

## Understanding energy balance - policy implications

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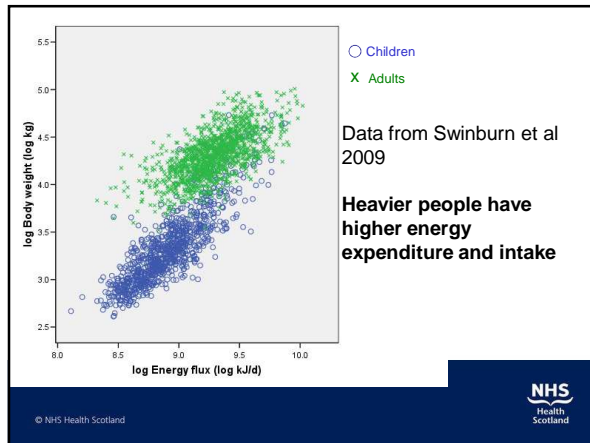
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## Understanding causes

- Effective policies and interventions require accurate grasp of cause and effect
- Understanding obesity hampered by inaccurate data on energy intake and expenditure
- DLW studies providing key new insights with major policy implications
- No significant difference between obese and non-obese populations in energy expenditure adjusted for body mass
- Almost all the increase in weight in US can be attributed to  $\uparrow$ Total Energy Intake (rather than  $\downarrow$ PA)



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## Implications

- People with low BMIs need substantially less food energy to maintain weight
- To achieve and maintain “healthy” weight, obese individuals need big permanent reductions in energy intake
- Success of surgery v diet +/- PA
- Need to reduce energy over-consumption on large scale
- Supplemented by PA where feasible



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## Implications

- Tackling energy over-consumption
  - Taxing sugar sweetened drinks (NEJM 2009)
  - Increasing price of alcohol
  - Restrictions on promotion of high-energy processed foods
  - Limits on portion sizes
  - Public information about eating less if overweight
  - Development of better appetite suppressants?
  - Expansion of surgery in Age of Austerity?
- Vigorous promotion of physical activity for all-round benefits to health and well-being



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## Outcomes of interventions

	Weight loss after Surgery	Weight loss after Diet/PA
Swedish Obese Subjects, 10.9 years follow-up	14-25%	+/-2%
Australian 2 years follow-up	22%	6%



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## Daily energy intake

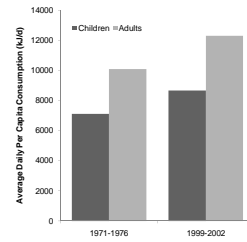
	Men	Women
NDNS 2000/01	2313	1632
DLW (Swinburn 2009)	2973	2374
Difference	660 (22%)	742 (31%)

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## Change in energy supply in US (Swinburn et al 2009 in press)

- Change in energy supply (waste-adjusted) apportioned to adults and children
- Assumed to equal change in EnFlux
- NB systematic errors cancel out



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## Implications (Swinburn)

- To return the US to the 1970s weights
  - **Children:** ↓1500kJ/d [350 kcal/d] (ie 1 can of soda + 1 small fries) or ↑ walking by 150 min/d
  - **Adults:** ↓2000kJ/d [475 kcal/d] (ie 1 BigMac) or ↑ walking by 110 min/d
- To reduce obesity:
  - Need a combination of ↓ TEI, ↑ PA & ↓ sedentary behaviours
  - Focus on major ↓ in TEI (and its drivers)
  - Limit expectations of ↑ PA impact on ↓ obesity

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