



# Should weight loss programmes be designed differently for men and women?

## The ROMEO (Review Of MEn and Obesity) Project

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**A collaborative project between Universities of Aberdeen, Stirling and Bournemouth, with a project advisory group from the Men's Health Forums**

**Project grant holders  
representatives**

**Alison Avenell**

**Flora Douglas**

**Pat Hoddinott  
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**David Wilkins (England & Wales)**

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**Paula Carroll, Colin Fowler**

**Researchers**

**Clare Robertson, Daryll Archibald, Dwayne Boyers, Fiona Stewart,  
Charles Boachie, Evie Fioratou**

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# Men and weight

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- **More men than women are overweight or obese in the UK**
- **Men are**
  - **more likely to misperceive their weight**
  - **less likely to consider weight as a health problem or attempt weight loss**
  - **under-represented in weight loss services**

Butland B, Jebb S, Kopelman P, McPherson K, Thomas S, Mardell J, et al. (2007). Foresight. Tackling Obesities: Future Choices - Project Report 2nd edition. Government Office for Science Available from URL: <http://www.bis.gov.uk/assets/foresight/docs/obesity/17.pdf>

Duncan DT, Wolin KY, Scharoun-Lee M, Ding EL, Warner ET, Bennett GG. Does perception equal reality? Weight misperception in relation to weight-related attitudes and behaviors among overweight and obese US adults. *Int J Behav Nutr Phys Act* 2011;8:20.

Gregory CO, Blanck HM, Gillespie C, Maynard LM, Serdula MK. Perceived health risk of excess body weight among overweight and obese men and women: Differences by sex. *Prev Med* 2008;47:46-52.

# Aims of the ROMEO Project

- **To identify and describe effective weight loss and weight maintenance interventions for men**
- **To identify barriers and facilitators in men's experience of weight management**



# What did we do?

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- **Integrated systematic reviews**
    - 1. 11 RCTs of long-term ( $\geq 1$ yr) lifestyle or drug (orlistat) interventions for men**
    - 2. 20 RCTs of long-term ( $\geq 1$ yr) lifestyle or drug (orlistat) interventions for men compared to women**
    - 3. 26 reports of interventions for men, or men compared to women from the UK**
    - 4. 22 reports of qualitative research with men**
    - 5. 5 economic evaluations of interventions for men, or men compared to women**
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# Inclusion criteria

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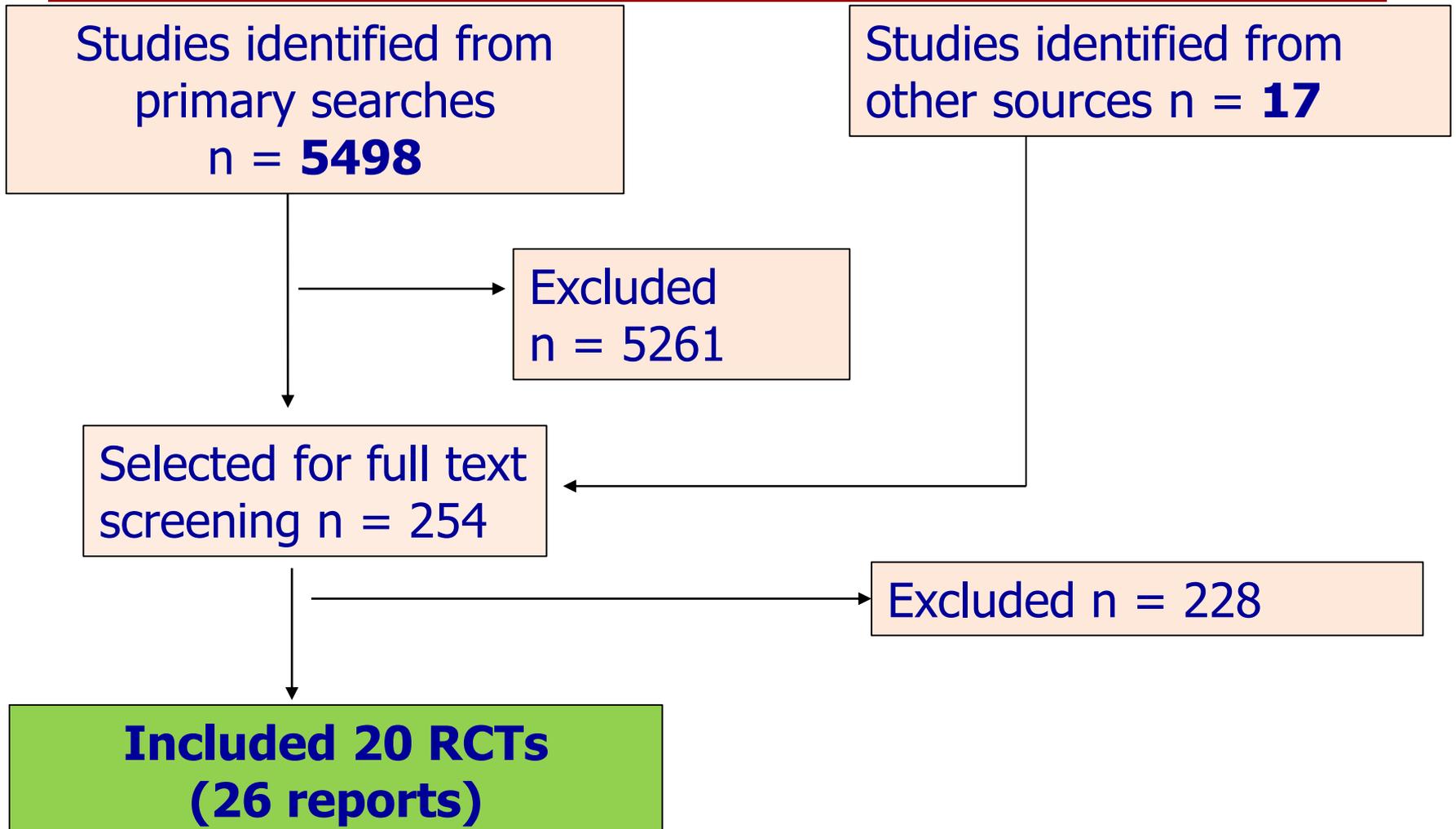
- **Adult men and women with BMI  $\geq 30$  kg/m<sup>2</sup> (or BMI  $\geq 28$  kg/m<sup>2</sup> with cardiac risk factors based on orlistat guidance)**
- **Results presented separately by sex**
- **Primary**
  - **weight change**
- **Secondary**
  - **waist circumference, cardiac risk factors, disease specific, adverse events, quality of life, process outcomes, economic costs**

# Data analysis

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- **Random effects meta-analysis (Review Manager 5.1) and narrative synthesis where pooling not possible**
- **Risk difference calculated to compare attrition between men and women**
- **Weighted mean difference calculated to compare weight loss between men and women**

# Results



# Results

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- **4584 men (36.6%); 7939 women (63.4%)**
- **USA (9), Finland (6), Canada (1), Israel (1), Sweden (1), Switzerland (1), UK (1)**
- **Moderate quality (Cochrane risk of bias tool)**
- **18 weight loss; 2 weight maintenance trials - 20 combinations interventions/comparators**

# Analysis of attrition for men and women

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- **Eight trials contributed to the analysis**

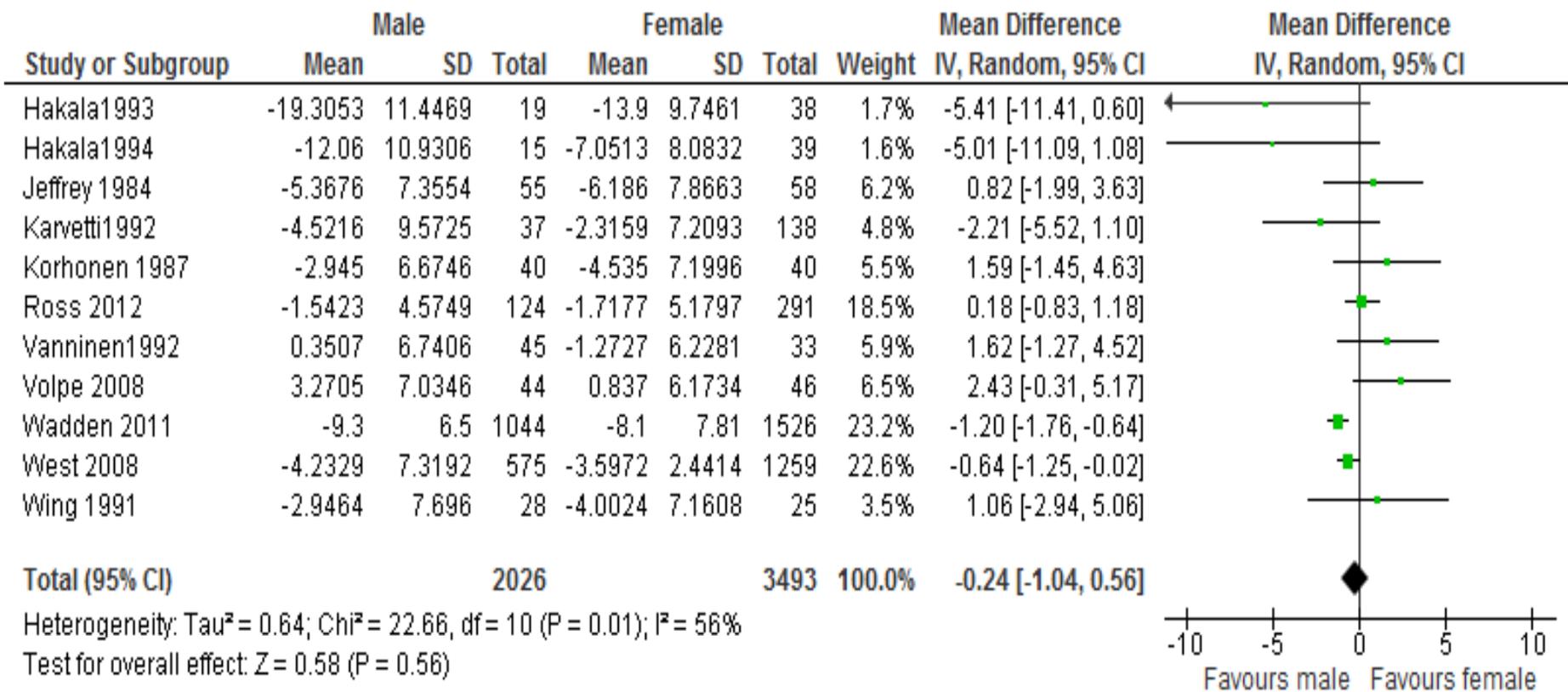
	Completed study	Did not complete study	Total	Proportion completing
Men	856	341	1197	0.72
Women	1581	1035	2616	0.60
Total	2437	1376	3813	0.64
Difference in proportion between men and women (95% CI)				0.11 (0.08, 0.14)
				p < 0.001

# **Weight loss between men and women**

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- **Eleven trials contributed to the analysis -2026 (36.7%) men and 3493(63.3%) women**
- **Two analyses: the difference in mean weight change in kg and difference in percentage weight change between men and women**
- **3 trials reported different calorie deficits for men and women (Jolly 2011, Shai 2008, Wadden 2011)**

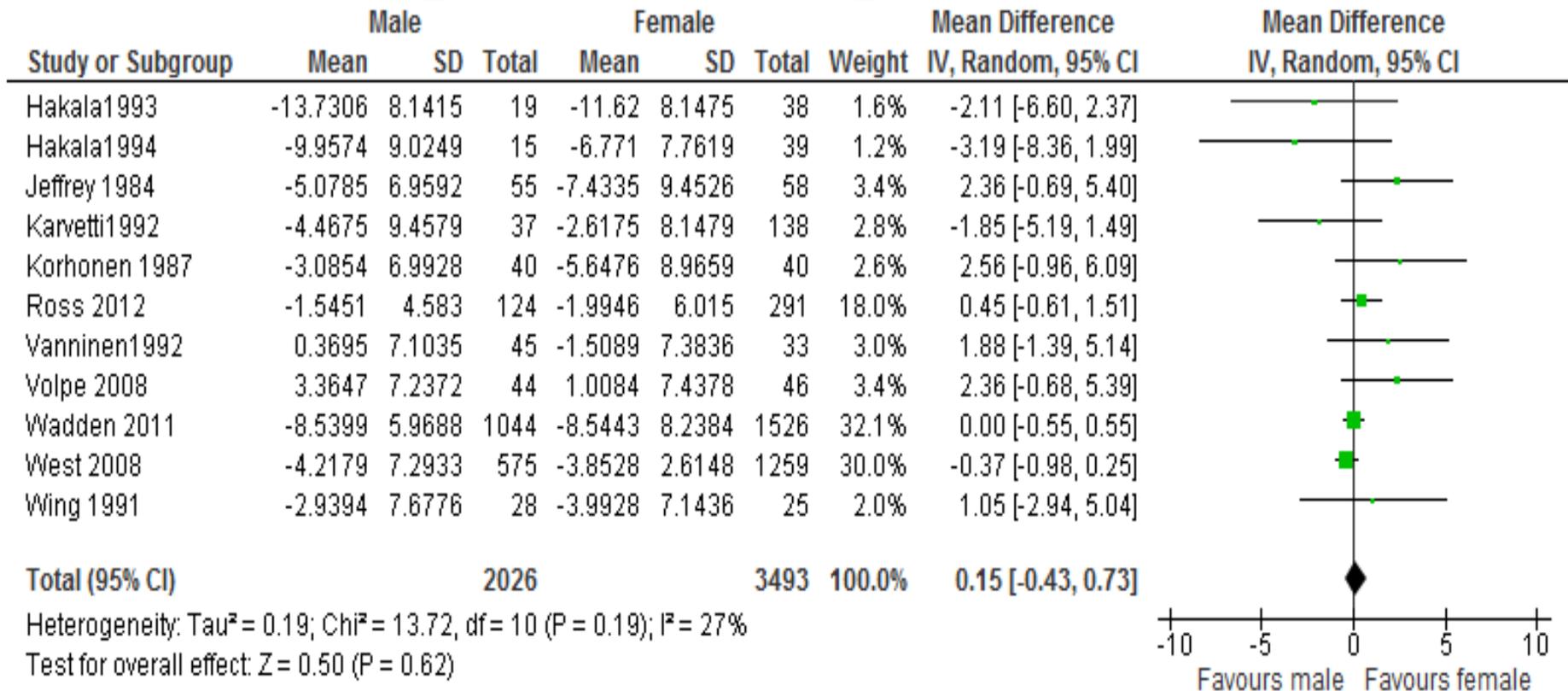
# Difference between mean weight loss in kg from baseline between men and women **-0.24kg [-1.04, 0.56] P=0.56**



# Difference in % weight loss from baseline between men and women

## 0.15%

**[-0.43, 0.73] P=0.62**



# What works for men?

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- **Reducing diet, physical activity & behaviour change techniques effective for both sexes**
- **Men lost more weight with an intensive, low fat reducing diet than women**
  - mean change -3.4kg (SD 4.34) versus -0.1kg (SD 4.06)  
p=0.004 (Shai 2008)
- **Women responded better to a Mediterranean diet than a low fat reducing diet**
  - Mean change -6.2kg (SD 9.48) versus -0.1kg (SD 4.06)  
p=0.01 (Shai 2008)

# What works for men?

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- **Groups when individual support or advice is also offered (but men were less likely to join groups/commercial providers)** (Karvetti 1992, Jeffrey 1984, Wadden 2011, Hakala 1994, Jolly 2011)
- **Tailoring interventions by ethnicity might be more important for women** (Wadden 2011)
- **Support from a spouse/partner more helpful for men than women (but not attending the same programme)** (Golan 2010, Wing 1991)

# What doesn't work for men?

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- **Men were less able than women to maintain their weight with orlistat after initial weight loss (Richelsen 2007)**
  - Women –9.7 kg (–8.4%) vs. –6.3 kg (–5.3%), reported  $p < 0.02$
  - Men –8.9 kg (–8.3%) vs. –8.1 kg (–7.5%), reported NS
- **Men were less successful than women with interventions involving financial contracts for weight loss (reported  $p < 0.05$ ) and weight maintenance (reported  $p < 0.006$ ) (Jeffrey 1984)**

# Conclusions

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- **Few eligible trials, moderate quality**
- **Men are less likely to join weight loss programmes but, once engaged, appear less likely to drop out than women**
- **Men and women showed some differences in responses to different weight loss and weight maintenance interventions**

# Conclusions

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- **Description of interventions poor**
- **Given that men have higher energy requirements for any given weight, should the**
  - **Difference between men and women be taken into consideration in prescribing diet and exercise?**
    - **Absolute calorie deficit be more for men?**
    - **%Calorie deficit be the same for men and women?**

# What next?

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- **Understanding the different views of men and women is likely to improve engagement and intervention effectiveness**
- **Need more, better quality, long-term (>1 year) RCTs identifying men as a separate (heterogeneous) participant group to women**
- **Report weight loss outcomes & drop-out separately for men and women**

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**<http://www.journalslibrary.nihr.ac.uk/hta/volume-18/issue-35>**

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*National Institute for  
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# Thank you

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