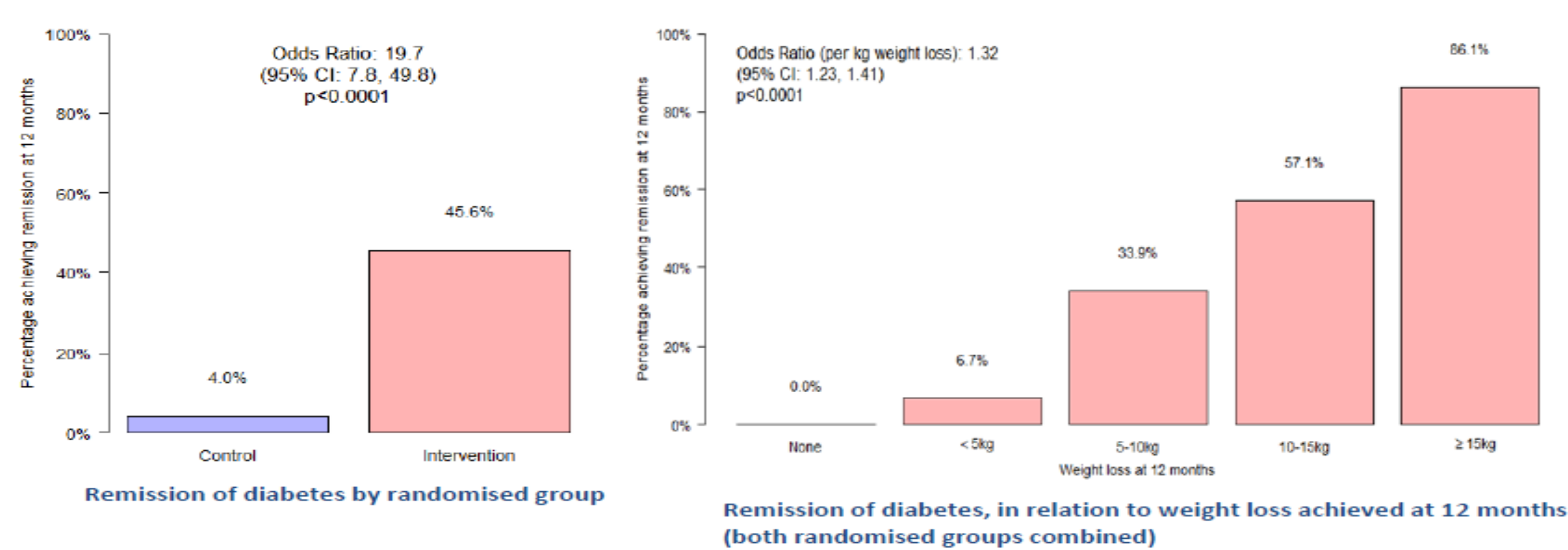


Modelling 'stopping rules' to optimise type 2 diabetes remission rate with an intensive weight management programme: the Diabetes Remission Clinical Trial (DiRECT)

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Introduction

12 month results from the DiRECT study showed a striking effect of weight loss on remission of recent onset T2D (< 6years) ^{1, 2}



We now investigate if early weight loss predicts success in achieving 15kg weight loss, or remission of T2D, at 12 months

Methods

- 149 intervention participants, (mean age 53 years, weight 101kg, BMI 35.1kg/m², 83 (56%) men)
- Treatment with 825-853cal/day nutritionally complete low energy formula diet (Counterweight-Plus) for Total Diet Replacement, with 2-weekly appointments in primary care ³
- Early weight loss thresholds of 2, 4, 6, 8, and 10kg examined, at 4, 6 and 8 weeks of intervention, as potential predictors of 12 month outcomes:

- Weight loss ≥15kg
- T2D Remission (HbA1c <48mmol/mol)

References:

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

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

³ Leslie WS, Ford I, Sattar N, Hollingsworth KG, Adamson A, Snihotta FF et al. *BMC Family Practice*, 2016; 17:20.

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Results

Weight losses at 4, 6, and 8 weeks were all significantly associated with success at 12 months

		Diabetes Remission	Weight loss ≥15kg	Withdrawal
Weight Loss at 4 weeks				
Weight Loss at 4 weeks	n(149)	n(%)	n(%)	n(%)
Withdrawn/Not Started	12	0 (0.0)	0 (0.0)	12 (100.0%)
< 2kg	8	2 (25.0)	0 (0.0)	4 (50.0%)
≥2kg, <4kg	27	10 (37.0)	3 (11.5)	6 (22.2%)
≥4kg, <6kg	47	23 (48.9)	9 (19.1)	3 (6.4%)
≥6kg, <8kg	36	22 (61.1)	13 (36.1)	3 (8.3%)
≥8kg, <10kg	9	5 (55.6)	6 (66.7)	3 (33.3%)
≥10kg	10	6 (60.0)	5 (50.0)	1 (10.0%)
P-value		p=0.0036	p=0.0004	p<0.0001
Weight Loss at 6 weeks				
Weight Loss at 6 weeks				
Withdrawn/Not Started	14	0 (0.0)	0 (0.0)	14 (100.0%)
< 2kg	2	0 (0.0)	0 (0.0)	1 (50.0%)
≥2kg, <4kg	8	4 (50.0)	1 (12.5)	2 (25.0%)
≥4kg, <6kg	27	11 (40.7)	2 (7.7)	4 (14.8%)
≥6kg, <8kg	49	24 (49.0)	9 (18.4)	5 (10.2%)
≥8kg, <10kg	20	12 (60.0)	8 (40.0)	1 (5.0%)
≥10kg	29	17 (58.6)	16 (55.2)	5 (17.2%)
P-value		p=0.0019	p=0.0001	p<0.0001
Weight Loss at 8 weeks				
Weight Loss at 8 weeks				
Withdrawn/Not Started	15	0 (0.0)	0 (0.0)	15 (100.0%)
< 2kg	1	0 (0.0)	0 (0.0)	0 (0.0%)
≥2kg, <4kg	4	1 (25.0)	0 (0.0)	2 (50.0%)
≥4kg, <6kg	11	4 (36.4)	0 (0.0)	2 (18.2%)
≥6kg, <8kg	31	14 (45.2)	4 (12.9)	2 (6.5%)
≥8kg, <10kg	33	15 (45.5)	5 (15.2)	5 (15.2%)
≥10kg	54	34 (63.0)	27 (50.0)	6 (11.1%)
P-value		p=0.0002	p<0.0001	p<0.0001

Conclusions

- Those failing to achieve early weight loss targets are more likely to withdraw from treatment of their own accord, however some go on to be successful
- Excluding those who fail to achieve specified early weight loss targets, but remain engaged with weight management, would deny treatment to a significant minority who benefit from continued weight loss support