

The NHS England Type 2 Diabetes Path to Remission Programme

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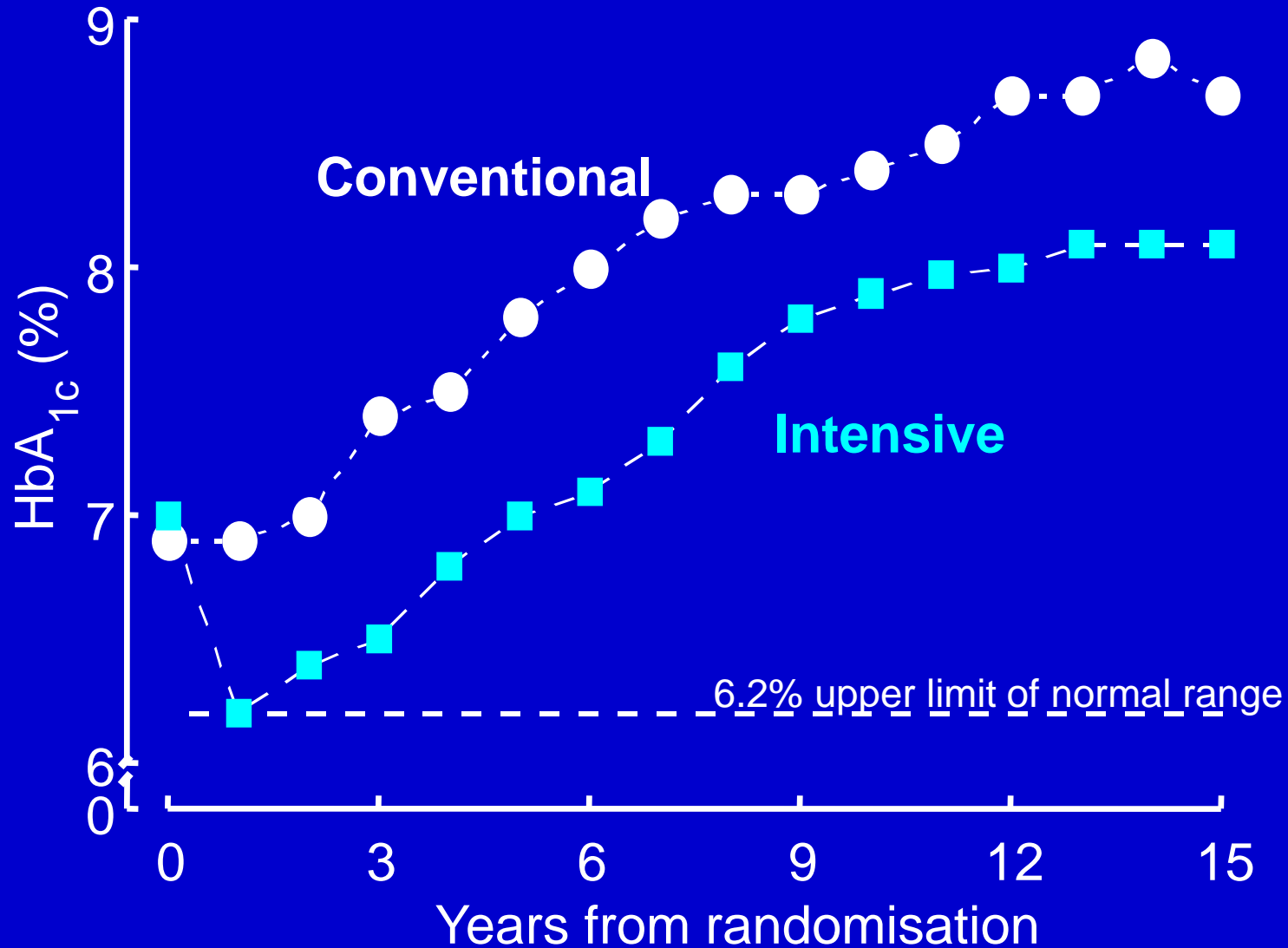
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National Clinical Lead for Multiple Long-Term Conditions, NHS England

ABCD Diabetes Update 2025: Thursday 30th January 2025

UK Prospective Diabetes Study

cross-sectional, median values



Primary care-led weight management for remission of type 2 diabetes (DiRECT): an open-label, cluster-randomised trial



Michael E J Lean*, Wilma S Leslie, Alison C Barnes, Naomi Brosnahan, George Thom, Louise McCombie, Carl Peters, Sviatlana Zhyzhneuskaya, Ahmad Al-Mrabeh, Kieren G Hollingsworth, Angela M Rodrigues, Lucia Rehackova, Ashley J Adamson, Falko F Sniehotta, John C Mathers, Hazel M Ross, Yvonne McIlvenna, Renae Stefanetti, Michael Trenell, Paul Welsh, Sharon Kean, Ian Ford, Alex McConnachie, Naveed Sattar, Roy Taylor*

Summary

Background Type 2 diabetes is a chronic disorder that requires lifelong treatment. We aimed to assess whether intensive weight management within routine primary care would achieve remission of type 2 diabetes.

Methods We did this open-label, cluster-randomised trial (DiRECT) at 49 primary care practices in Scotland and the Tyne-side region of England. Practices were randomly assigned (1:1) via a computer-generated list to provide either a

Lancet 2018; 391: 541-51

Published Online

December 5, 2017

[http://dx.doi.org/10.1016/](http://dx.doi.org/10.1016/S0140-6736(17)33102-1)

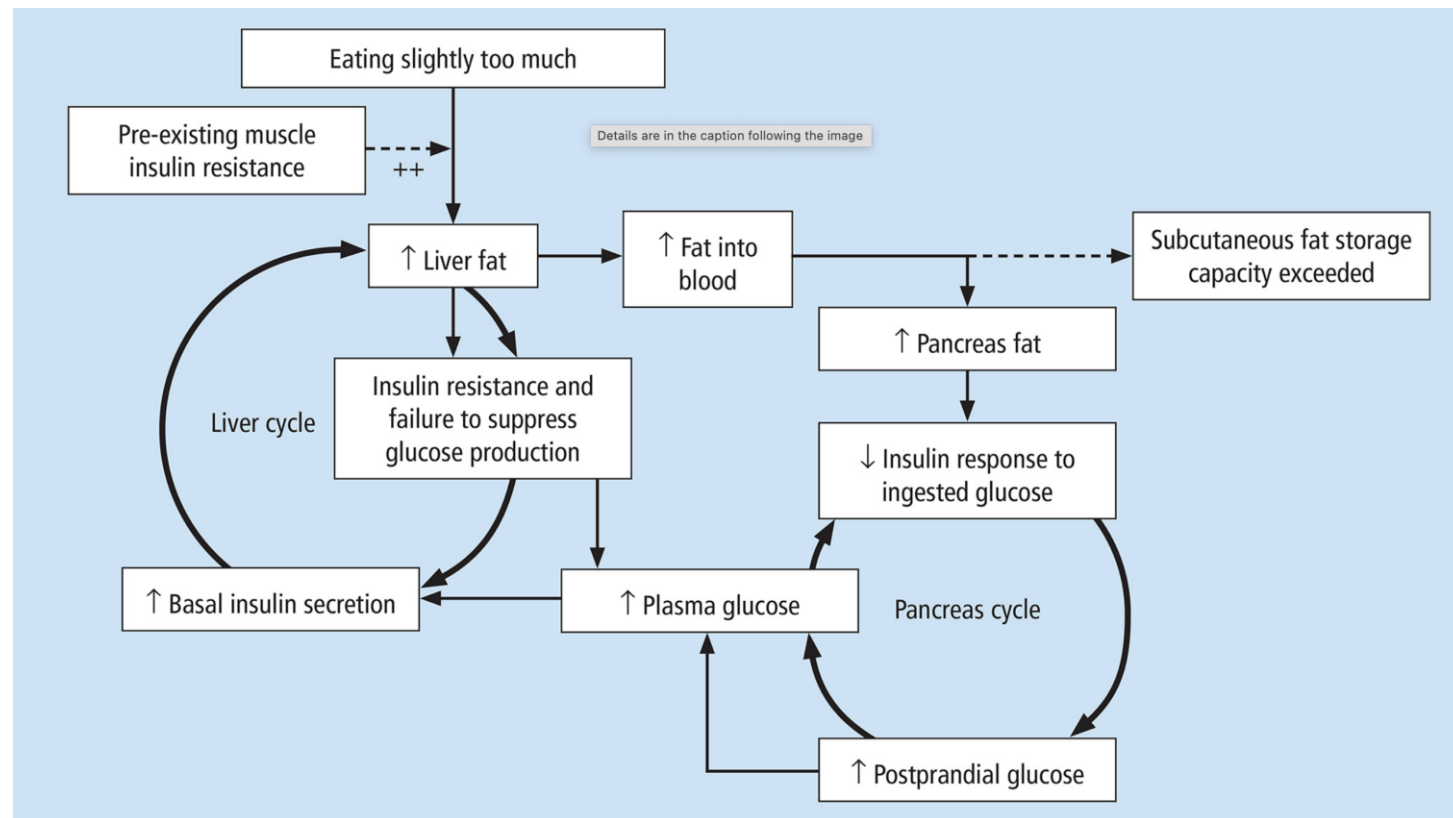
[S0140-6736\(17\)33102-1](http://dx.doi.org/10.1016/S0140-6736(17)33102-1)



Pathophysiology of type 2 diabetes

- Genes and intrauterine environment and adult environment.
- Insulin resistance and insulin secretion defects
- Fatty acids important in pathogenesis and complications

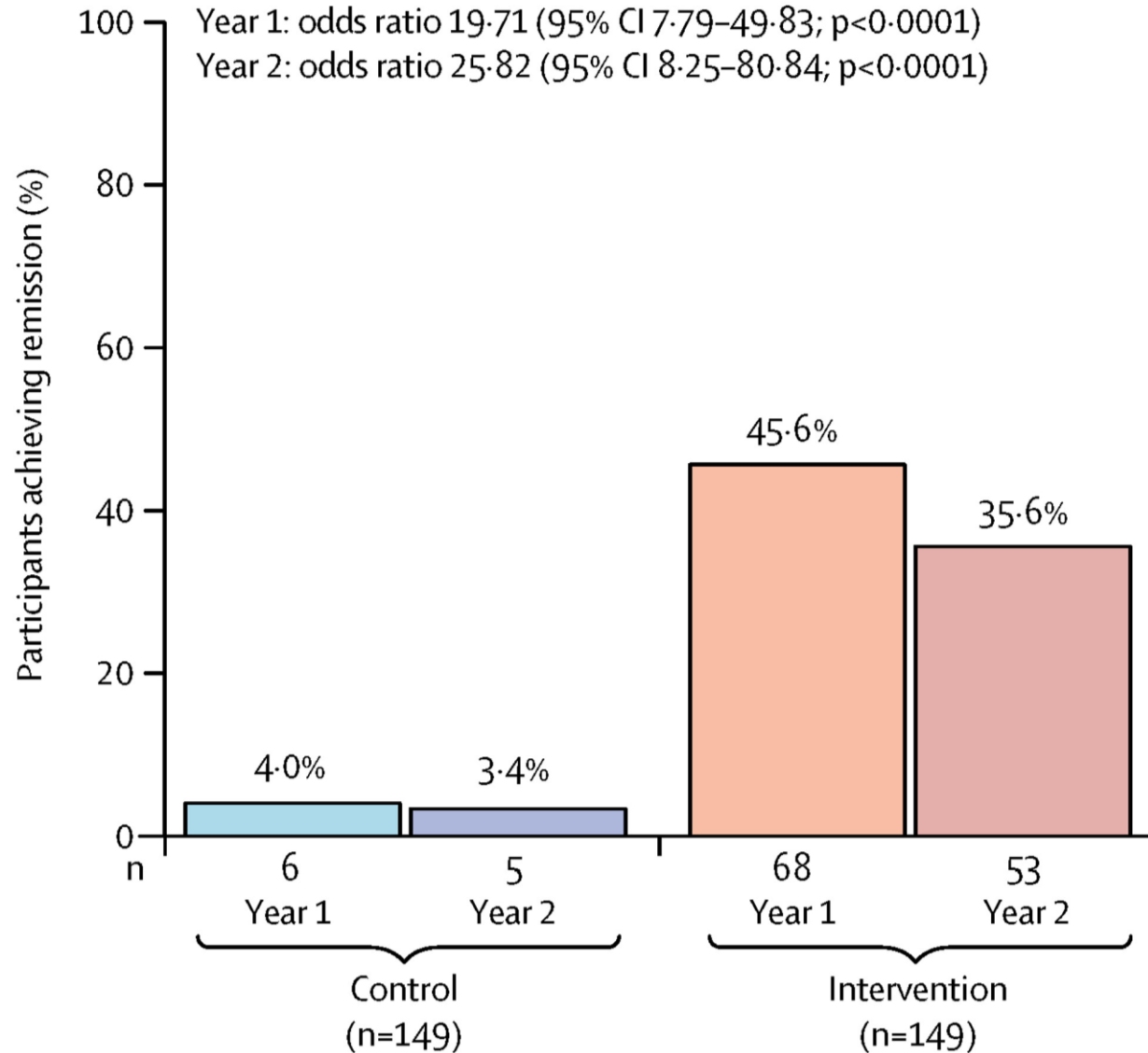
• **HETEROGENOUS**
People develop T2D at variable BMI, ages and progress differently so not “one size fits all”



Ectopic fat in liver and pancreas is one hypothesis: “Twin cycle hypothesis”

Taylor et al 2020 Practical Diabetes

DiRECT Longer-Term Remission Rates



Further 3 years extension:

- Low-intensity support for a further 3 years
- **At 5 years**, for DiRECT extension participants 11 (13%) of 85 in remission

**Lean et al. Lancet D&E
2024 Apr;12(4):233-246**



Impact of remission from type 2 diabetes on long-term health outcomes: findings from the Look AHEAD study

Edward W. Gregg^{1,2} · Haiying Chen³ · Michael P. Bancks³ · Raoul Manalac⁴ · Nisa Maruthur⁵ · Medha Munshi⁶ · Rena Wing⁷ · for the Look AHEAD Research Group

Received: 11 February 2023 / Accepted: 28 September 2023 / Published online: 18 January 2024
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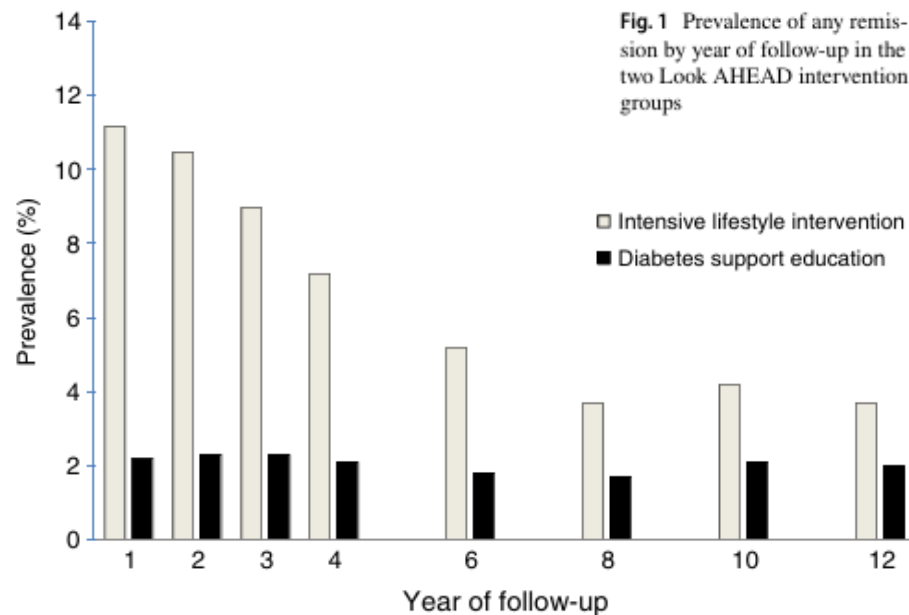


Fig. 1 Prevalence of any remission by year of follow-up in the two Look AHEAD intervention groups

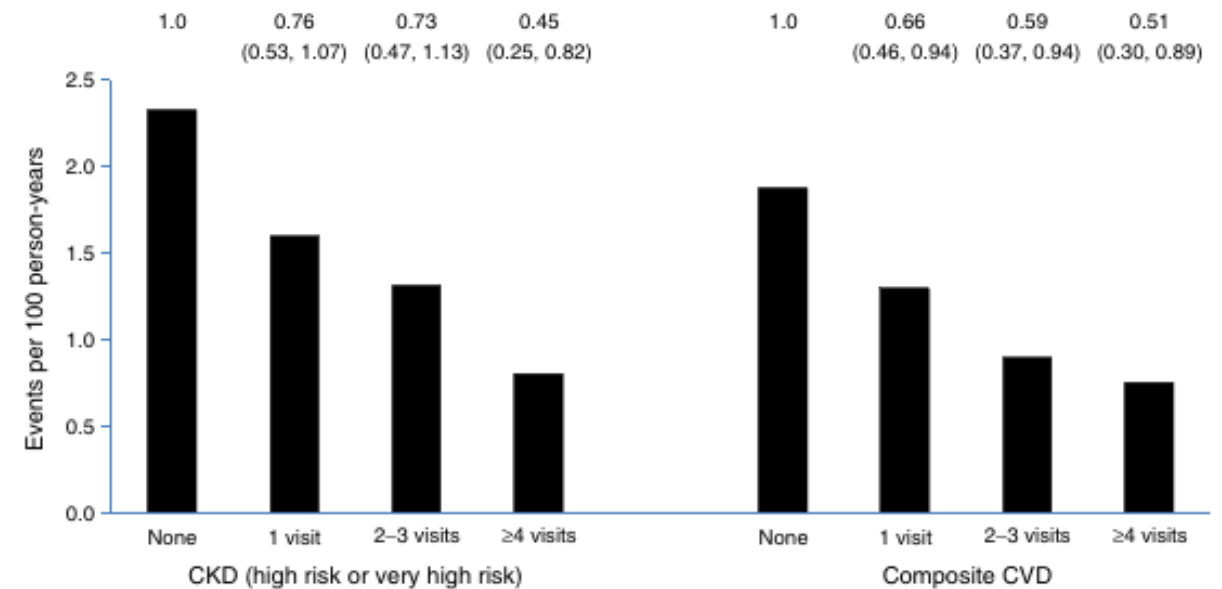
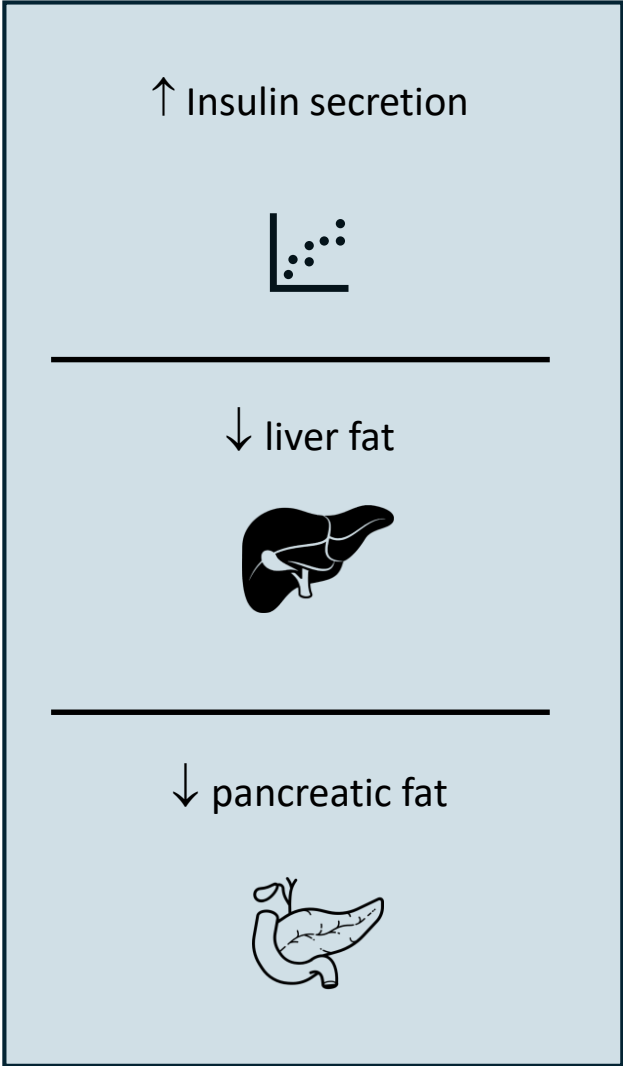
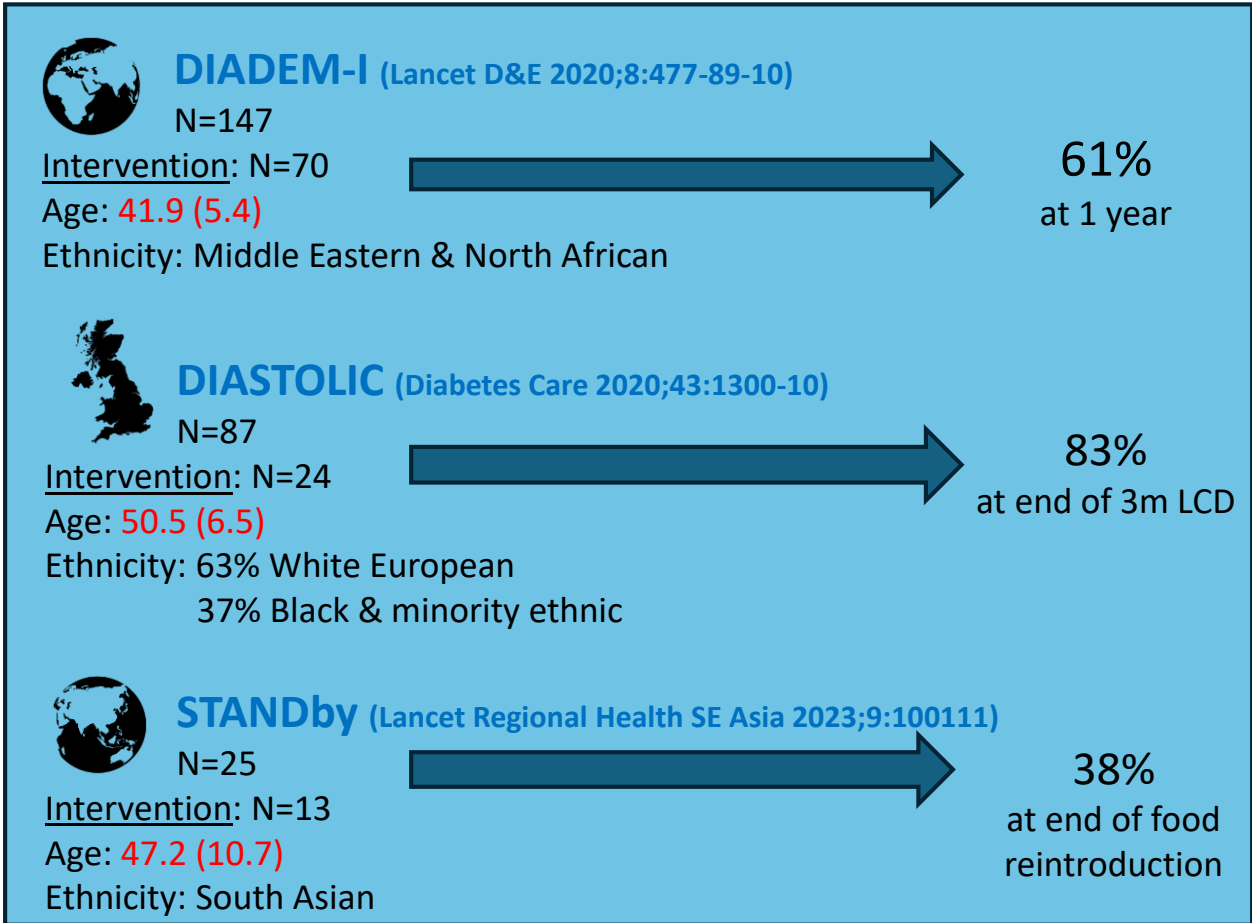


Fig. 2 Incidence of CKD and CVD based on number of visits with remission. The HR and 95% CI values are shown at the top

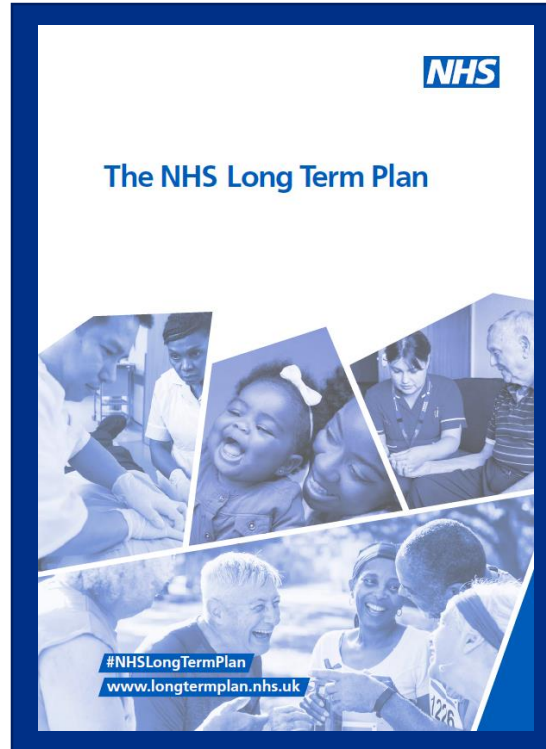


Data presented: Mean (SD)

NHS Type 2 Diabetes Path to Remission Programme



The NHS Long Term Plan



Evidence base

- Lean ME, Leslie WS, Barnes AC, Brosnahan N, Thom G, McCombie L, Peters C, Zhyzhneuskaya S, Al-Mrabeah A, Hollingsworth KG, Rodrigues AM, Rehackova L, Adamson AJ, Sniehotta FF, Mathers JC, Ross HM, McIlvenna Y, Stefanetti R, Trenell M, Welsh P, Kean S, Ford I, McConnachie A, Sattar N, Taylor R. Primary care-led weight management for remission of type 2 diabetes (**DiRECT**): an open-label, cluster-randomised trial. *Lancet*. 2018 Feb 10;391(10120):541-551.
- Astbury NM, Aveyard P, Nickless A, Hood K, Corfield K, Lowe R, Jebb SA. Doctor Referral of Overweight People to Low Energy total diet replacement Treatment (**DROPLET**): pragmatic randomised controlled trial. *BMJ*. 2018 Sep 26;362:k3760. doi: 10.1136/bmj.k3760. PMID: 30257983; PMCID: PMC6156558.

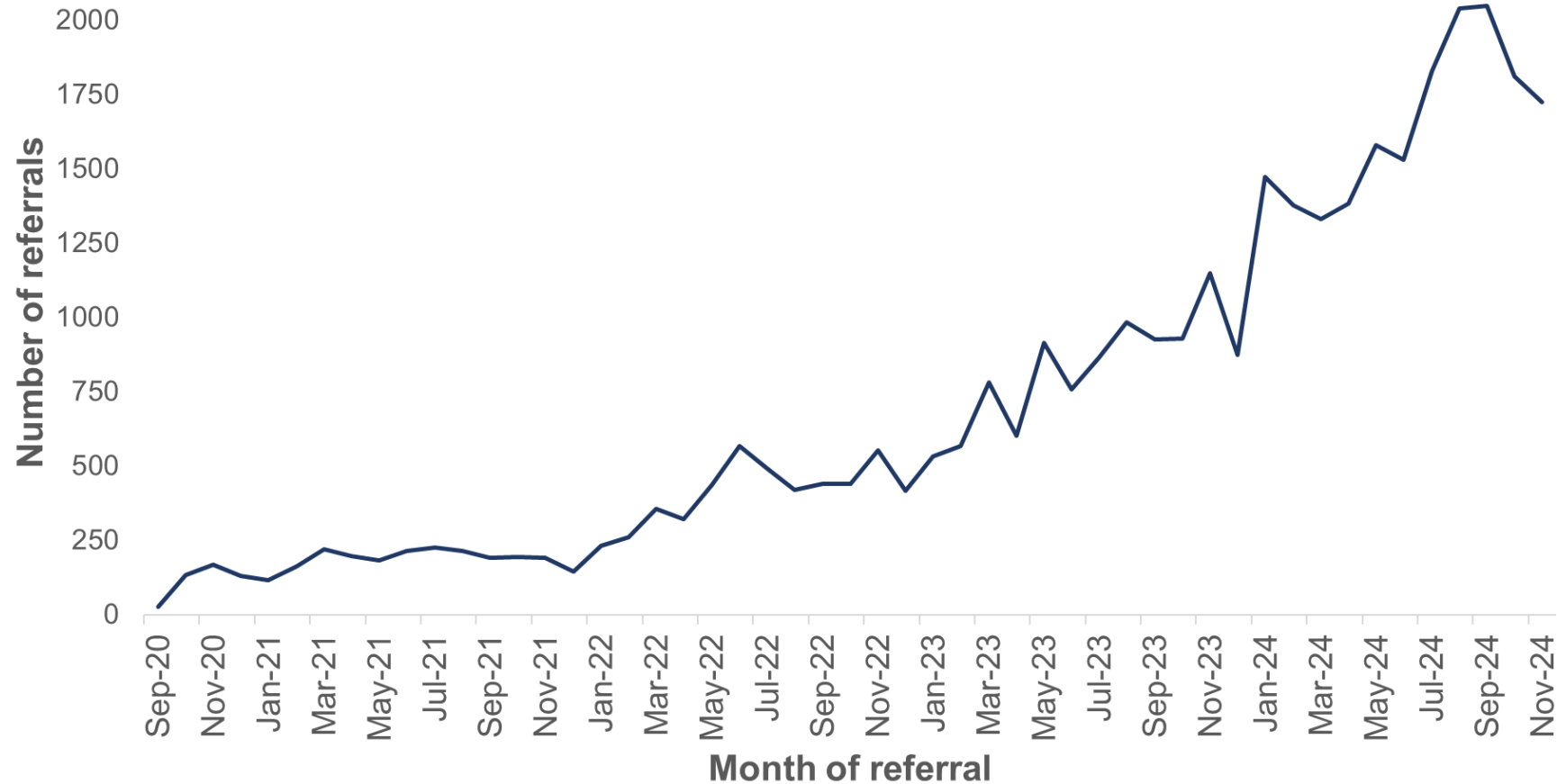
Model of evolution from 2020

- **Expert Reference Group**
- **Service specification**
- **Procurement - providers**
- **Each local area chooses from one of the providers**

Expert Reference Group

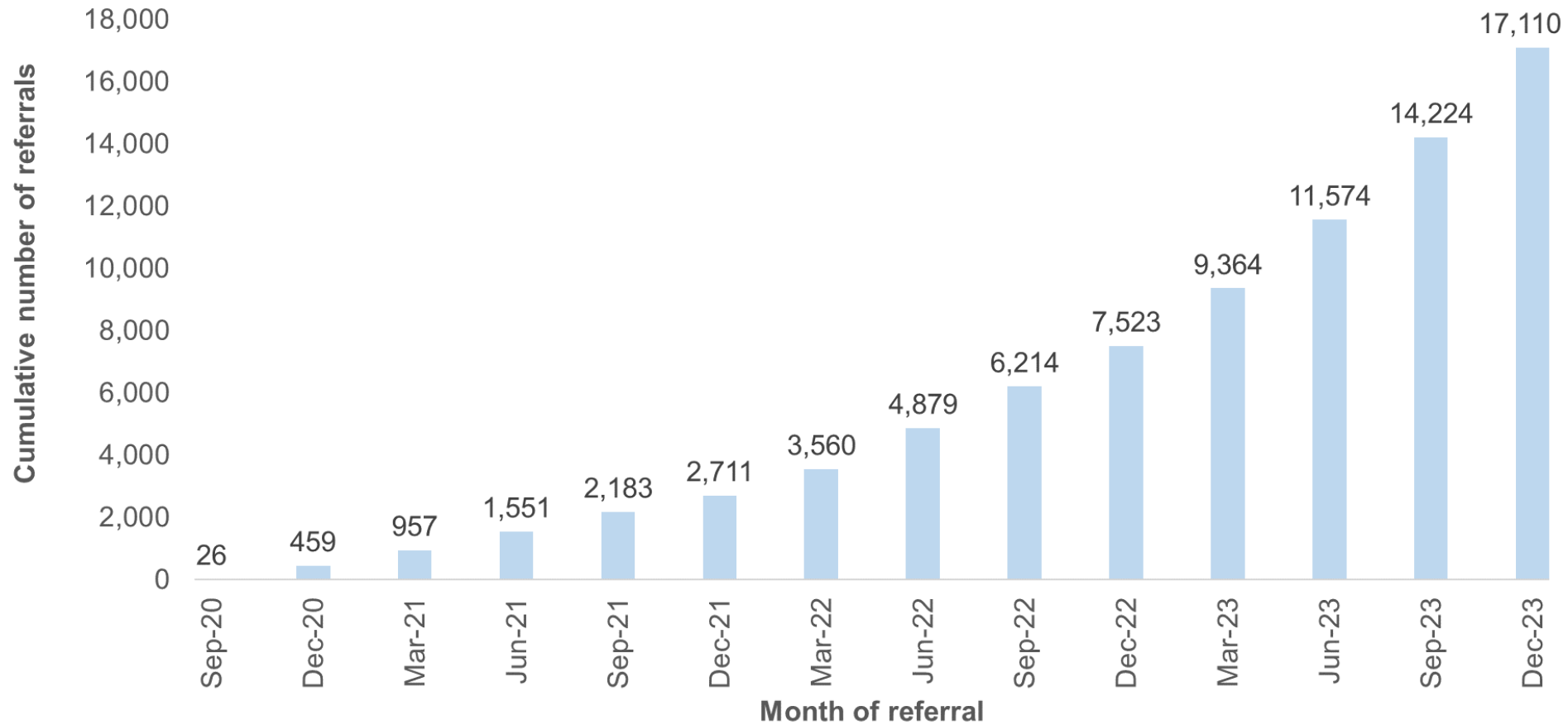
Name	Role & organisation
Prof Jonathan Valabhji (Chair)	National Clinical Director for Diabetes and Obesity, NHS England
Dr Chirag Bakhai	GP and Primary Care Advisor to the NHS Diabetes Programme
Emma Barron	Senior Analytical Manager, NHS England
Jamie Blackshaw	Team leader Obesity and Healthy Weight, Office for Health Improvement and Disparities
Shaun Crowe	Programme Director, NHS Diabetes Programme, NHS England
Fiona Earnshaw	Senior Analytical Manager, NHS England
Louisa Ells	Professor of Obesity, Re:Mission study, Leeds Beckett University (Qualitative Evaluation NHS LCD)
Clare Helm	Programme Manager, National Diabetes Programme, NHS England
Prof Susan Jebb / Prof Paul Aveyard	Professor of Diet and Population Health, University of Oxford Professor of Behavioural Medicine, University of Oxford
John Kernan	Commissioning Programme Manager, NHS Diabetes Programme, NHS England
Simon O'Neill	Director of Health Intelligence, Diabetes UK
Dr Elizabeth Robertson	Director of Research, Diabetes UK
Prof Roy Taylor	Professor of Medicine and Metabolism, Newcastle University
Martin Virr	Deputy Director, NHS Diabetes Programme, NHS England
Prof John Wilding	Clinical Research into Obesity, Diabetes and Endocrinology at the University of Liverpool
Dr Tony Willis	GP and Clinical Director for Diabetes for the North West London ICS

Number of referrals per month



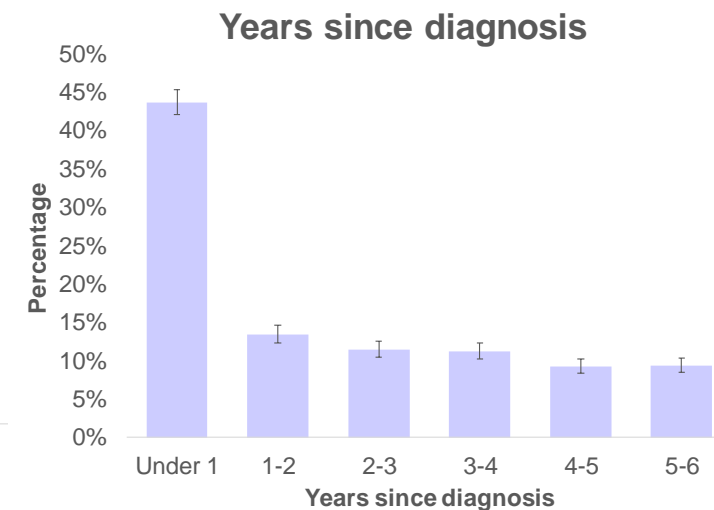
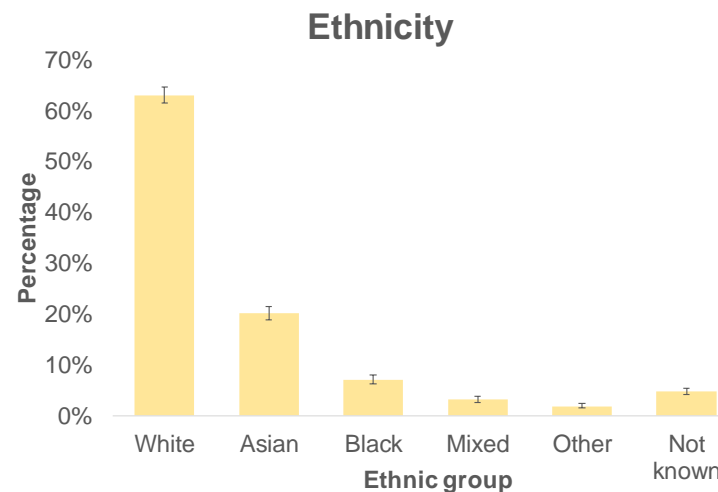
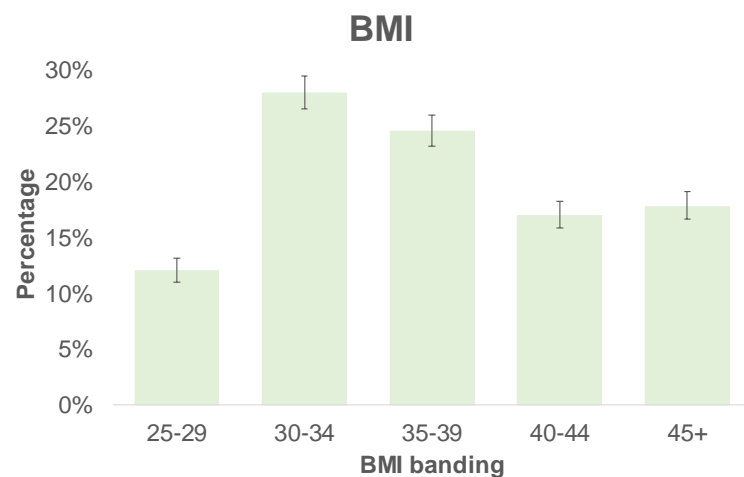
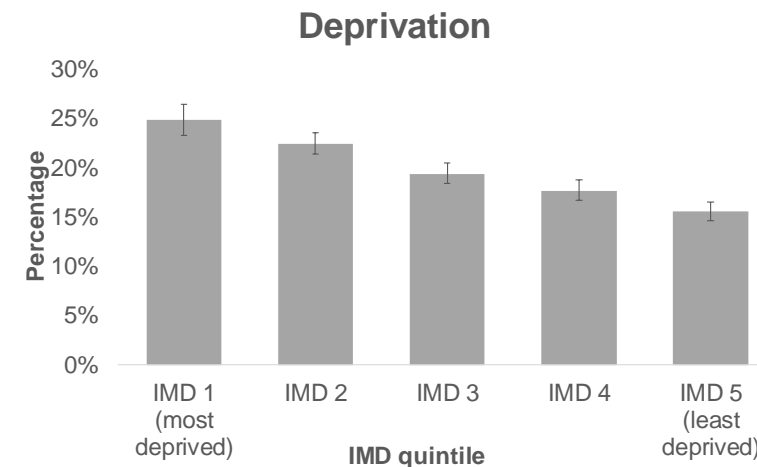
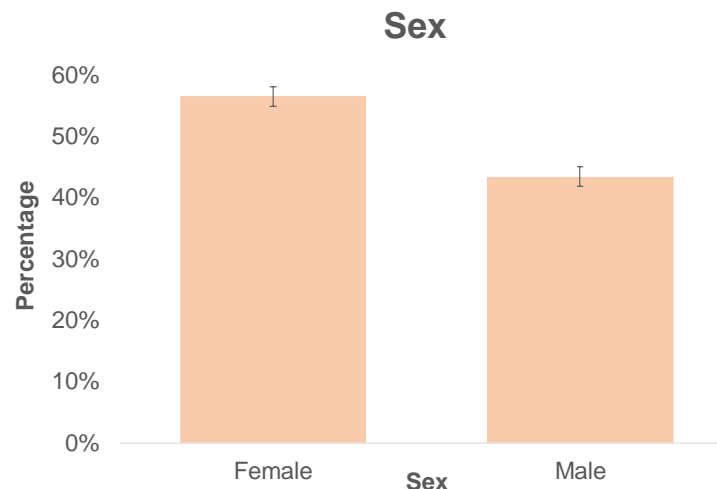
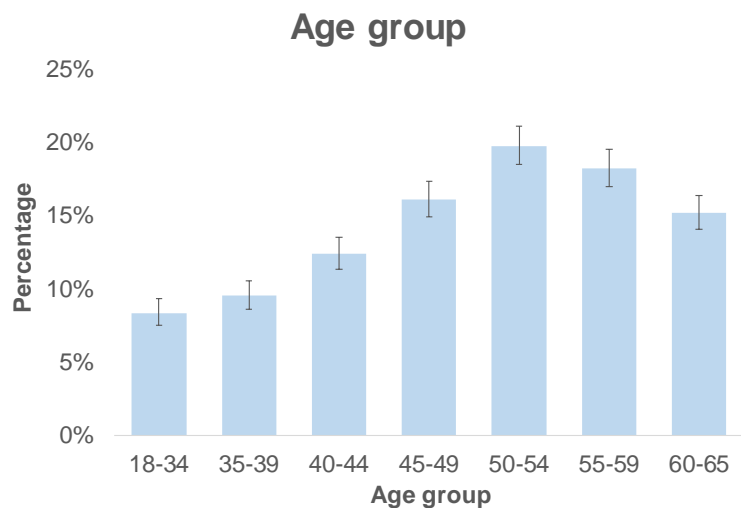
- Between September 2020 and November 2024, General Practices made **35,657** referrals to the NHS Type 2 Diabetes Path to Remission Programme. From April 2024 all 42 ICBs have been referring into the programme.

Number of referrals

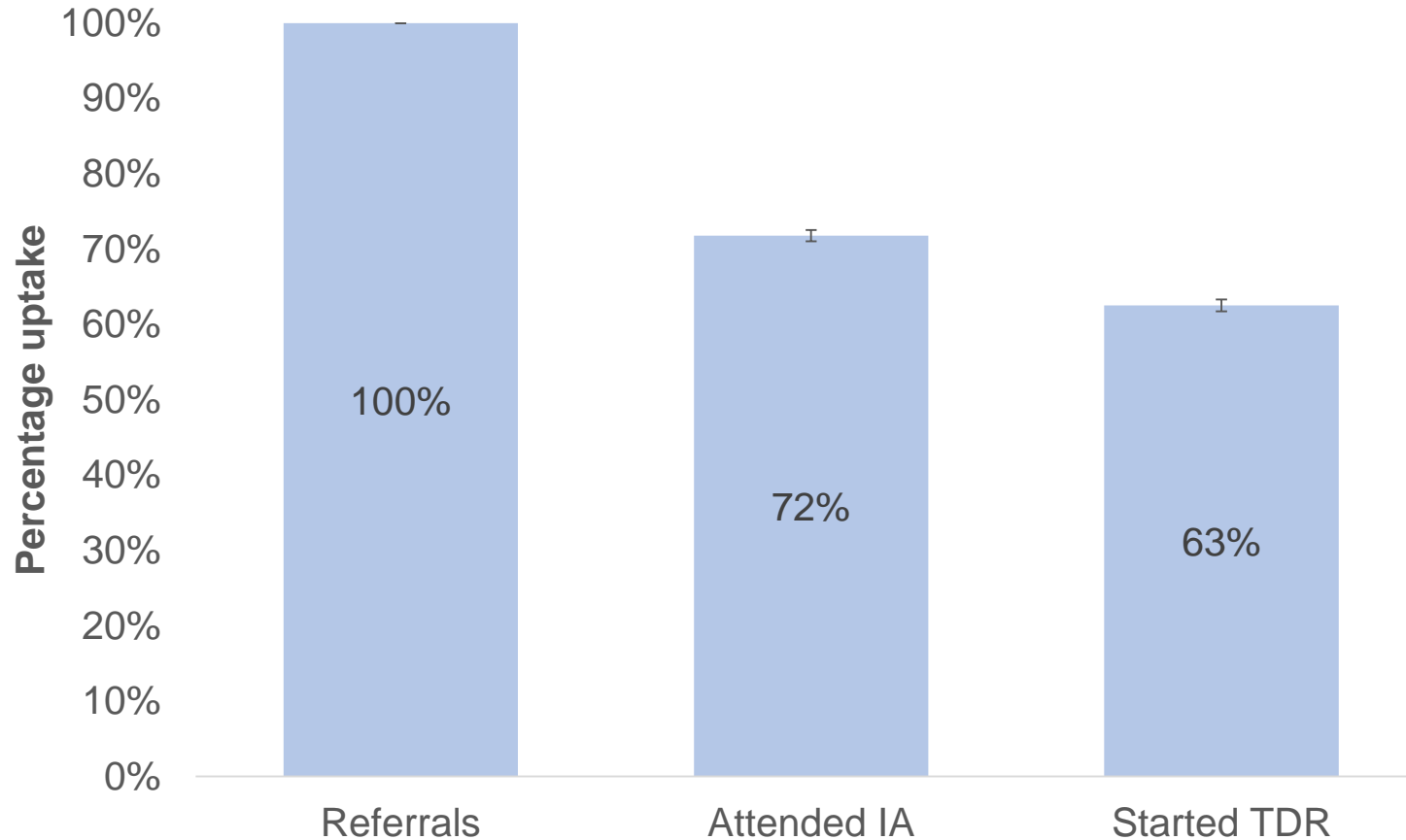


- Between September 2020 and December 2023, General Practices made **17,110** referrals to the NHS Type 2 Diabetes Path to Remission Programme, in 21 sites across England.

Distributions of referrals by age, sex, deprivation, BMI, ethnicity and years since diagnosis



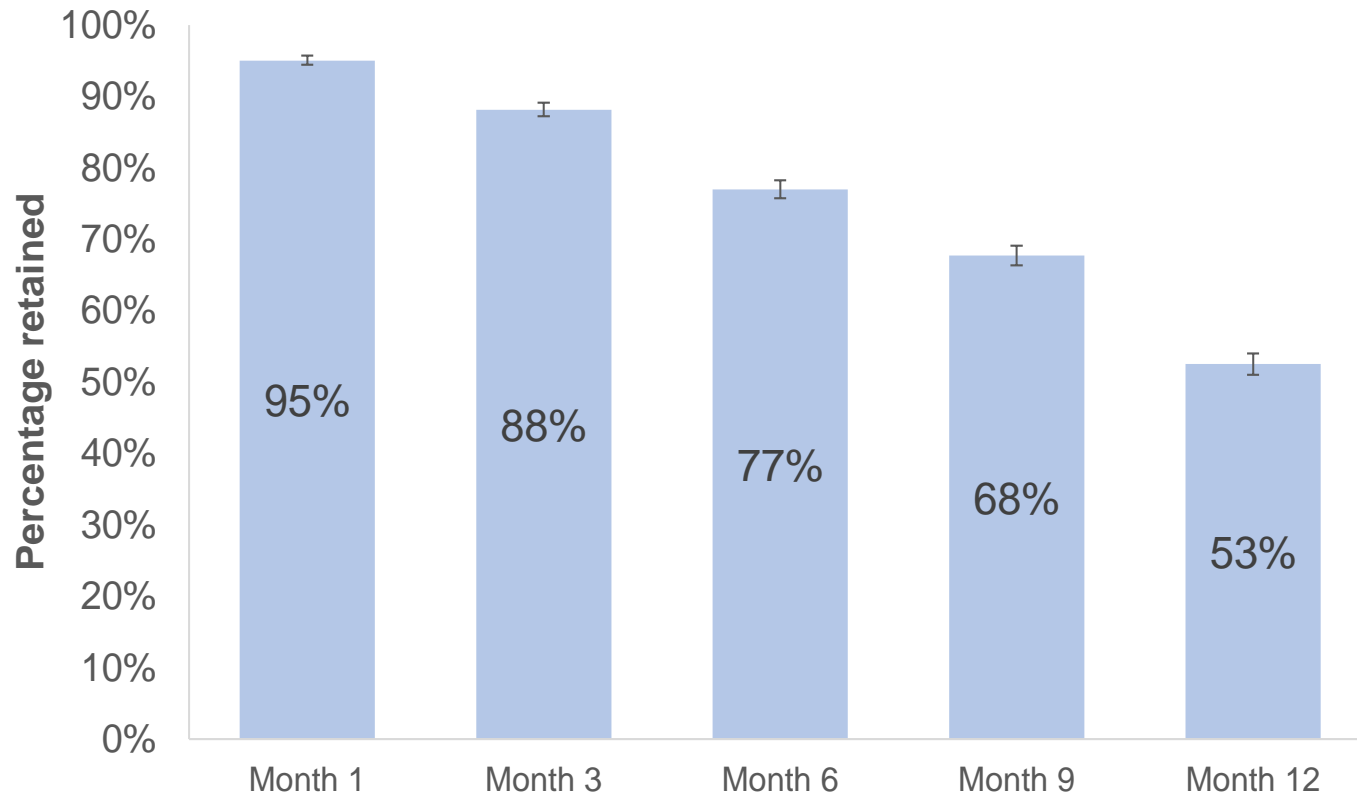
Overall uptake rates



Of those referred up to September 2023 (N=14,224):

- 72% of participants attended an Individual Assessment where their eligibility was further checked, and they were signed up to the programme.
- 63% of participants with eligible referrals started Total Diet Replacement (TDR).

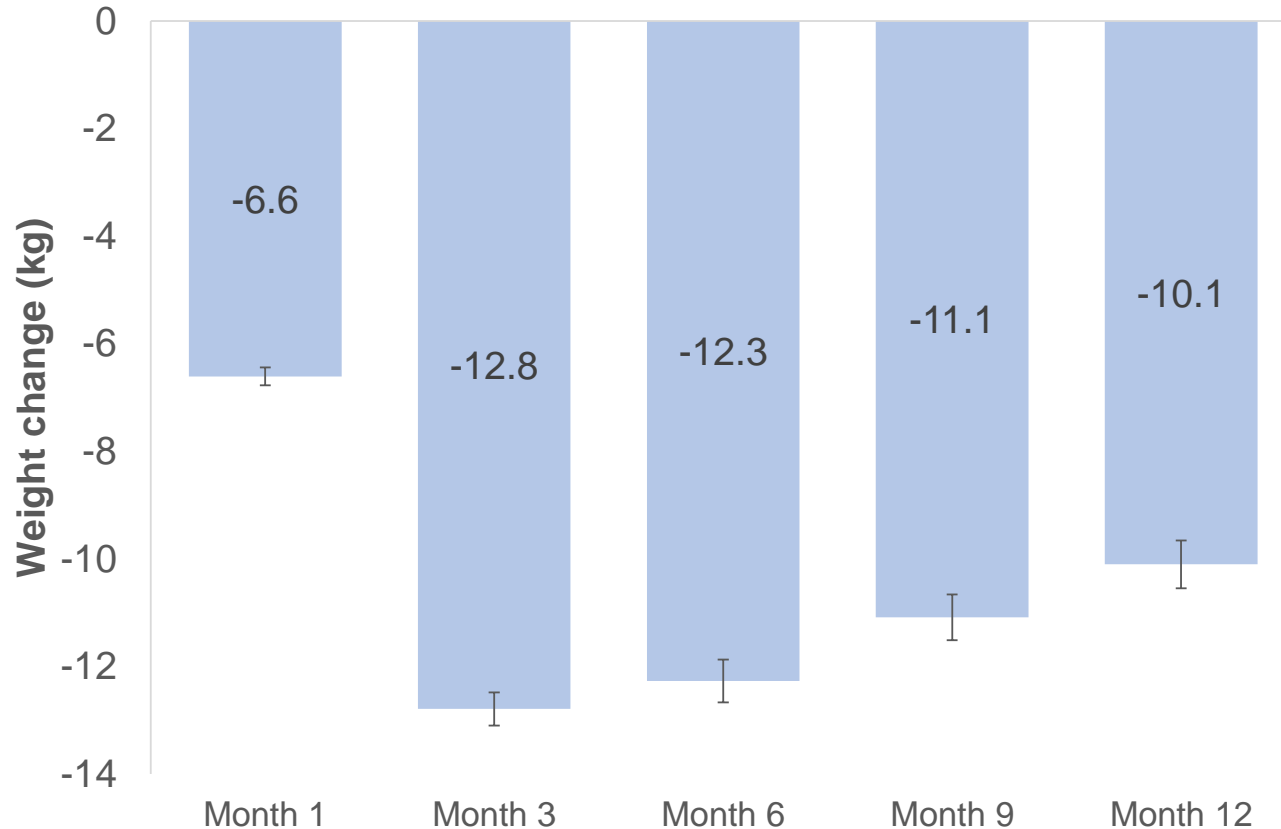
TDR retention rates to month 12



Of those who started on TDR and had time to reach month 12 (N=4,333):

- 95% attended a session at month 1 (TDR phase)
- 77% attended a session at month 6 (weight maintenance)
- 53% were retained at month 12

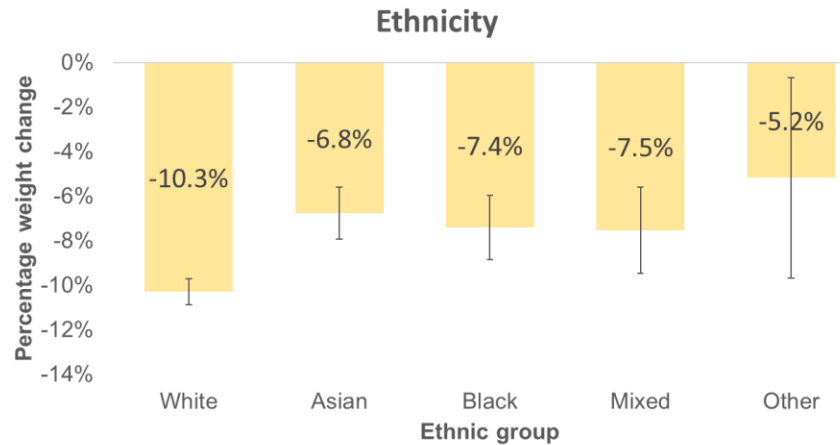
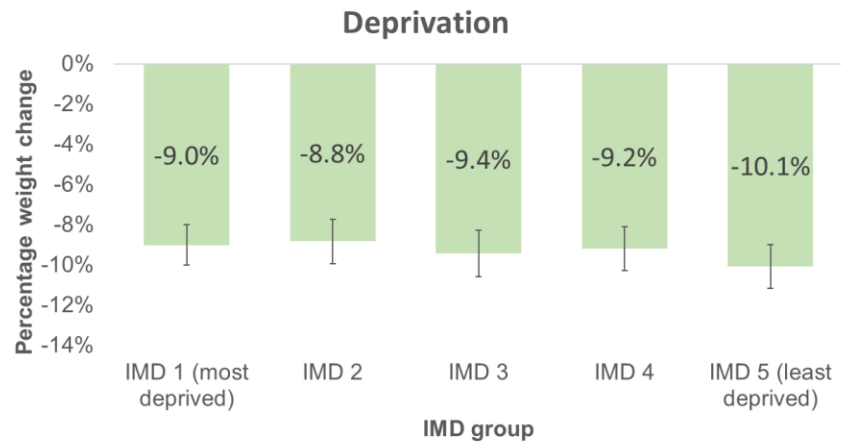
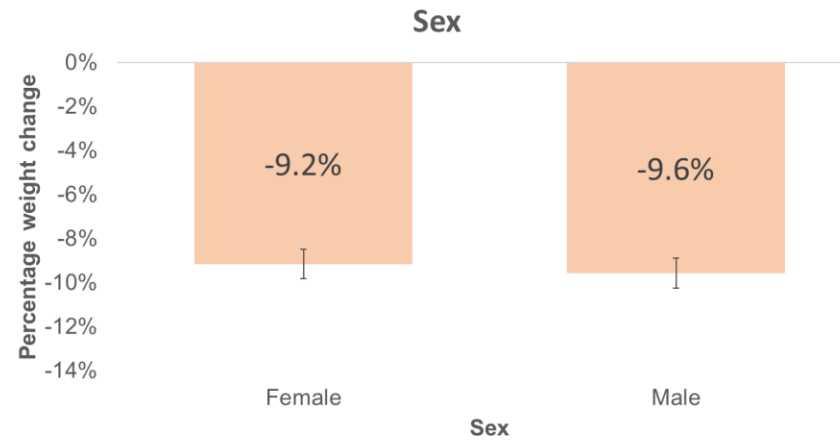
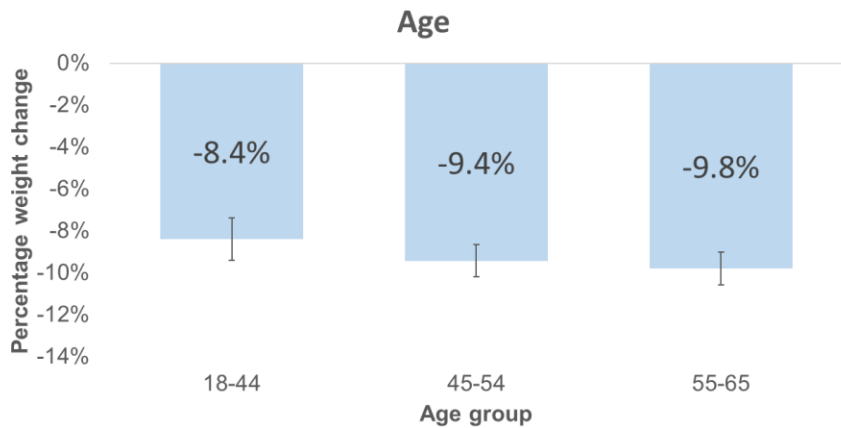
Mean weight change at 12 months



Of those active at 12 months and with weights recorded at all timepoints (N = 1,646):

- By week 4, the mean weight change was -6.6kg (95% CI: -6.8 to -6.4kg)
- By month 6, the mean weight change was 12.3kg (-12.7 to -11.9kg)
- By month 12 the mean weight change was 10.1kg (-10.5 to -9.7kg)

Mean percentage weight change at 12 months by age, sex, deprivation and ethnicity



- No significant differences in percentage weight change at month 12 by age, sex, or deprivation.

- Those of white ethnicity lost more weight than those of all other ethnicities.

Early findings from the NHS Type 2 Diabetes Path to Remission Programme: a prospective evaluation of real-world implementation

Jonathan Valabhji, Tessa Gorton, Emma Barron, Soraya Safazadeh, Fiona Earnshaw, Clare Helm, Martin Virr, John Kernan, Shaun Crowe, Paul Aveyard, John Wilding, Tony Willis, Louisa Ells, Simon O'Neill, Elizabeth Robertson, Susan Jebb, Roy Taylor, Chirag Bakhai

Summary

Background Randomised controlled trials have shown that total diet replacement (TDR) can lead to remission of type 2 diabetes. In 2019, the English National Health Service (NHS) committed to establishing a TDR-based interventional programme delivered at scale within real-world environments; development followed of the NHS Type 2 Diabetes Path to Remission (T2DR) programme, a 12-month behavioural intervention to support weight loss involving an initial 3-month period of TDR. We assessed remission of type 2 diabetes for programme participants.




Lancet Diabetes Endocrinol
2024; 12: 653-63

Published Online
August 5, 2024
[https://doi.org/10.1016/S2213-8587\(24\)00194-3](https://doi.org/10.1016/S2213-8587(24)00194-3)




Remission of type 2 diabetes at one year

- Remission of type 2 diabetes at 12 months was assessed for people who had started TDR and had enough time to finish the programme by December 2022.
- Programme data were linked to the National Diabetes Audit to obtain data on HbA1c and prescriptions of glucose-lowering medication in order to ascertain remission of type 2 diabetes.



Remission of type 2 diabetes at 1 year was defined as two consecutive HbA1c measurements $<48\text{mmol/mol}$ recorded at least 3 months apart, with:

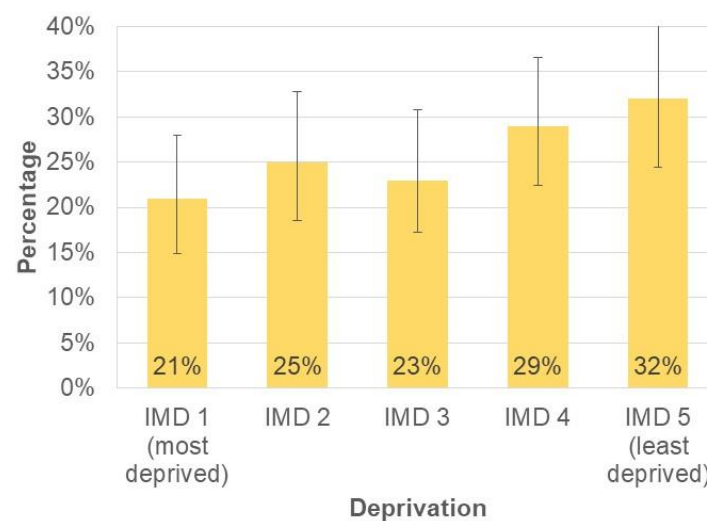
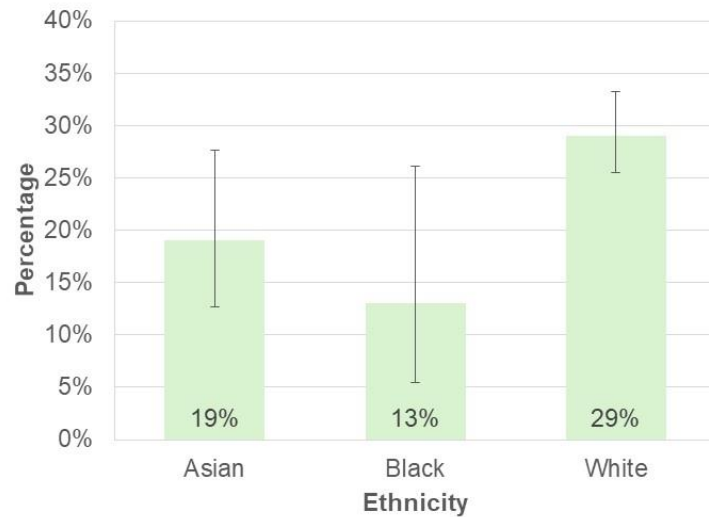
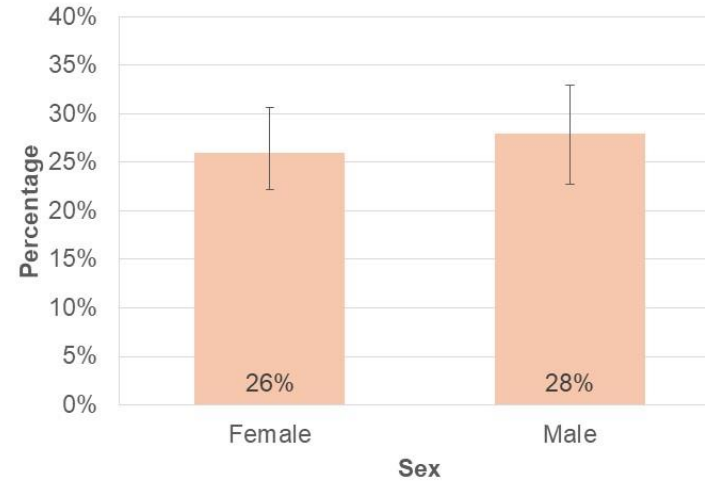
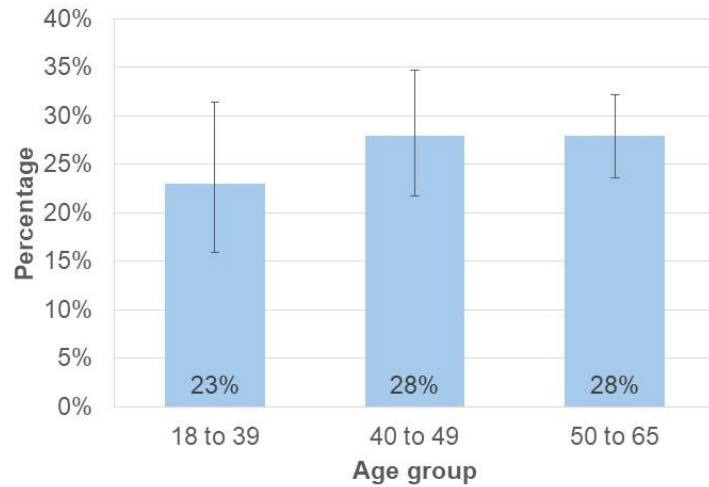
- (i) no glucose-lowering medications prescribed from 3 months before the earliest HbA1c measurement;
- (ii) the latest HbA1c measurement recorded 11-15 months after programme start;



Remission status for participants who had two HbA1c measurements recorded and had finished the programme by December 2022

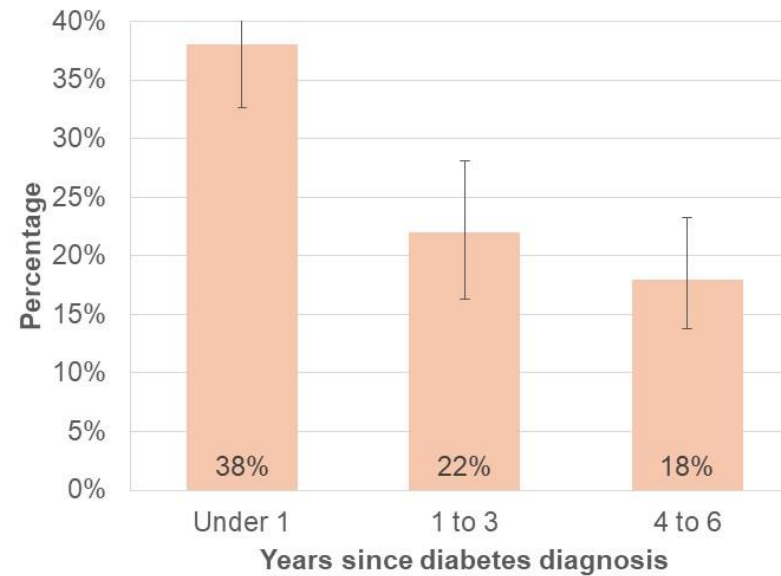
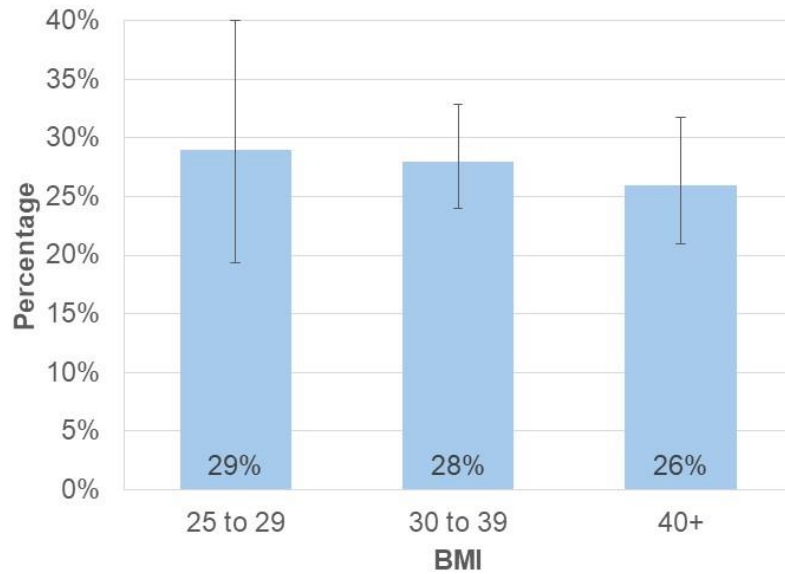
	Total	Remission	Percentage achieved remission
Finished the programme	710	190	27%
Completed the programme	450	145	32%

Remission at 12 months by age, sex, ethnicity and deprivation for those who **finished** the programme



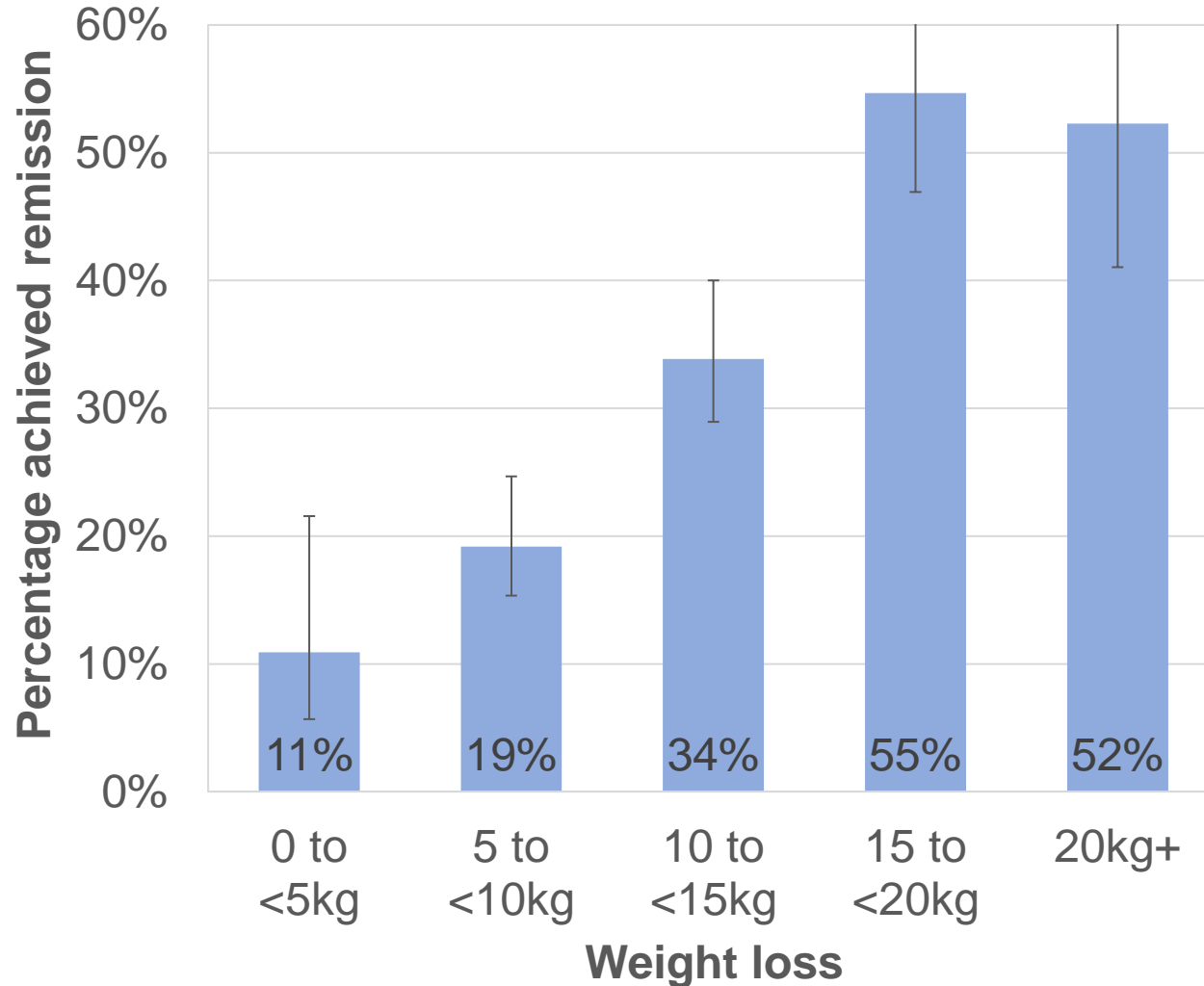
- No significant differences by age, sex, ethnicity and deprivation

Remission at 12 months by BMI and duration diabetes for those finished the programme



- People diagnosed with type 2 diabetes for under 1 year at time of referral being significantly more likely to attain remission
- No significant differences by BMI

Remission at 12 months by weight loss




- The mean weight loss for participants who finished the programme and achieved remission was 14.8 kg (95% CI: 13.4 to 16.3kg)
- The mean weight loss for participants who completed the programme and achieved remission was 15.9 kg (14.3 to 17.4kg)

Conclusion



Findings from the NHS Type 2 Diabetes Path to Remission Programme demonstrate that remission of type 2 diabetes can be achieved outside of research settings, through at-scale service delivery, although the rate of remission achieved is lower than those reported in randomised controlled trial settings.




CORRESPONDENCE · Volume 12, Issue 4, P229-230, April 2024

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Real-World Evidence for Decisions in Diabetes



 OPEN ACCESS



Dapagliflozin plus calorie restriction for remission of type 2 diabetes: multicentre, double blind, randomised, placebo controlled trial

Yuejun Liu,¹ Ying Chen,¹ Jianhua Ma,² Jiayang Lin,³ Changqin Liu,⁴ Xuejun Li,⁴ Yong Xu,⁵ Hongyu Kuang,⁶ Lixin Shi,⁷ Yaoming Xue,³ Bo Feng,⁸ Dalong Zhu,⁹ Guang Wang,¹⁰ Jinkui Yang,¹¹ Xinhua Xiao,¹² Xuefeng Yu,¹³ Jiaqiang Zhou,¹⁴ Yuqian Bao,¹⁵ Qing Su,¹⁶ Minzhi Lyu,¹⁷ Xiaomu Li,¹ Huijie Zhang,³ Xiaoying Li^{1,18}

Cite this as: *BMJ* 2025;388:e081820

<http://dx.doi.org/10.1136/bmj-2024-081820>

Accepted: 19 November 2024



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Cite this as: *BMJ* 2025;388:r40
<http://doi.org/10.1136/bmj.r40>
Published: 22 January 2025

SGLT2 inhibitors and dietary calorie restriction for type 2 diabetes remission

Combined strategy is effective but questions remain

David Hope, Jonathan Valabhji

The view that the hyperglycaemia associated with type 2 diabetes is inexorably progressive was also showed benefits of dapagliflozin on body fat

EDITORIALS

Primary outcome: incidence of T2D Remission at 12 months

Moderate calorie restriction: 500-750 kcal/day reduction

Plus:

- **Dapagliflozin:** Remission in 44% (73/165), with mean weight loss 5.0kg
- **Placebo:** Remission in 28% (46/163), with mean weight loss 3.2kg

Risk ratio 1.56, 95% CI 1.17 to 2.09; P=0.002

Thank You for Your Attention