

Sugar – help or hindrance in weight management?

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Overview of presentation

- Common claims about sugar in relation to weight and appetite
 - Theory and evidence
- Studies using sugar to manage weight
- Interpretation

Common claims about sugar

- Sugar causes over-eating (said to adults) ... OR
- Sugar ruins your appetite (said to kids)

- Sugar makes you fat

- Avoid sugar if you want to lose weight

Sugar causes over-eating?

- Assumption = Eating sugar is palatable so people want to eat too much. There is no compensation for sugar.
- Conversely = sugar said to ruins kids' appetites if eaten before meals
- **WHICH IS IT?**

Evidence: too much of a good thing

- Hetherington et al (2000) British Food Journal 102, 507-21.
- 15 people given daily chips or chocolate
- Liking, preference and frequency of intake studied over 15 days
- Intake of and liking for chocolate declined over time. Intake of and liking for chips stayed the same
- 'Sensory-specific satiety' for sugar at work

Evidence: sugar could reduce appetite

- Lavin et al (2002) IJO 26, 384-8.
- 20 people given either pastille, jelly or sugary drink before lunch
- Average energy content = 60 calories
- Energy intake at lunch decreased after the pastilles. Others had no effect.
- Solid sugar seems to reduce appetite – chewing may activate satiety stimuli

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Evidence: compensation happens

- Lawton et al (1998) BJN 80, 149-61.
- 36 lean people given free snack boxes for 3 weeks. Eat as much as you like!
- Sweet vs. savoury. High fat vs. low fat
- No sig difference in EI across the groups
- Compensation occurred despite unlimited eating opportunities
- Better compensation for LF snacks

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Sugar makes you fat?

- Assumption = there is something particular about sucrose – over and above its calorie content – that stimulates fat storage
- To synthesise body fat from sugar, need *de novo* lipogenesis (new fat creation)

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Evidence: sugar same as starch

- McDevitt et al (2001) AJCN 74, 737-46.
- 13 lean & overweight women overfed by 50% in 4 days. Calorimetry done.
- Comparison made between sucrose and glucose (product of starch breakdown in gut)
- No difference in *de novo* lipogenesis
- Overfeeding of CHO made little impact on overall body fat

Evidence overview

- What we know from research on this area
 - Carbs not easily turned into body fat
 - Carbs stimulate extra energy to be burnt off during food processing (less left to store)
 - Carbs increase total energy expenditure
 - Sugar behaves like any other carb

So carbs don't make you fat?

- No – the key is total energy over time
- Energy from any source is potentially fattening if eaten in large quantities
- Energy dense foods more likely to be over-consumed



The case of calorific drinks

- Evidence building about calorific drinks
- Alcohol and soft drinks have minimal effect on appetite and satiety
- Short-term studies show higher energy intakes when calorific drinks taken daily
- Recent study in UK kids found lower obesity risk when soft drinks removed from school
- Could contribute to obesity risk if taken in excess. What is excess?



Avoid sugar to lose weight?

- Assumption = sugar somehow prevents weight loss on a low calorie diet
- Dietitians commonly advise patients to reduce sugar as well as fat. Is this possible given sugar:fat seesaw?



Evidence – sugar & dieting

- West & de Looy (2001) IJO 25, 1122-28.
- 68 dieters randomised to low sugar or normal sugar (10% energy) weight-reduction diets
- No difference in weight loss between the two
- Normal sugar diet was lower in fat
- Vitamin and mineral intakes similar in low and normal sugar diets
- Authors questioned value of sugar avoidance



Evidence – sugar & wt management

- Saris et al (2000) IJO 24, 1310-18.
- 398 overweight adults randomised to follow LF (complex), LF (high sugar) or high fat diet for 6 months. Most food provided free
- No dietary restriction
- Sugar intake twice UK recommendations!
- Modest reduction in weight and % fatness in both LF groups regardless of sugar content

Interpretation

- Contrary to claims, sugar doesn't seem to cause over-eating or make you fat
- It is neutral for weight loss and weight management
- May even help control appetite
- Some caution about calorific drinks

The last word

“While dietitians consume nutrients, the rest of us just eat food”

Must remember that there is more to diet than ‘nutrients’ and sugar contributes to food tasting nice.
