

## Predictors of remission of type 2 diabetes with an intensive weight management programme: post hoc analysis of the Diabetes Remission Clinical Trial (DiRECT)

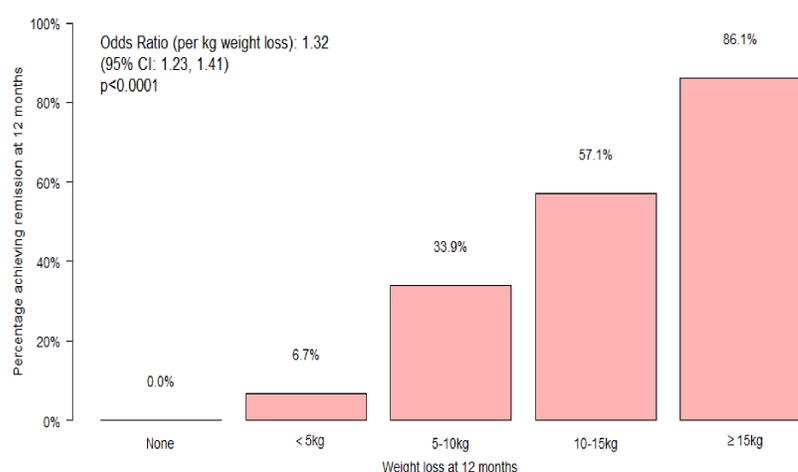
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### Introduction

In the DiRECT RCT, remission of type 2 diabetes (<6yrs duration) at 12months was achieved by:

- 46% intervention vs 4% control participants
- 86% participants with ≥15kg weight loss (Fig 1)<sup>1, 2</sup>

Predicting success in weight loss, and remission of diabetes, could guide patient selection and resource allocation



### Methods

Post hoc analysis of demographic and clinical data in the intervention participants (n=149, 83 (56%) male, mean age 53 years, mean BMI 35.1kg/m<sup>2</sup>)

Logistic regression models to seek associations between baseline characteristics and co-primary outcomes at 12months :

- Weight loss ≥15kg
- T2D remission (HbA1c<48mmol/mol off all anti-diabetes medications)

All models were mutually adjusted for age, sex, HbA1c at baseline, and GP practice as a random effect

References:

<sup>1</sup> Lean MEJ, Leslie WS, Barnes AC, Brosnahan N, Thom G, McCombie L et al. *The Lancet* 2017

<sup>2</sup> McCombie L, Leslie WS, Taylor R, Kennon B, Sattar N, Lean MEJ. *BMJ* 2017

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### Results

Primary outcomes not associated with socioeconomic deprivation, smoking, alcohol intake. Weak evidence that antidepressants may impair ≥15kg weight loss (p=0.085) and remission (p=0.064)

Significant baseline predictors for ≥15kg weight loss:

- Male sex
- Longer diabetes duration
- Greater baseline weight

Significant baseline predictors for remission of T2D:

- Older age,
- Lower HbA1c,
- Fewer anti-diabetic drugs,
- More antihypertensive drugs
- Higher blood pressure

#### Odds Ratios for Achievement of Primary Outcomes

Baseline Variable	Weight Loss ≥15kg	HbA1c <48 mmol/mol
Age	1.03 (p=0.362)	1.05 (p=0.0502)
Female sex	0.31 (p=0.008)	0.78 (p=0.477)
Diabetes duration (years)	1.31 (p=0.032)	1.01 (p=0.948)
Body weight (kg)	1.03 (p=0.024)	1.00 (p=0.928)
BMI (kg/m <sup>2</sup> )	1.11 (p=0.027)	1.04 (p=0.259)
HbA1c (%)	1.12 (p=0.490)	0.72 (p=0.038)
Anti-diabetic drugs (n)	1.19 (p=0.441)	0.43 (p<0.001)
Anti-hypertensives (n)	0.92 (p=0.644)	1.37 (p=0.045)
Blood pressure (mmHg)	1.00 (p=0.814)	1.03 (p=0.017)
	1.03 (p=0.123)	1.05 (p=0.013)

- Weight loss of ≥15kg improved the % achieving remission
- Although more men achieved ≥15kg weight loss, remission rates were not higher than women