



## Changing Weight Gain Trajectories for Young Adults

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Canberra  
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## Outline

1. Overweight and obesity in Australian adults
2. Using data to inform prevention ideas - trajectories of weight change in the Australian Longitudinal Study on Women's Health
3. How and when to change the trajectories?



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## Outline

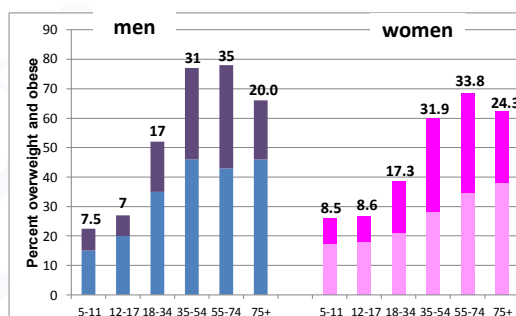


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## % overweight and obese in Australia



AIHW 2014-2015

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women's  
health  
australia




The Australian Longitudinal Study of Women's Health

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The Australian Longitudinal Study on Women's Health

### ALSWH Cohorts






 Born: 1973-78 1996: 18-23 y N= 14,427 2019: 41-46 y	 Born: 1946-51 1996: 45-50 y N=13,715 2019: 68-73	 Born: 1921-26 1996: 70-75 y N= 12,432 2019: 93-98y
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all surveyed in 1996 then at ≈3 year intervals

The Australian Longitudinal Study on Women's Health

### "new" young cohort established in 2012



 Born: 1973-78 1996: 18-23 y N= 14,427 2019: 41-46 y	 1989-95 2013 – 18-23y N= 17,011 2019: 26-29y
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## Methods – weight and height



### At every survey:

- ❖ Weight and height self-reported (women asked to check their weight on a scale)



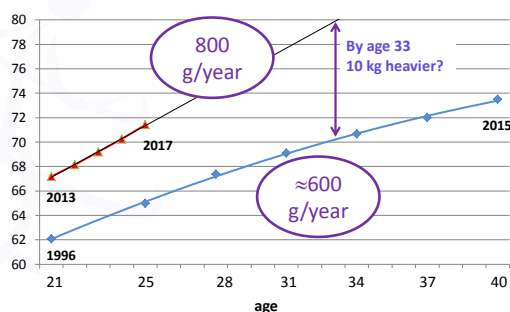
Burton et al Aus NZ J Pub Health 2010

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## Weight change young adult women

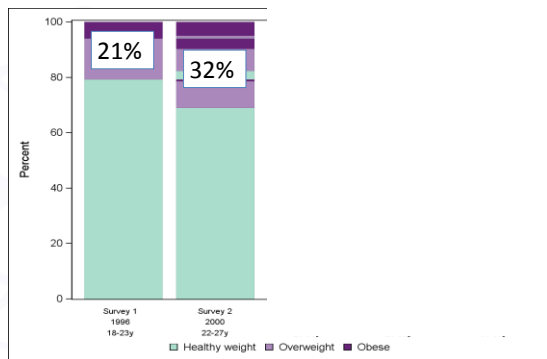


1996 – age 18-23 to 2015 age 40-45; N ≈ 7000  
 2012 – age 18-23 to 2017 age 23-28; N ≈ 8000



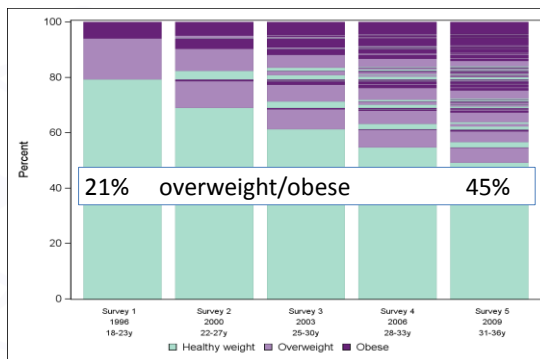
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## Patterns of change in BMI

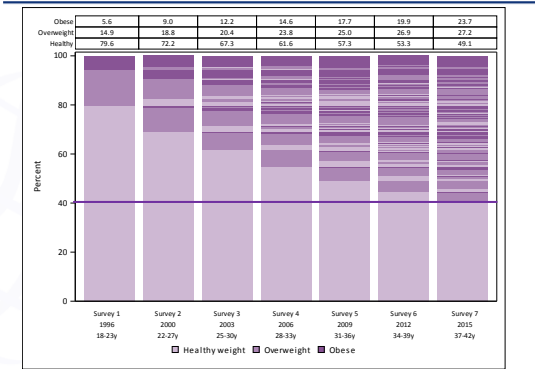


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## Patterns of change in BMI



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## Determinants of 10 y weight gain



- ❖ Average rate of gain 0.93% of initial weight/year
- ❖ 605g (580-635) per year for 65kg woman
- ❖ Partnered gained 1 kg more (than not)
- ❖ Partner + 1 baby gained 4kg more (than not)
- ❖ Physical activity, sitting time, energy intake
- ❖ Education, hours paid work
- ❖ Smoking, initial BMI

Brown et al Am J Prev Med 2010

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## Focusing on the healthy weight women

### Maintaining a Healthy BMI

Data From a 16-Year Study of Young Australian Women

Wendy J. Brown, PhD,<sup>1</sup> Enamul Kabir, PhD,<sup>2</sup> Bronwyn K. Clark, PhD,<sup>1,3</sup> Sjaan R. Gomersall, PhD<sup>1</sup>

4,881 women

healthy BMI at baseline (1996: 18-23y)

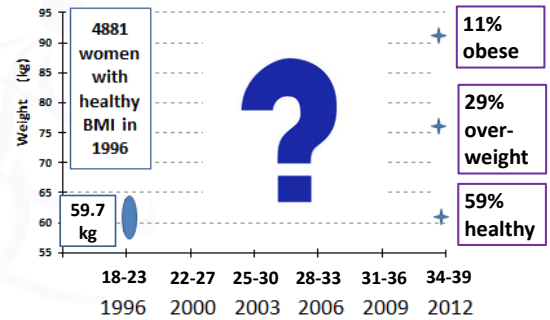
healthy, overweight, or obese BMI after 16-years

(2012: 34-39y)

Brown et al American J Prev Med 2016

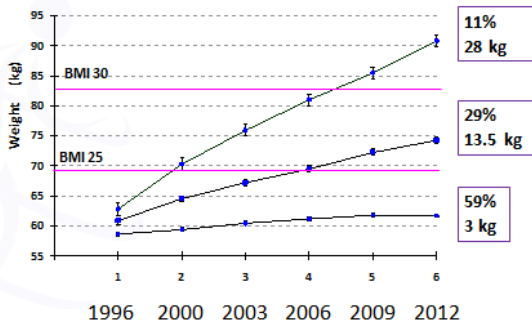
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## Weight and time



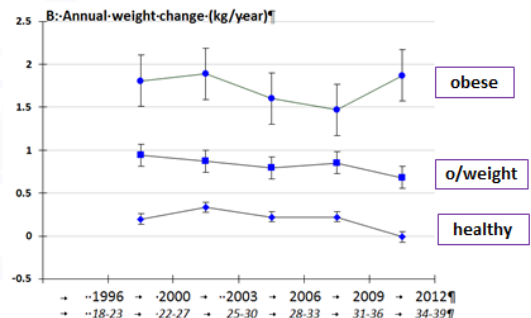
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## Weight change over time



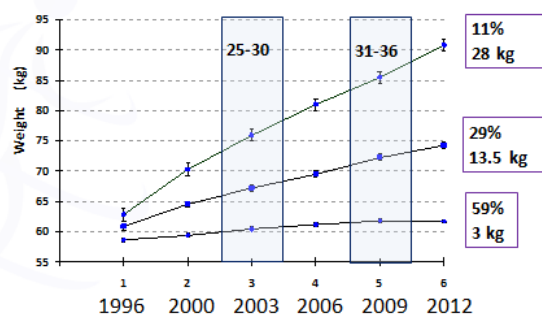
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## Rates of weight change



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**Determinants assessed in 2003 and 2009**  
GEE (adjusted models)



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**ORs for maintaining healthy BMI**

**MORE LIKELY**

- ❖ University degree 1.50 (1.14-2.00)
- ❖ Low alcohol 1.25 (1.10-1.41)
- ❖ Physical activity mod 1.23 (1.03-1.47) 500-1000 MET.min/week
- high 1.44 (1.20-1.72) >1000 MET.min/week

Brown et al Am J Prev Med 2016

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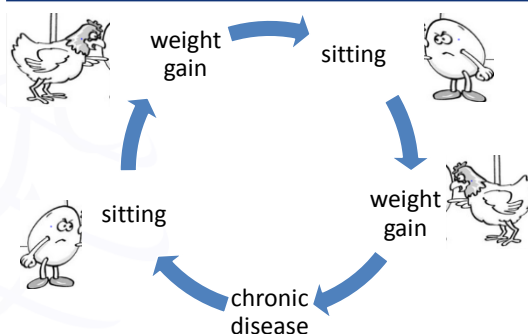
**ORs for maintaining healthy BMI**

**LESS LIKELY**

- ❖ Separated/ widowed 0.77 (0.66-0.89)
- ❖ Smokers 0.64 (0.50-0.81)
- ❖ Sitting time 5-8h 0.87 (0.77-0.99)
- >8h 0.78 (0.68-0.91)
- ❖ Energy Intake >11200 0.76 (0.58-0.99)
- ❖ OCP 0.89 (0.80-0.99)

Brown et al Am J Prev Med 2016

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**High PA is the strongest behavioural determinant of healthy weight maintenance**

>1000 MET.min/week



50 mins x 5 days x 4 METs

25 mins x 5 days x 8 METs

16 mins x 5 days x 12 METs

(This is the upper end of current guidelines)

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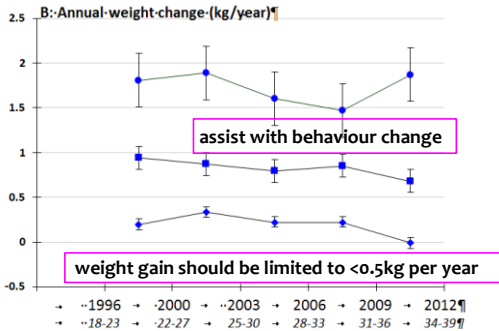
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## Identify gainers early



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## Changing the trajectories?



### ❖ Primary Care

Identify those with weight gain <500g/1kg/>1.5kg /year at age 18-20

Add to RACGPs "red book"



Develop accessible, culturally appropriate resources and education/training for all health professionals

Chronic Disease Prevention Scheme → 5 referrals to allied health professionals (Exercise and Nutrition)

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## Changing the trajectories?



- ❖ Scale up effective interventions (eg Help-her) (non-prescriptive simple health messages, small changes to behaviour, low participant burden, group-based/individual/phone, SMS reminders etc)
- ❖ Integrate weight gain prevention into routine antenatal care (esp first birth at <26y) – incorporate AEPs and Nutritionist/Dietitians for management of gestational weight gain and post partum healthy weight
- ❖ Sustain participation in sport in the transition from school-tertiary education-work and families

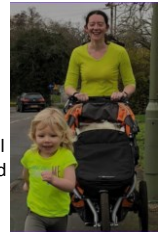
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If eating and activity behaviours could be changed in women at this life stage . .

and if weight gain progression could be prevented . .

there would be potential for carry over to men and children as well.



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