

Proposed framework and process for creating an evidence-based obesity prevention action plan

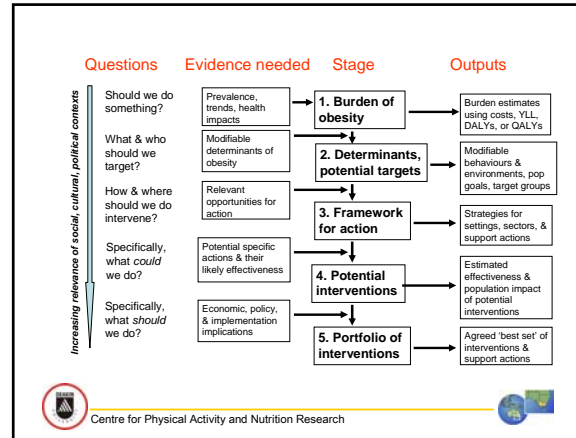
Part 2

Boyd Swinburn

Centre for Physical Activity and Nutrition Research
Deakin University, Melbourne



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'Promise Table'

	Potential population impact [#]		
Certainty of efficacy [*]	Low	Moderate	High
Quite high	Promising	Very promising	Most promising
Medium	Less promising	Promising	Very promising
Quite low	Least promising	Less promising	Promising

^{*} The confidence from the evidence that the intervention will produce a benefit under ideal conditions

[#] Efficacy x population reach x uptake (effectiveness)



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Efficacy studies

- Few with obesity as an endpoint
 - Campbell et al, Cochrane Sys Rev 2002
 - NHS Review, Effective Health Care 2002
 - Most show modest or no impacts
- More studies with behavioural outcomes
- Very few environmental interventions



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Choices for building an action plan

- Using only proven specific interventions
 - Results in a patchy and ineffective plan
- Using a comprehensive, public health approach
 - Less certainty about the effectiveness of interventions
 - Need to model likely effectiveness
 - Need to evaluate interventions
 - Incorporate support action areas



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Support actions

- Necessary but not sufficient
- Not efficacious in themselves but need to be funded
- Examples include:
 - Social Marketing
 - Monitoring and research
 - Training and capacity building
 - Demonstration projects



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Modelling the effectiveness of interventions

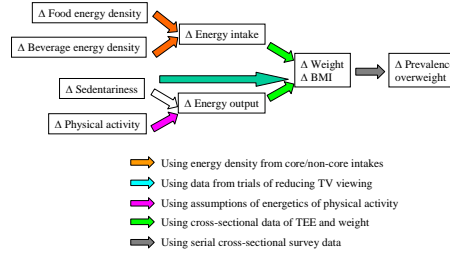
- Interventions outcomes
 - Reported BMI/obesity (eg reducing TV viewing)
 - Reported dietary patterns (eg school food)
 - Reported PA patterns (eg active transport)
 - No reported outcomes (eg TV food ads targeting children)
- Some require modelling of efficacy
- All require modelling of reach & uptake



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Logic model for estimating efficacy



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Example 1: increasing active transport to/from school

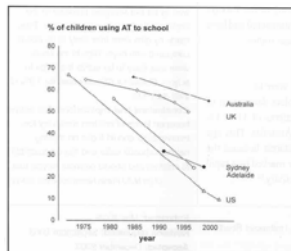
- Current AT to/from primary school ~30%
- 'Theoretical maximum' ~60%
 - Live within 2km of school
 - Level from the 1980s
- 'Plausible maximum' ~45%
 - Changes seen from intervention programs
- Assume average age of 10y, weight of 40kg, EE and EI of 9300 kJ/d



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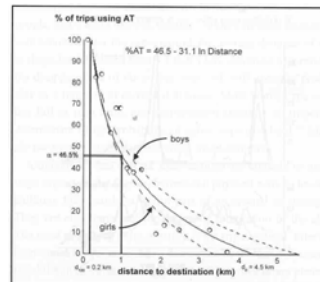
Historical evidence on AT_{school}



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Relationship between %AT and distance



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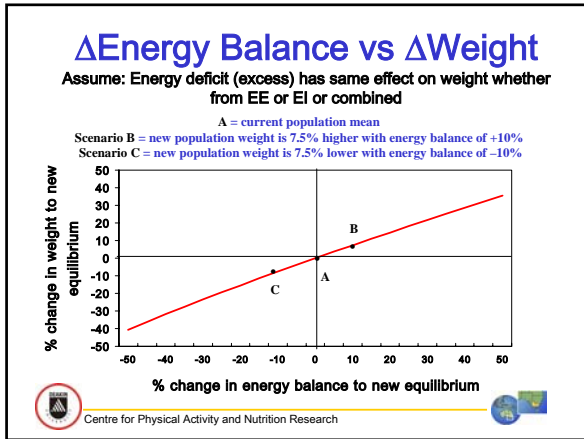
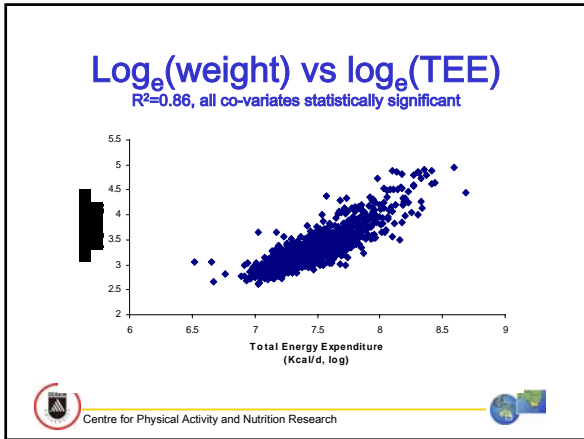
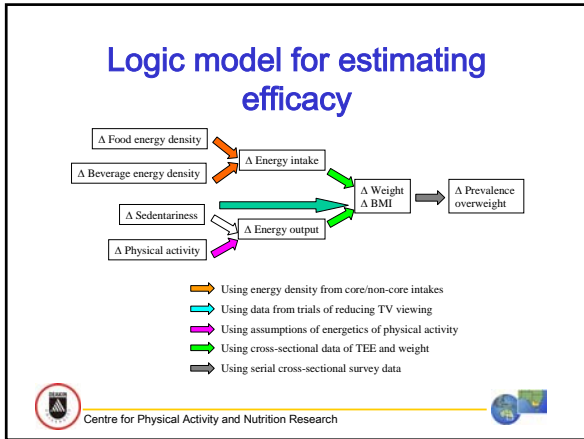
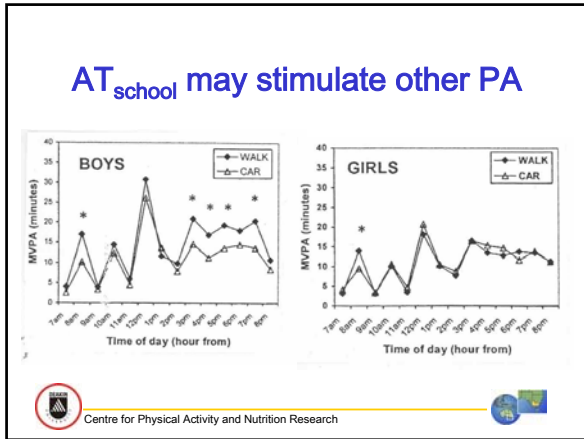
Programs to increase AT to/from school from 30% to 45%

- Assume full efficacy across the country
- Current AT_{school} contributes ~0.5% TEE for all primary school children
- Increased to 0.75% with AT programs
 - 0.25% increase in TEE
 - 0.25% negative energy balance
- Equals a 0.2% decrease in weight



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- ### Example 2: Increasing healthy food choices
- Intervention 1 – improve school canteens
 - Australian children eat ~16% of total annual energy at school* & say canteens provide 1/3 of that (~5%)
 - Intervention 2 – reduce TV advertising for ‘junk food’ that is targeting children
 - ~75% of ads are for non-core ‘junk’ foods
 - ~\$A0.5b annual spend on food ads influences purchases and therefore consumption
- *Bell et al EJCN 2004
- Centre for Physical Activity and Nutrition Research

Core vs non-core foods & drinks

(based on AGHE & NNS95)

	Foods		Beverages (excluding water)	
	Core	N-Core	Core	N-Core
Energy density (kJ/g)	6.0	11.8	0.4	2.3
% by weight	72	28	65	35
% by energy	57	43	26	74

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Impact of interventions

(constant food/beverage weight, 2-18y/o, full uptake & reach)

- School canteens
 - Core:non-core (by wt) changes by 20% (of 5%) ('Theoretical maximum')
 - Foods: 72:28 to 92:8 (73:27 for total EI)
 - Beverages (excluding water) 63:37 to 83:17 (64:36 for total EI)
- TV ad reduction
 - Core:non-core (by wt) changes by 3% ('Plausible maximum')
 - Foods: 72:28 to 75:25
 - Beverages (excluding water) 63:37 to 66:34
- Change in EB = -1%
- Change in wt = -0.75%



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5. Deciding on the portfolio of interventions

(Economic, policy, implementation factors)

- Economic Analyses
 - Cost, cost-effectiveness, cost-utility
- Other evidence and stakeholder ratings
 - Feasibility
 - Sustainability
 - Potential effects on equity
 - Potential positive or negative side effects
 - Acceptability to stakeholders



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Conclusions

- Comprehensive rather than 'proven' plan
- Paucity of efficacy studies
- Some support components need funding
- Modelling is possible to estimate efficacy, reach, and uptake to estimate overall population impact
- Implementation factors must be assessed
- Outcome is an agreed, comprehensive portfolio of interventions



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