

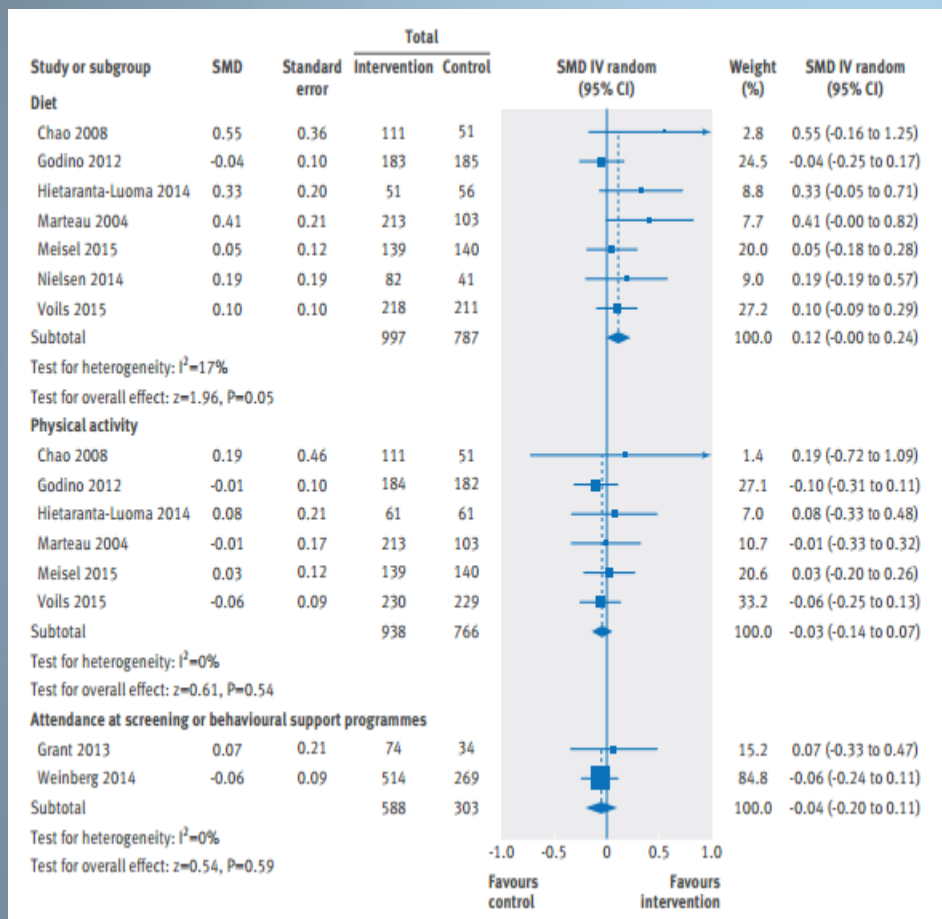
How to change health-related behaviour: The (limited) impact of risk communication, and other (more promising) interventions

Prof David French

University of Manchester



Why not just communicate risk?

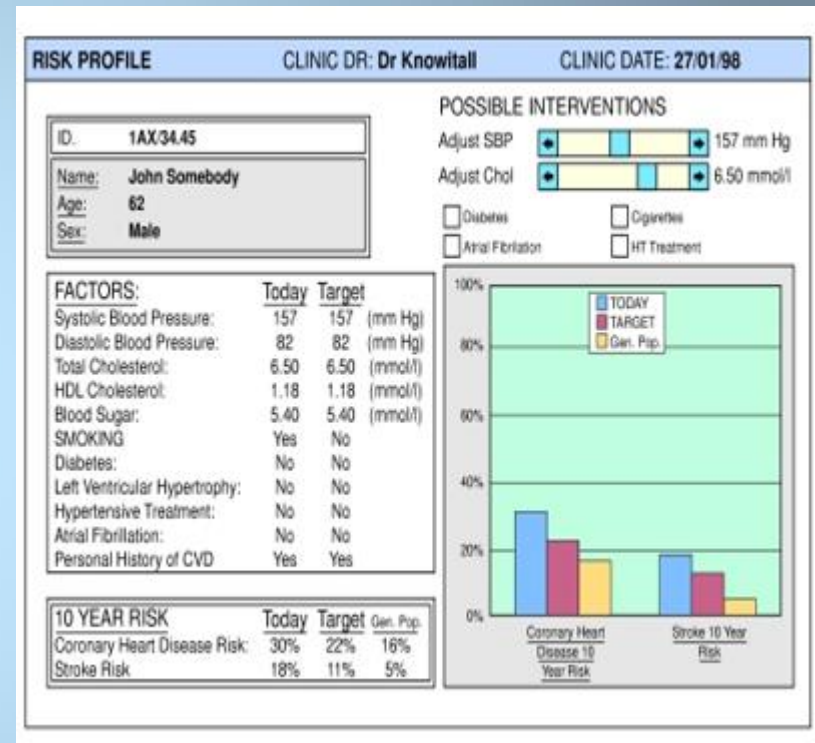


- 2016 updated Cochrane review
- 18 RCTs of communicating genetic risk information on health-related behaviours
- “Expectations that communicating DNA based risk estimates changes behaviour is not supported by existing evidence.”

• GJ Hollands, DP French, SJ Griffin, AT Prevost, S Sutton, S King, & TM Marteau (2016). The effects of communicating genetic risk on risk-reducing health behaviour: systematic review with meta-analysis *British Medical Journal* **352**; i1102.

Effects of communicating personalised disease risk on behaviour:

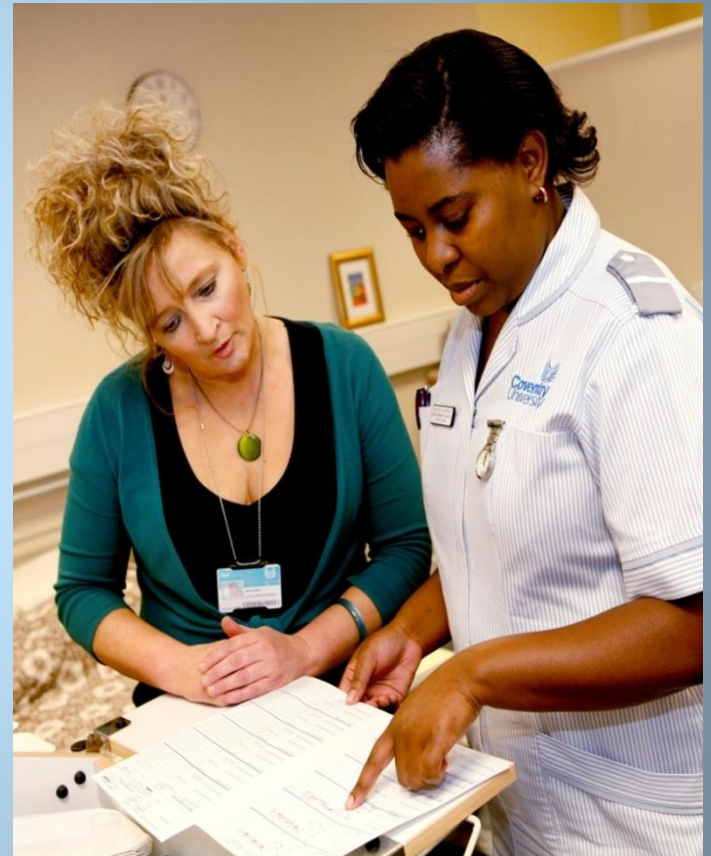
- 9 systematic reviews; 36 unique studies
- No evidence that personalised risk information had strong, consistent or sustained effects on behaviour
- More support for imaging/visual feedback



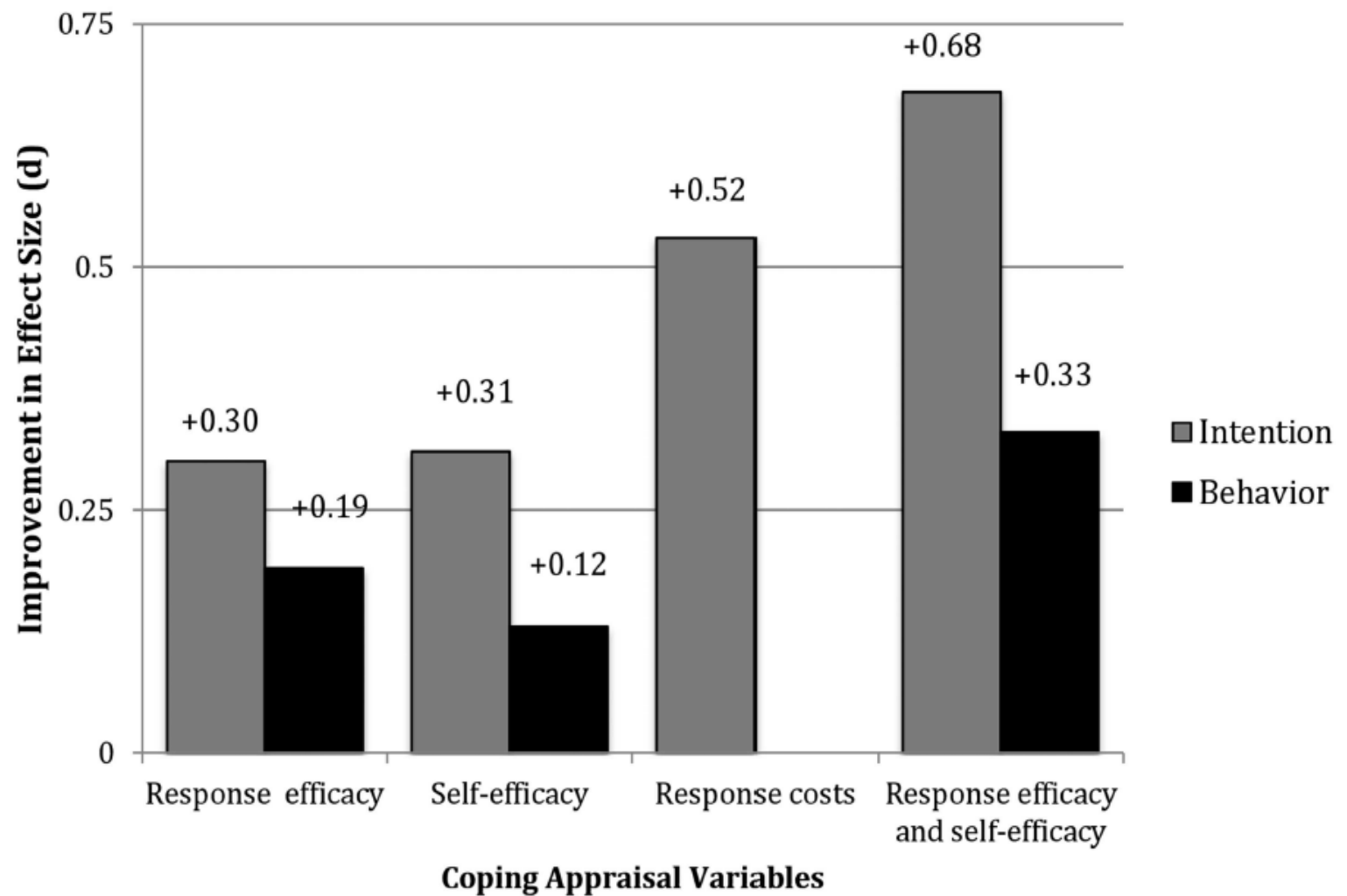
DP French, E Cameron, JS Benton, C Deaton, & M Harvie (2017). Can communicating personalised disease risk promote healthy behaviour change? A systematic review of systematic reviews. *Annals of Behavioral Medicine* **51**; 718-729.

Effects in non-clinical settings

- Where risk appraisals were heightened across 217 studies:
- Effect $d=+0.23$ on behaviour
- Where also change **response efficacy** and **self-efficacy**, get much larger effects



Sheeran et al (2014) Psychol Bull



Sheeran P, Harris PR, Epton T (2014). Does heightening risk appraisals change people's intentions and behaviour? A meta-analysis of experimental studies. *Psychol Bull* 2014; 140(2): 511-543.

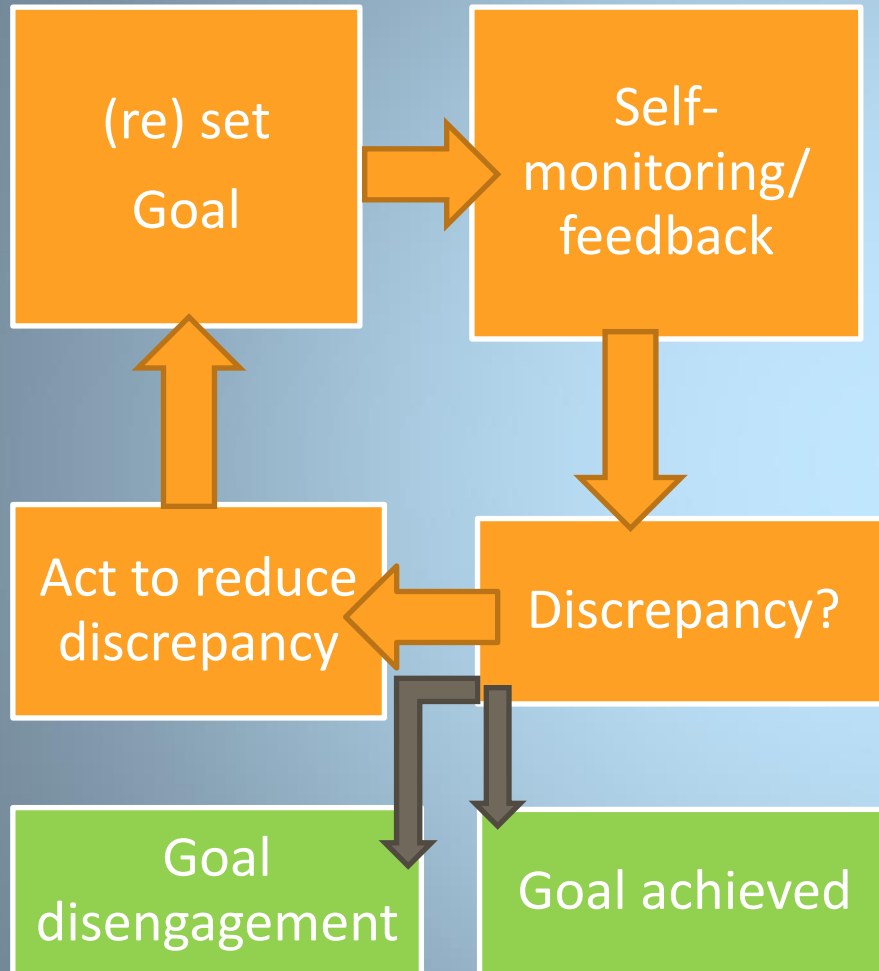
Targeting self efficacy to increase walking behaviour

- To increase self-efficacy
- Intervention elicited participants' own reasons for why walking (more) is under their own control
- Use self-regulation techniques
- Bridge the “intention-behaviour gap”

Darker, French, Eves & Sniehotta (2010). *Psychology & Health*, 25, 71-88.

French, Stevenson & Michie (2012). *Psychology, Health & Medicine*, 17, 127-135.

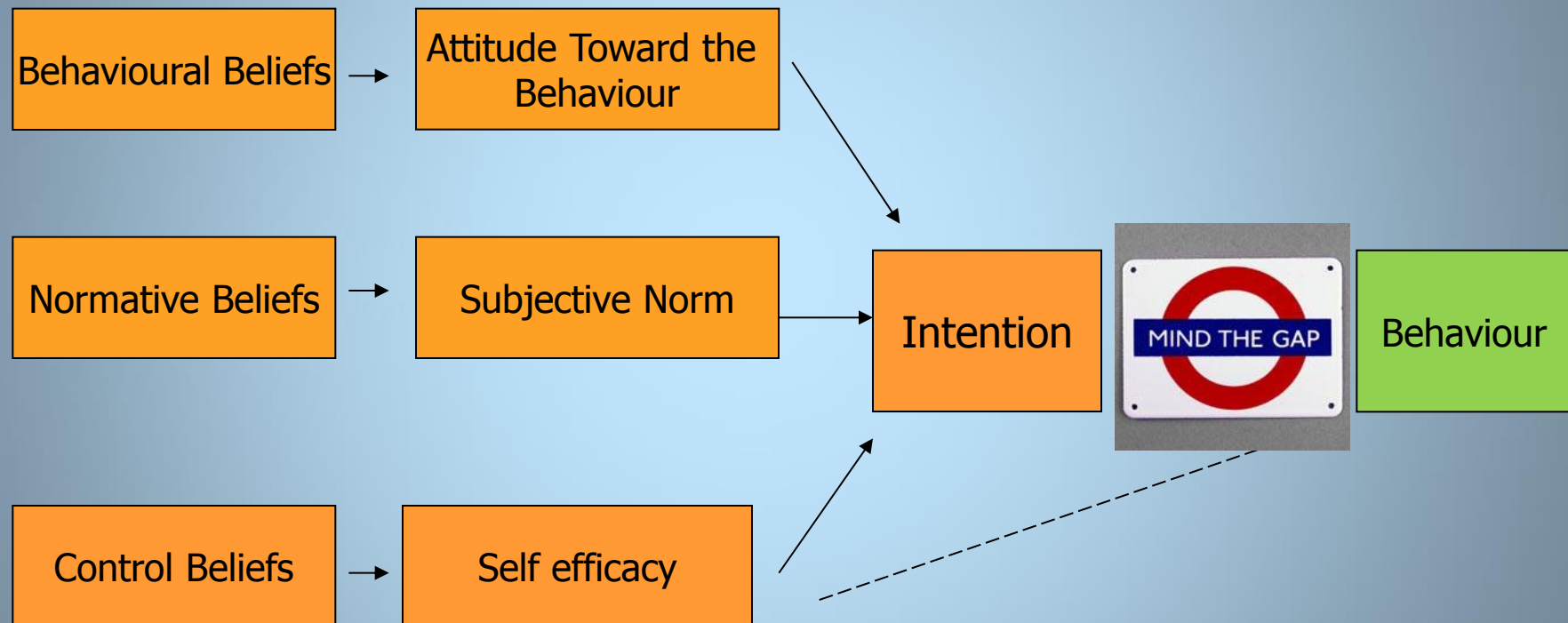
Behaviour Change Techniques (BCTs)



BCTs	Definition of the BCTs
Goal setting	Involves making a behavioural resolution (e.g. doing more exercise) and to make a decision of either changing or maintaining a change.
Action planning	Contains detailed planning of how the individual will achieve the goal in terms of when and where to act, as a minimum.
Supportive planning	Consists the development of helpful factors that would assist the individuals to apply their health-related plan and generate ideas for how they could achieve these factors successfully.
Self-monitoring of behaviour	Person is asked to make a note of specified behaviour as a tool for specified behaviour.

S Michie, S Ashford, FF Sniehotta, SU Dombrowski, A Bishop, & DP French (2011). A refined taxonomy of behavior change techniques to help people change their physical activity and healthy eating behaviors - The CALO-RE taxonomy. *Psychology and Health* **26**; 1479-1498

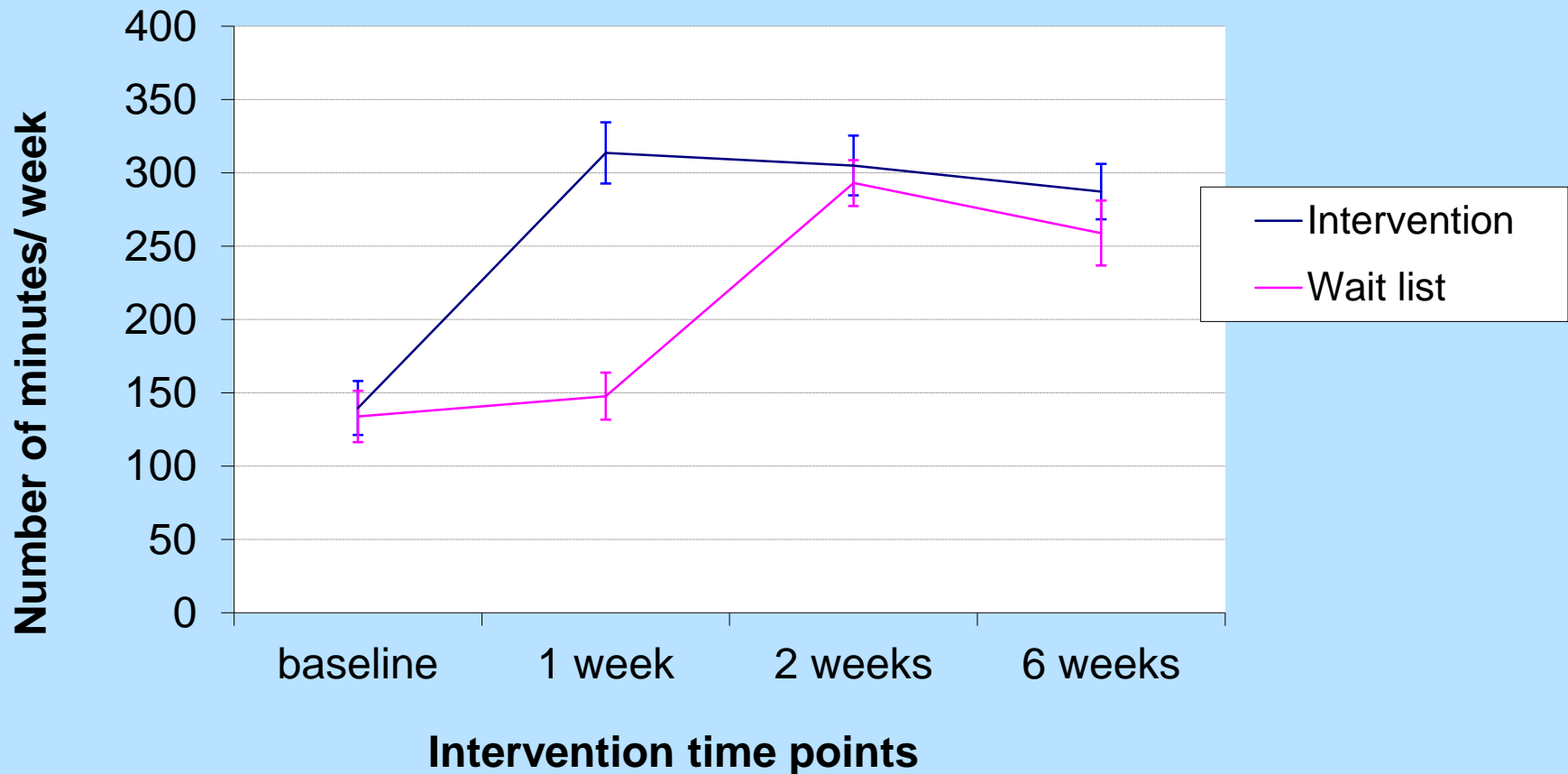
Theory of Planned Behaviour



Motivational phase – develops an intention

Volitional phase – intention planned, initiated, maintained

Effects on walking (self-report)



Darker, French, Eves & Sniehotta (2010). *Psychology & Health*, 25, 71-88.

French, Stevenson & Michie (2012). *Psychology, Health & Medicine*, 17, 127-135.

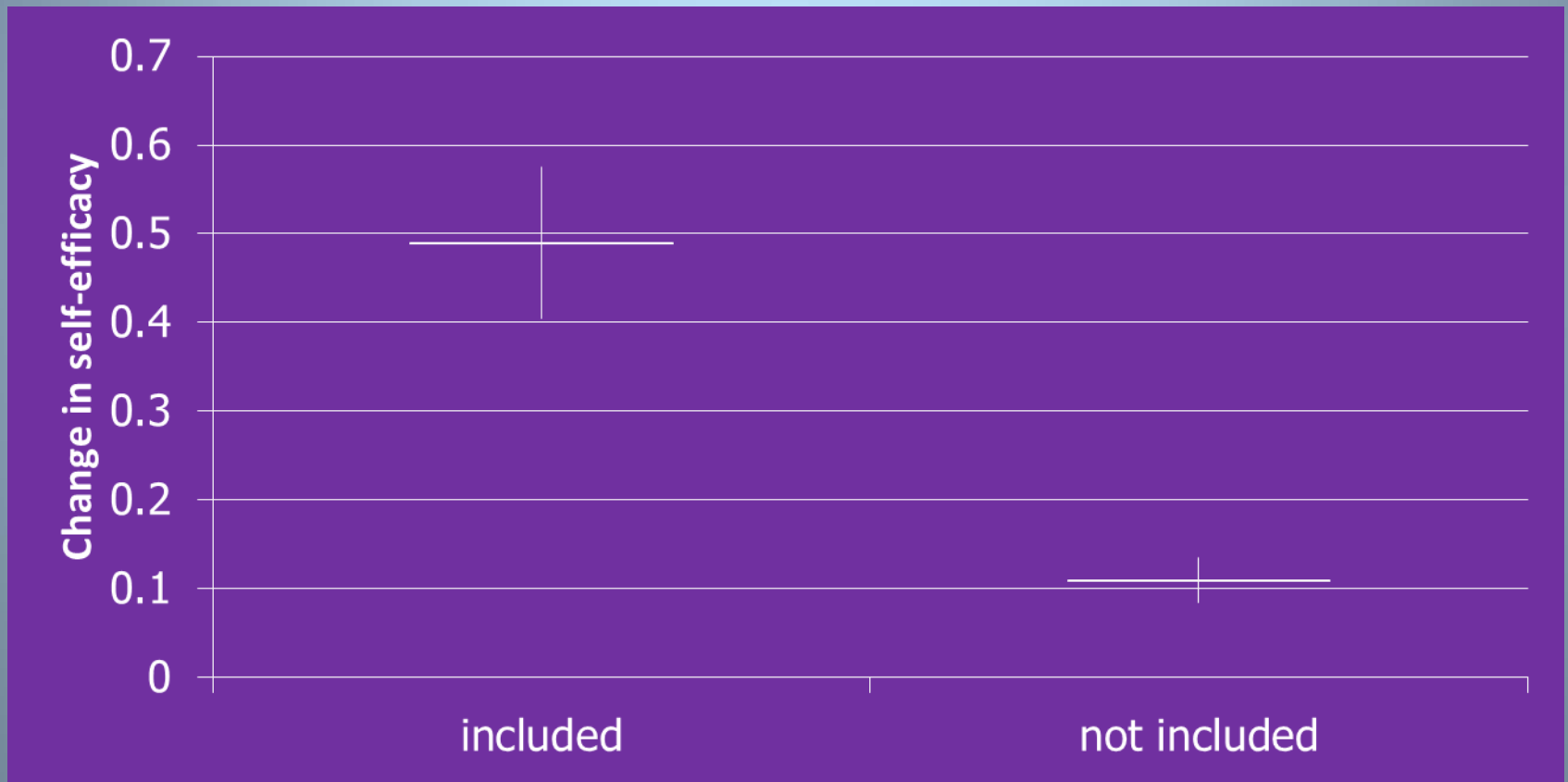


What is the best way to change self efficacy?

- Systematic review of intervention studies to alter lifestyle/ recreational physical activity of non-clinical samples of adults under 60 years
- Reported pre/post or between groups comparisons of self efficacy
- Thereby estimated effect sizes for SE and for physical activity
- Coded intervention content, using CALO-RE taxonomy of behaviour change techniques

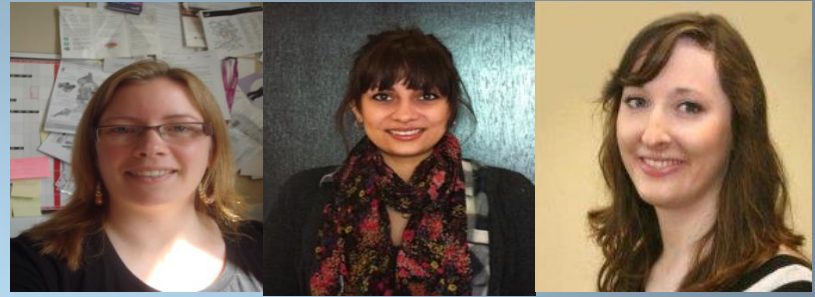
SL Williams, & DP French (2011). What are the most effective intervention techniques for changing physical activity self-efficacy and physical activity behaviour - and are they the same? *Health Education Research* **26**; 308-322

Action planning (aka Implementation Intentions)



$p < 0.001$

Which BCTs decreases both self-efficacy and behaviour? (over 60s)



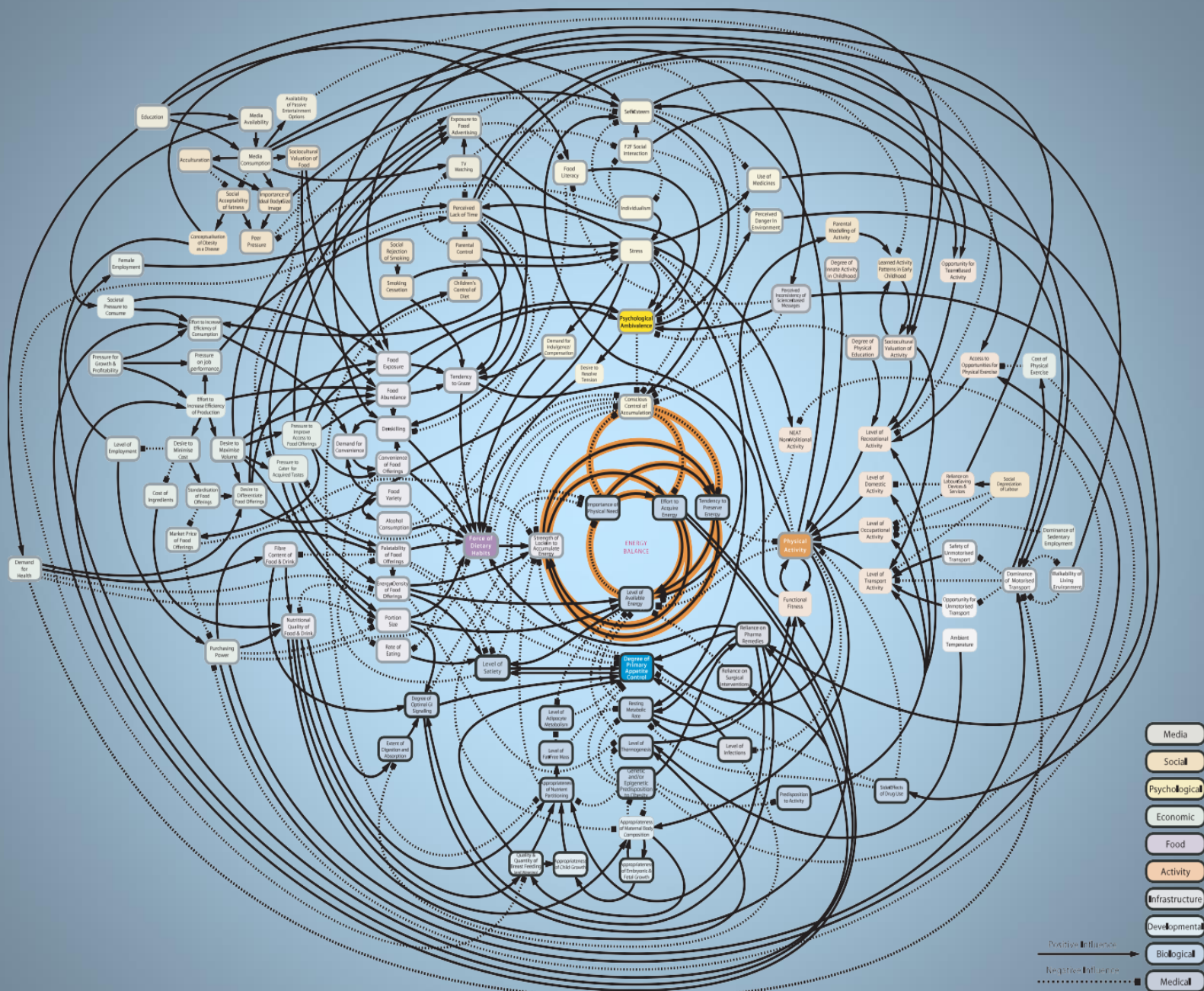
- Relapse prevention/ coping planning
 - Goal setting (behaviour)
 - Provide feedback on performance
 - Prompt self-monitoring of behaviour
-
- Plan social support/ social change
 - Provide normative information about others' behaviour

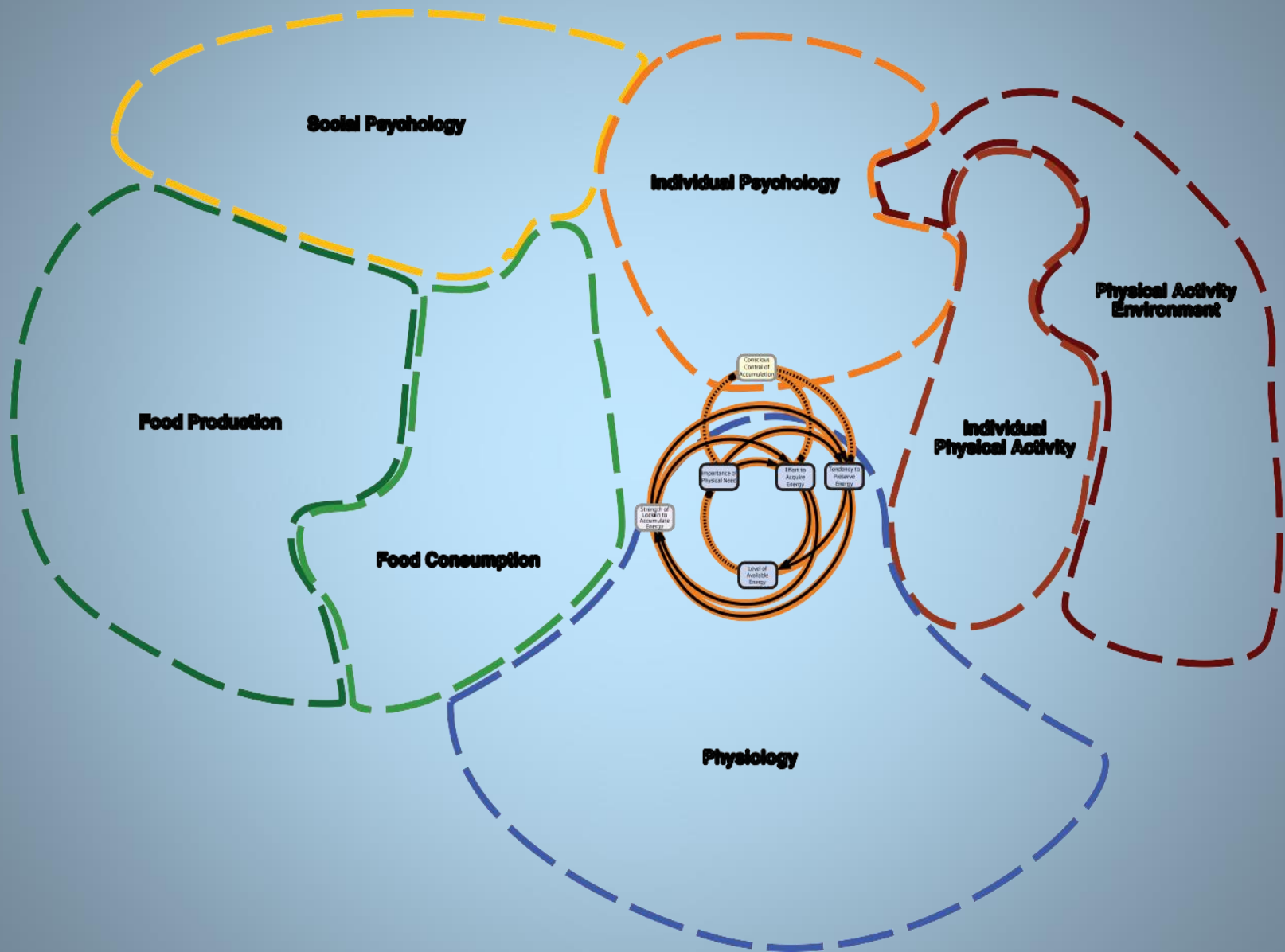
DP French, EK Olander, A Chisholm, & J McSharry (2014). Which behavior change techniques are most effective at increasing older adults' self-efficacy and physical activity behavior? A systematic review. *Annals of Behavioral Medicine* **48**; 225-234.

Maintenance of physical activity (adults 18-64 years, k=52, N=61,690)

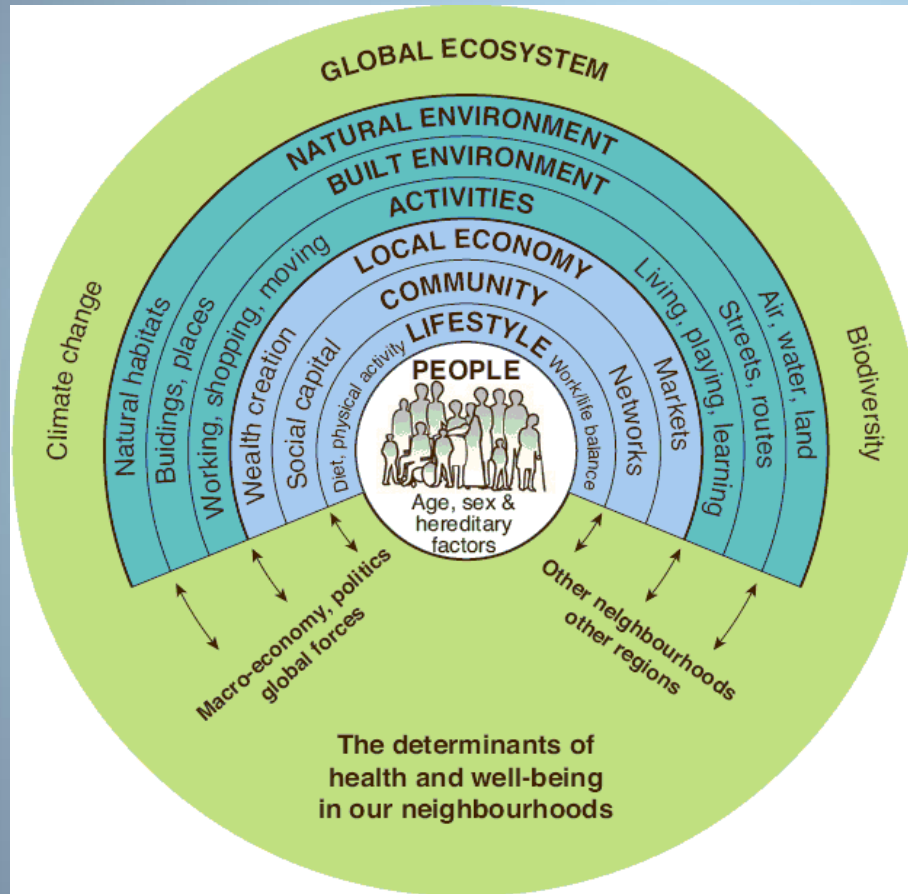


JM Murray, SF Brennan, DP French, C Patterson, F Kee, & RF Hunter (2017). Effectiveness of physical activity interventions in achieving behaviour change maintenance in young and middle aged adults: A systematic review and meta-analysis. *Social Science and Medicine* **192**; 125-133.





One can intervene at a number of levels...



NICE National Institute for
Health and Care Excellence

NICE
guideline

Behaviour change: individual approaches

Public health guideline

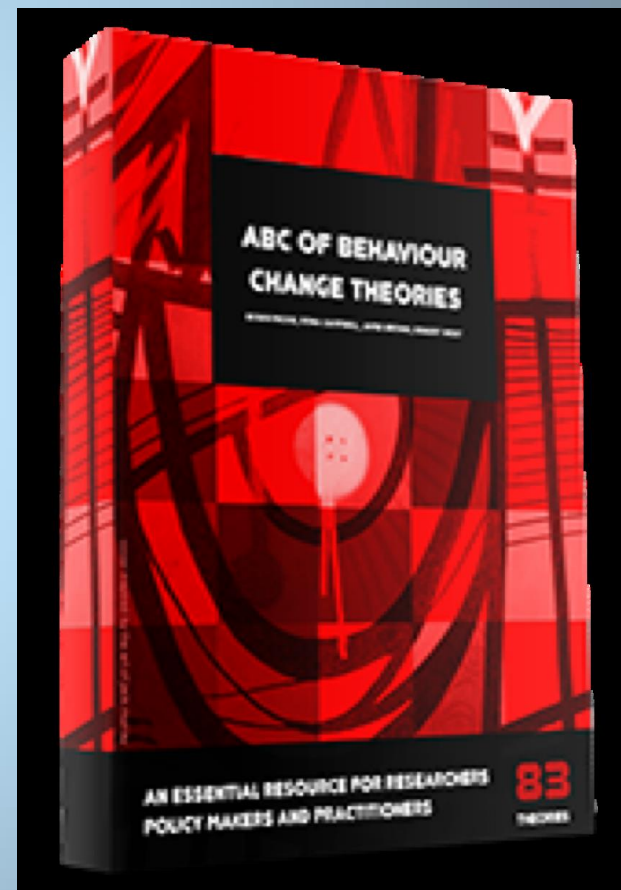
Published: 2 January 2014

[nice.org.uk/guidance/ph49](https://www.nice.org.uk/guidance/ph49)

“Ecological model” (after Urie Bronfenbrenner)

How decide which approach to use?

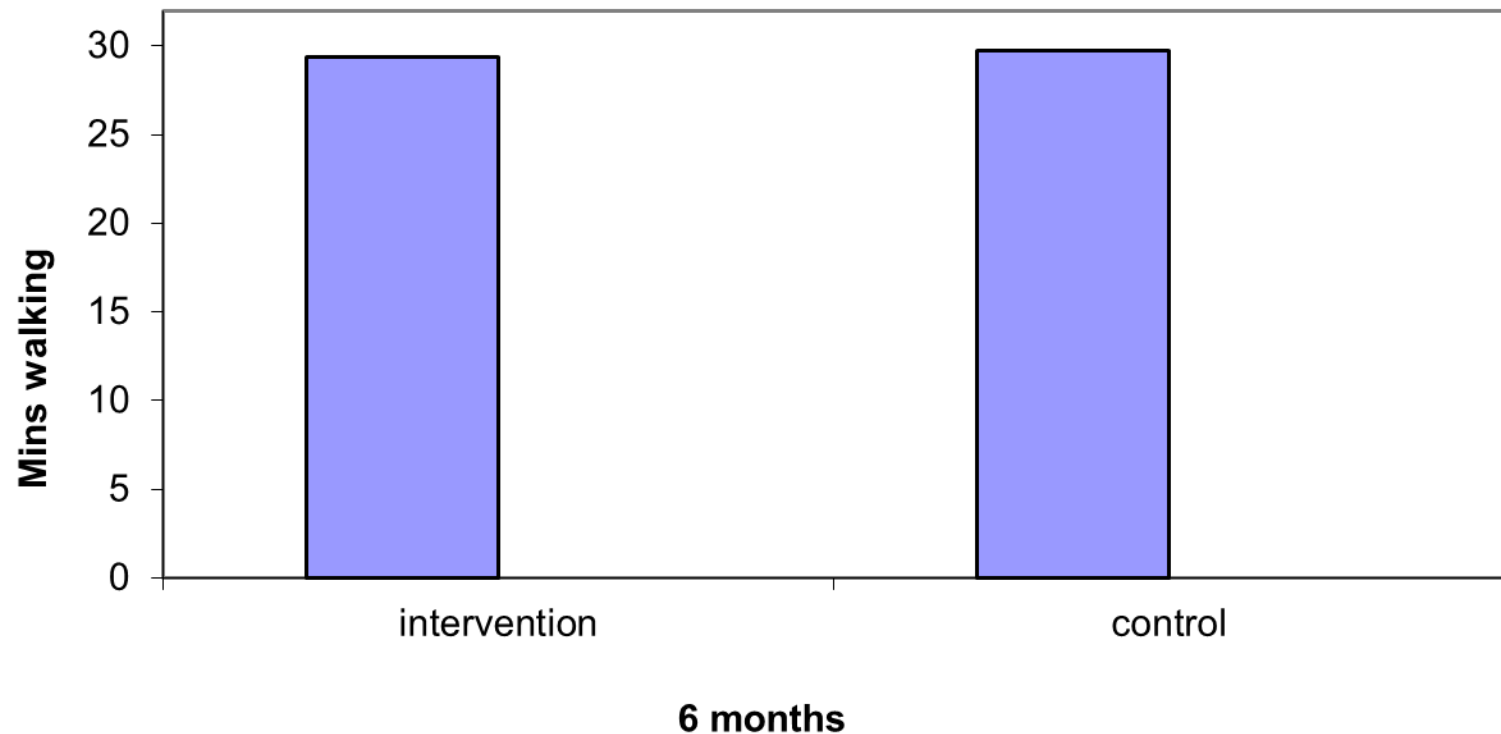
- **83 theories**
- **1738 constructs; mean 19, range 5-84**
- **93 BCTs**
- Various behaviours
- Various populations



Intervention development

- In line with **MRC Framework** for Developing and evaluating complex interventions:
 - Qualitative studies
 - Existing evidence on associations/ causal effects
 - Theory
 - User input (co-design, co-production)
 - Iterative development and feasibility testing
 - Pilot RCT & efficacy trials
 - Implementation

Effects on objectively assessed walking when delivered in general practice



SL Williams, S Michie, J Dale, N Stallard, & DP French (2015). The effects of a brief intervention to promote walking on Theory of Planned Behaviour constructs: A cluster randomized controlled trial in general practice. *Patient Education and Counseling* **98**; 651-658.

How well are interventions delivered? (intervention fidelity)



- Healthier You” NHS Diabetes Prevention Programme (NDPP)

Design

Provider training

Intervention delivery

Treatment receipt

Treatment enactment

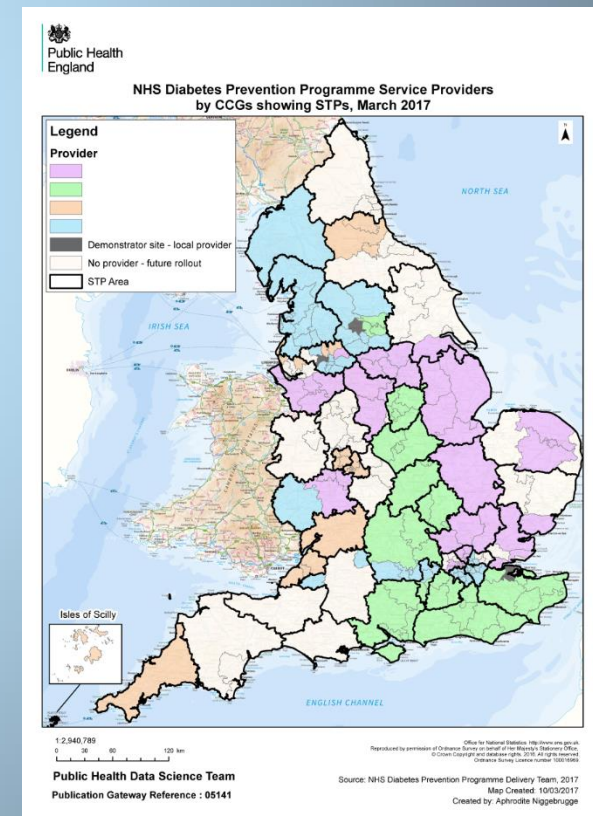
Programme manuals

Observing training

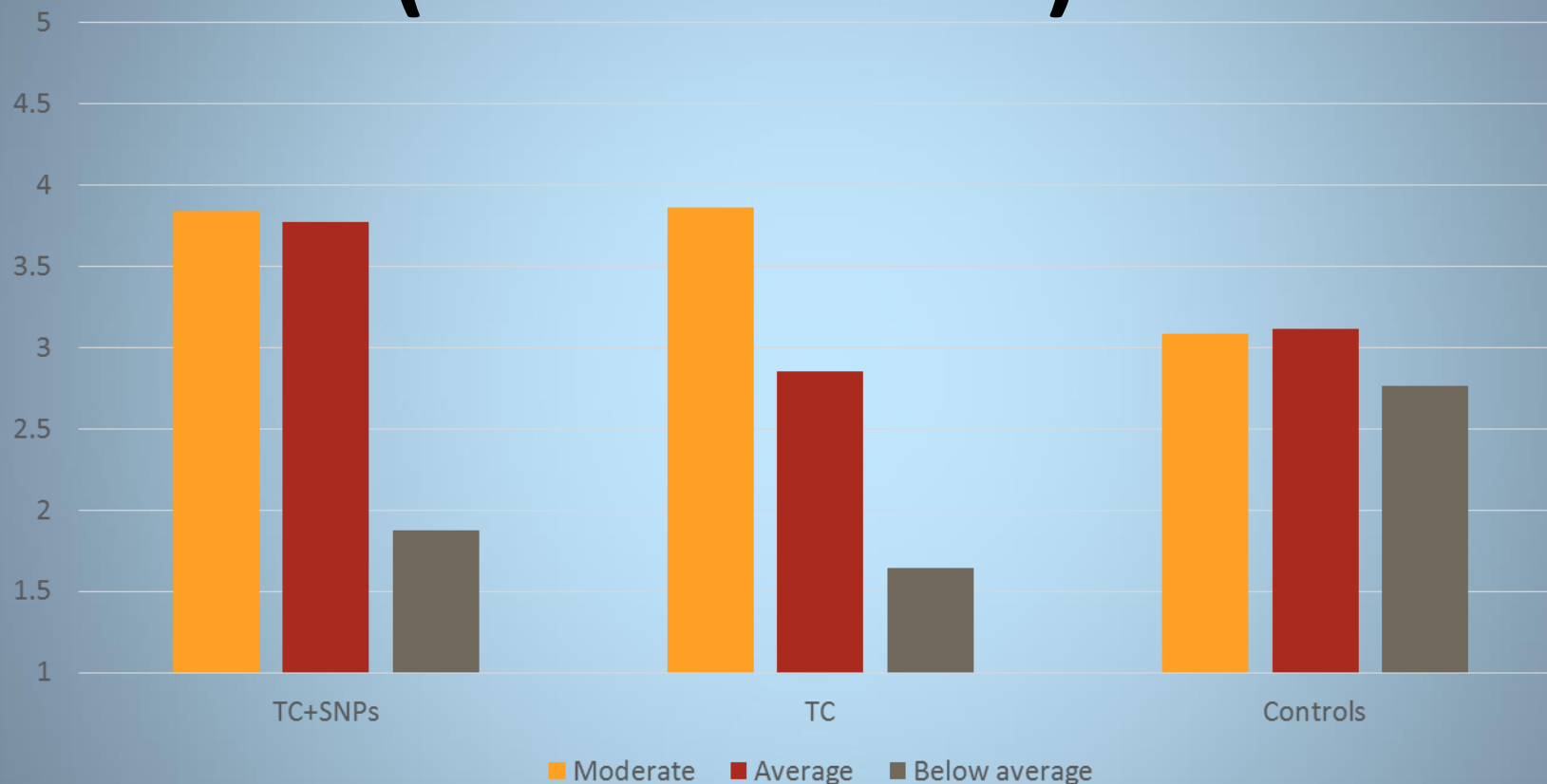
Observing delivery

interviews

Interviews/
questionnaire



The role of personalised risk (breast cancer) #1



•DP French, J Southworth, A Howell, M Harvie, P Stavrinos, D Watterson, DG Evans, & LS Gorman (2018). Psychological impact of providing women with personalized ten-year breast cancer risk estimates. *British Journal of Cancer* **118**; 1648-1657.

The role of personalised risk (breast cancer) #2



	Study-1 Women informed of their BC risk prior to invite to the weight loss programme			Study-2 Women informed of their BC risk part way through the weight loss programme		
10-year risk of breast cancer	Invited, n	Uptake n (%)	Retention at 12 months n (%)	Invited n	Uptake n (%)	Retention at 12 months n (%) ^a
Low (<2%)	560	28 (5%)	15(54%)	541	26 (5%)	4(15%)
Average (<5 to >2%)	437	38 (9%)	29 (76%)	Not invited		
Moderate (≥5-<8%)	187	30(16%)	20(67%)	60	9 (15%)	5 (50%)
High (≥8%)	172	30(17%)	22(73%)	137	17 (12%)	11 (69%)
Total	1356	126(9%)	86(68%)	738	52(7%)	20 (39%)

Thank you


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