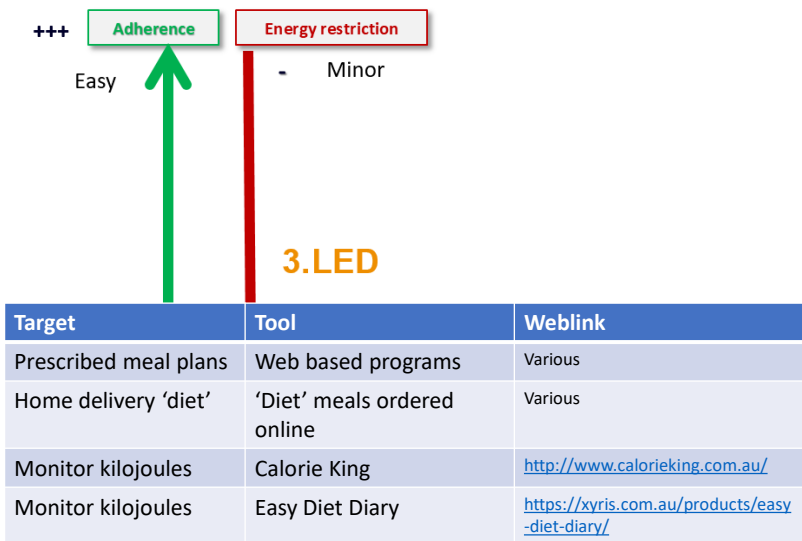
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MNT uses appropriate level of energy restriction to optimise adherence for each individual

This may change over time



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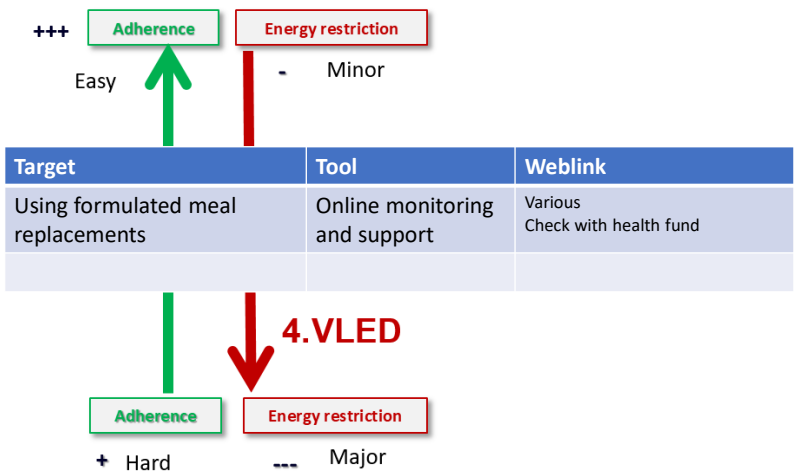
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MNT uses appropriate level of energy restriction to optimise adherence for each individual

This may change over time



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FREE - Massive Online Open Course:
 Started 27th January 2021, can enrol anytime between now and 3rd March 2021
 (ends 10th March 2021)



The Science of Weight Loss: Dispelling Diet Myths

NewcastleX - SWL101x
 Starts - Jan 27, 2021



View Course

Pursue a Certificate of Achievement to highlight the knowledge and skills you gain in this course.
 It's official. It's easily shareable. It's a proven motivator to complete the course.
[Learn more about the verified Certificate of Achievement.](#)

Upgrade To Verified

<https://www.edx.org/course/the-science-of-weight-loss-dispelling-diet-myths>

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Evidence summary

Technology	Tracking/ App	Population	Outcomes
Bathroom Scales	Weight %body fat Can Bluetooth to app	Adult males only	<ul style="list-style-type: none">Greater weight loss up to 2 yr
Fitbit	Weight loss Wrist worn device	Mid-age & older adults, esp women	<ul style="list-style-type: none">Greater weight loss up to 6m+ self-monitoring device more effective than standard care
eHealth (internet, website, email, self-monitoring device, SMS, computer program, podcasts, app, telehealth)	Various	Adults (mostly women)	<ul style="list-style-type: none">eHealth better than no/minimal treatmentExtra features better than 'basic' programsOnline programs same as standard care
IT interventions	Personalised feedback via IT	Adult males and females	Greater weight loss, waist reduction, no. with 5% weight loss

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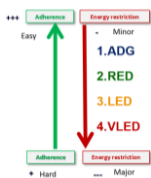
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Australian Dietary Guidelines

Adherence - high

1. Australian Guide to Healthy Eating



Energy restriction - low

1. Eat for Health
www.eatforhealth.gov.au
2. Eat for Health-calculator
www.eatforhealth.gov.au/node/add/calculator-servings
3. Healthy Eating Quiz
www.healthyeatingquiz.com.au
3. WiFi scales + app

- Review ± move to RED

Case Study – Sean 43yr

- Poor eating habits
- Gaining wt, BMI 27
- ↑bp, family Hx T2DM
- No previous attempt to eat better or reduce weight
- Limited knowledge of food or nutrition
- Uses smart phone
- Will buy wifi scales

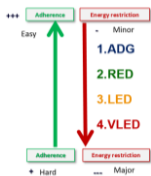
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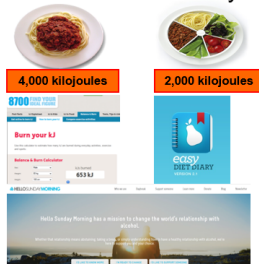


- Review ± move to LED or ADGs

RED- reduced energy diet

Adherence - medium

2. RED reduced energy diet 2000-4000kJ less/day



Energy restriction - medium

1. Use Easy Diet Diary to identify food/beverage swap to lower kJ alternatives
2. Manage portion sizes
3. Half plate as vegetables
4. Use 8700.com.au to learn about kilojoules and how many kilojoules burned in different activities
5. Alcohol monitoring tools



<https://www.obesityaction.org/>

Case Study – Brad 54yr

- Poor eating habits
- BMI 29, ↑LFTs
- Some knowledge of food groups
- Previous 'strict' diets did not work
- Goal is weight loss
- Owns Smart phone, computer, ipad, Fitbit

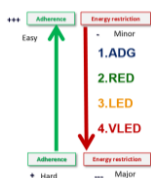
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- Review \pm move to RED/ADGs, refer APD

LED- low energy diet

Adherence – medium/low

3. LED- low energy diet
4200-5000 kJ/day



Energy restriction – medium/high

- Self-monitor diet, steps, weight, waist, sleep
- Home Delivery 2wk trial, then...
- Web-based 10-12 wk program
- or DIY CalorieKing online
- or DIY Australia's Healthy Weight Week 10 wk Fad Free eating plan

<http://www.healthyweightweek.com.au/healthy-eating/7-day-meal-plan/>



Case Study – Sue 51yr

- BMI 31, menopause
- Multiple previous attempts to 'diet'
- Never been 'strict'
- Some knowledge of food groups and kJs
- Weight affecting health and well being
- Owns, Smart phone, wifi scale, ipad, Fitbit

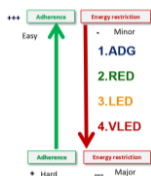
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- Review and refer APD

VLED - very low energy diet

Adherence – low

4. VLED- very low energy diet
1800-2500 kJ/day



Energy restriction – high

- >25 FMRs on the market
- Choose product that offers online support program



- Asher R, Collins CE. Very low energy diets for weight loss in adults. A Review. *Nutrition and Dietetics*. 2013 Jun; 70 (2):101–112.
- Collins CE, Jones J, Sherwood D. Formulated Meal Replacements: A comparison of the nutritional adequacy of available products. *Nutrition and Dietetics*. 2009; 66(1):12-19.



Case Study – Ben 54yr

- BMI 42
- Always on a 'diet'
- Weight is seriously impacting on health
- Uncontrolled diabetes
- Considering bariatric surgery
- Requires medical and dietetic support
- Owns, Smart phone, wifi scale, ipad, Fitbit

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NHMRC 5A's management model

THE 5As APPROACH TO WEIGHT MANAGEMENT

ASK AND ASSESS—current lifestyle behaviours and body mass index, comorbidities and other factors related to health risk

ADVISE—promote the benefits of a healthy lifestyle and explain the benefits of weight management

ASSIST—develop a weight management program that includes lifestyle interventions tailored to the individual (e.g. based on severity of obesity, risk factors, comorbidities), and plan for review and monitoring

ARRANGE—regular follow-up visits, referral as required (e.g. to a dietitian, exercise physiologist or psychologist) and support for long-term weight management



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5A's for using technology for improving dietary intake and weight management



1. **Ask:** About technology ownership, past diet and weight management strategies
2. **Assess:** Weight status, health, motivation for technology and adhering to varying kilojoules restriction, time expectation for treatment
3. **Advise:** Benefits of using technology for self-monitoring, healthy eating, kilojoule restriction lifestyle and weight
4. **Assist:** Selecting appropriate technology tools to help eat better, manage weight
5. **Arrange:** Follow-up to review progress. Add/subtract technology tools. Grade up or down the kJ restriction dietary approaches scale. Refer to dietitian. Evaluate nutritional status, weight status and health long-term

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Summary



1. Improving nutrition is key to improve well-being and achieving a healthy weight for life
2. Ask patients about technology use to support better nutrition and weight management
3. Move patients up and down the dietary advice Medical Nutrition Therapy hierarchy
4. Use technology tools to help achieve Medical Nutrition Therapy goals
5. Technology can improve access for those willing and able to use IT

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**PRIMARY
HEALTH
NETWORK**

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HUNTER NEW ENGLAND
AND CENTRAL COAST
An Australian Government Initiative



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...Thankyou

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