

Participant experiences during the NHS Low Calorie Diet Programme pilot. Findings from an online survey

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Abstract

Background: In 2020, NHS England commissioned independent commercial service providers to deliver a Low Calorie Diet Programme pilot, offering Total Diet Replacement alongside behavioural support.

Methods: This paper presents participant experiences of the programme using both quantitative and qualitative data derived from four cross-sectional surveys, and examines differences by sociodemographics, delivery model and provider.

Results: The majority of participants reported a positive experience with the referral process, with a small proportion feeling that insufficient information was provided and that they did not feel respected or listened to by their healthcare professional. Participants' relationship with their coach was generally positive throughout each phase of the programme, and highlights the importance of coach-participant relationships. The relationship with the coach via digital delivery was less favourable compared to other delivery models, as was the perceived adequacy of support provided.

Conclusions: The experience of the referral from general practice and the relationship with the coach are key elements of the participant experience. They demonstrate the importance of, and need for, person-centred care.

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Introduction

The 52-week NHS Low Calorie Diet (LCD) programme consists of 12 weeks of Total Diet Replacement (TDR), followed by 4-6 weeks of phased food reintroduction and ongoing weight maintenance support for the remaining duration; behaviour change support is delivered using one of three models (group, one-to-one and digital).¹ The programme was available to adults aged 18-65 years, with a BMI $\geq 27\text{kg/m}^2$ (adjusted for ethnicity), and a diagnosis of type 2 diabetes (T2DM) within the previous six years (full eligibility criteria).¹ In addition to the quantitative demonstration of clinical efficacy,² a qualitative evaluation was commissioned to explore participant experiences, to inform service development and to provide recommendations relevant to healthcare professionals, service providers, local health economies and commissioners. An overview of the methods used in the qualitative evaluation is reported by Homer *et al.*³

Methods

Study design

This study used anonymous online surveys (Qualtrics, Provo, UT), distributed to participants at baseline, end of the TDR phase (12-week survey), end of the food reintroduction phase (18-week survey), and end of the weight maintenance phase (52-week survey). Participants were invited to take part by email (which included a link to the survey and freephone number to complete the survey over the telephone) via their service providers. Service providers were requested to distribute surveys, estimated to take between 20 to 30 minutes to complete, to all service users between September 2021 and April 2023. In cases where access to email was limited, paper copies of the invitation and survey were provided. Participants were requested to complete surveys at all time points. However, due to a low number of completed longitudinal responses the data presented are cross-sectional.

Surveys

Surveys were co-developed with the study Patient and Public Involvement and Engagement group,⁴ NHSE, Diabetes UK and service providers, then tested with 12 NHS LCD participants to ensure acceptability. The content of each survey was divided into two parts: (1) experiences of the programme, and (2) lifestyle, physical health and wellbeing (a copy of the surveys

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can be found in supplementary file 1 – online at www.bjd-abcd.com). This paper reports findings from the first part of the surveys which explored: the referral process; initial contact and support from service providers; TDR products; perceived positives and negatives of each stage of the programme; and views on possible improvements. Section two of the survey is reported elsewhere.⁵

Analysis

To enable analyses of participant experiences by sociodemographics, delivery model and provider, survey responses were anonymously linked (via a unique referral ID) to data collected by NHS England as part of the services' standard operating practices. Any variations noted based on sociodemographics, delivery model or provider are highlighted in the Findings section; otherwise, no differences were observed. For Likert scale questions, the frequency and distribution of survey responses were calculated using SPSS (version 28). For free text responses, thematic analysis was conducted by KD and DR,⁶ using NVivo software (Version 12) for storage and organisation.

Findings

Participants

At baseline 719 participants responded, which fell to 269 at 12 weeks, 167 at 18 weeks and 78 at 52 weeks (note, the number of respondents to individual questions varies because question responses were not mandatory). The sociodemographic characteristics of participants are presented in Table 1 and their distribution by delivery model in Table 2. Sociodemographic characteristics were available for 580 (81%) individuals at baseline, 220 (82%) at 12 weeks, 138 (83%) at 18 weeks and 69 (88%) at 52 weeks. Data linkage was not possible for the remaining participants due to erroneous unique referral IDs. Participant sociodemographics and programme characteristics were representative of the overall LCD programme, according to interim data presented to the advisory group in summer of 2023.

The referral process

Seven hundred and eight participants answered Likert scale response questions related to their contact with their referring healthcare professional (HCP) (Figure 1), the majority of whom (81% to 88%) indicated a positive experience ('strongly agree' or 'agree' responses). Approximately 10% of participants did not agree that their HCP answered all their questions, explained what would happen next in the referral process, or listened to their needs and treated them with respect. Free text responses when asked about possible referral process improvements included 33 participants stating that referral staff needed to better understand the programme and referral process, and to provide more information at the point of referral. Nineteen participants commented that it took a long time to start the programme after referral and 14 participants (nine from the group delivery model) reported a lack of communication during this time.

Table 1. Participant socio-demographics

	Baseline (n=580)	Survey		
		12 weeks (n=220)	18 weeks (n=138)	52 weeks (n=69)
Sex				
Male	39%	43%	44%	54%
Female	61%	57%	56%	46%
Ethnicity				
White	80%	84%	88%	83%
Other ethnic group	20%	16%	12%	17%
IMD quintile [§]				
1	29%	26%	23%	33%
2	22%	19%	19%	10%
3	16%	23%	20%	19%
4	15%	14%	20%	19%
5	17%	19%	18%	19%
Age (years)				
<39	15%	12%	7%	10%
40-49	27%	21%	25%	17%
50-59	39%	40%	44%	39%
60+	19%	28%	24%	33%

[§] The Index of Multiple Deprivation (IMD) score is an absolute measure of deprivation that allows for Lower Super Output Areas (LSOAs) in England to be ranked and subsequently classified into five quintile bands. Quintile 1 is the 20% most deprived LSOAs in England, while quintile 5 is the 20% least deprived LSOAs.

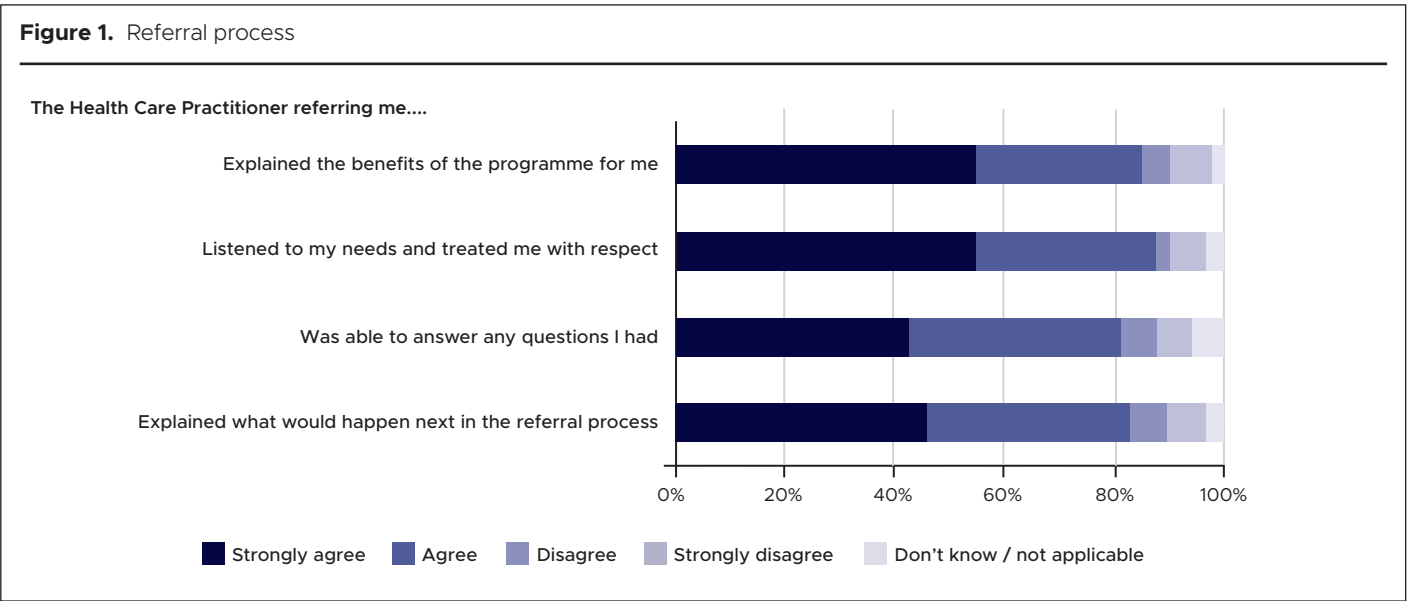
Table 2. Distribution of participants by delivery model

Delivery model	Baseline	Survey		
		12 weeks	18 weeks	52 weeks
Group	405 (56%)	155 (58%)	81 (48%)	34 (44%)
1-2-1	191 (27%)	51 (19%)	45 (27%)	23 (29%)
Digital	123 (17%)	63 (23%)	41 (25%)	21 (27%)

Initial contact and support from service providers

Six hundred and eighty four participants answered Likert scale response questions related to their early contact with their service provider. Overall, 90% 'agreed' or 'strongly agreed' that the people doing their initial assessment were helpful and supportive, and that the process gave them an understanding of what to expect on the programme. Consideration by provider indicated some differences in participant experience: positive ('agreed' or 'strongly agreed') responses were obtained by more than 92% of participants for four providers, 79% by one provider and 47% by another (although it should be noted that 49% of respondents reported 'don't know / not applicable' for this last provider).

Free text responses when asked what to improve in their initial contact with service providers indicated that some participants (n=15) felt the provider needed to provide information earlier to help to manage their expectations, raise awareness of potential side effects, and provide a TDR product start date. Forty participants reported the need for better communication, including clearer and more streamlined



information, and the need to be able to contact the provider more easily. The desire to receive a phone call, rather than just app messages or chat, was highlighted by 5 out of 25 participants from one of the digital providers.

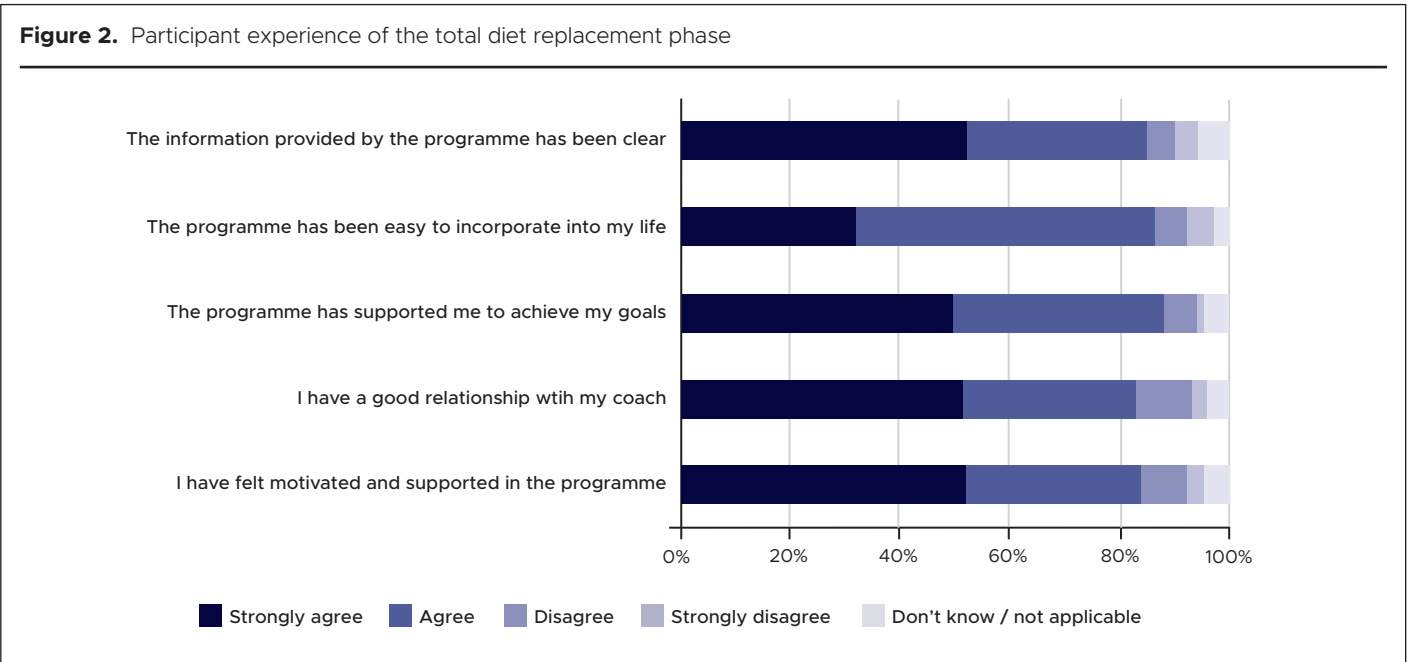
Total diet replacement product

Two hundred and sixty four participants rated their TDR products: 63% rated them as ‘nice’ or ‘very nice’, 31% as ‘okay’ and 6% as ‘not very nice’ or ‘horrible’. There were some differences by provider: positive (‘nice’ or ‘very nice’) responses ranged from 57% to 87% and only two providers obtained positive responses from more than 65% of their service users. Of the 264 participants, 173 provided additional detail on TDR products improvements (see table 1 in supplementary file 2 – online at www.bjd-abcd.com – for example free text quotes). A

desire for more variety in products was most frequently noted (n=70), followed by the need to improve flavour/taste and texture (n=65), with all the different TDR products being referenced. Twenty nine participants felt the products were too sweet or wished that more savoury options were available, and 16 participants wanted more solid food options. Eighteen participants (15 of whom had a particular service provider) also highlighted challenges in obtaining the products advertised on suppliers’ websites.

TDR phase

Two hundred and sixty seven participants answered Likert scale response questions about their experiences during the TDR phase (Figure 2). The majority of participants (85% to 88%) indicated that the information provided by the programme was



clear, the programme was easy to incorporate into their lives and that it helped them to achieve their goals. Furthermore, participants felt supported in the programme (84%) and had a good relationship with their coach (83%). There were consistently positive experiences for the majority of participants across providers and delivery models, with more than 70% of participants responding positively to all questions.

Of the 267 participants, 109 provided information on the positive aspects of TDR, which included: “weight loss” (n=88), “lower blood sugar” (n=48) and other health benefits n=34, including “reduced blood pressure”, “feeling fitter”, “increases in energy”, “more confidence” and “feeling healthier”. Some participants also highlighted the ease of TDR (n=16) and not feeling hungry (n=7). Two hundred and fifty two participants indicated they felt positive (e.g. “very pleased”, “really happy”, “over the moon”, “great”, “excellent”) about their weight change during this phase.

Perceived negatives of the TDR phase were provided by 43 participants and included: inhibiting going out socially (n=23), missing eating real food (n=9), hunger (n=10), the level of determination required to stick to the TDR products alone (n=6) and negative side effects (n=15). One hundred and thirteen participants provided additional detail about possible improvements, which included addressing the TDR product issues described above, with 59 participants focusing their responses on variety, supply, quality and delivery of TDR products. This theme was consistent across providers, with the exception of comments in relation to stock issues being predominantly related to one provider. Increased support was also highlighted as a need by 24 participants (from across a variety of socio-demographics, delivery models and providers), who wanted more support from their coach, and opportunities for peer support (see table 2 in supplementary file 2 – online at www.bjd-abcd.com – for example free text quotes).

Food reintroduction phase

One hundred and fifty five participants answered Likert scale response questions related to the food reintroduction phase (Figure 3). The majority of participants (84% to 89%) indicated that the information provided by the programme was clear, the programme was easy to incorporate into their lives and that it helped them achieve their goals. Furthermore, they felt supported in the programme and had a good relationship with their coach. While there were generally consistently positive responses across providers and delivery models, there were two areas of difference: participants’ perceptions of the clarity of information from one provider, which only obtained 66% positive feedback, and the participant–coach relationship for the digital delivery model, which only obtained 67% positive feedback in comparison to 90% and 87% positive feedback for the 1-2-1 and group delivery models, respectively.

Of the 165 participants, 125 provided information on positive aspects of food reintroduction (see table 3 in supplementary file 2 – online at www.bjd-abcd.com – for example free text quotes). Being able to eat ‘real’ food was most frequently noted (n=39), followed by consumption of / appreciation for healthy food (n=35) and feeling more in control / being more mindful of the food being consumed (n=34). Social eating (n=19), changes in weight (n=12) and the reduction in negative side effects (n=5) were also highlighted. There were no noticeable differences in participants’ positive experiences by sociodemographics, delivery model or provider.

Perceived negatives of this phase were provided by 60 participants and included: a need to plan, purchase and prepare food (n=23); increases in weight / anxiety about weight regain (n=19); concern about the level of motivation required to stick to the programme (n=9); anxiety over what food to eat (n=7); and the amount of support / guidance provided (n=6). When asked if they were confident about the types of food to

Figure 3. Participant experience of the food reintroduction phase

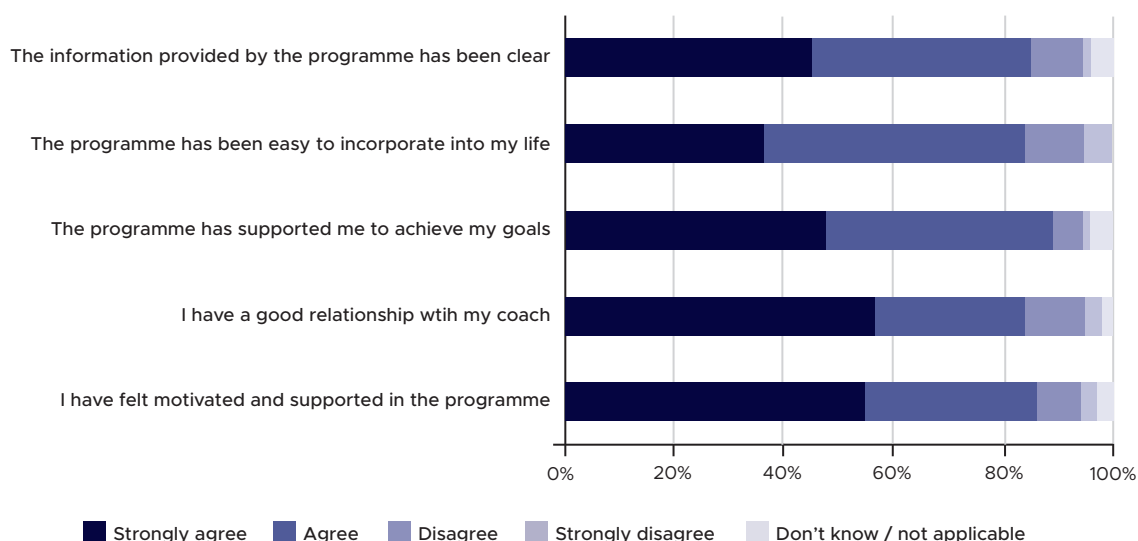
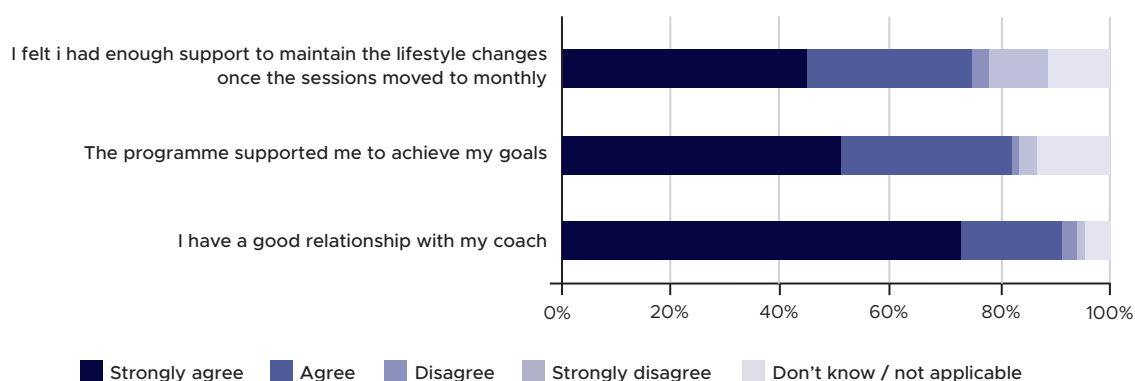


Figure 4. Participant experience of the weight maintenance phase

reintroduce into their diet, 63 participants (43% of respondents) indicated 'to some extent' and eight participants (5% of respondents) indicated 'no'. This varied by delivery model, with 'to some extent' being chosen by 60% of participants on the digital model, compared to 36% and 45% for those on the 1-2-1 and group models, respectively.

Participants were also asked how they felt about any weight change during the food reintroduction phase. In general, participants who continued to lose weight expressed positive emotions while those not doing so described mixed feelings.

Thirty nine participants provided additional detail on how they felt the food reintroduction phase could be improved. Fifteen would have liked additional meal planning resources, 13 needed more support from the service provider, and 13 suggested a slower transition from TDR products. When asked about the pace of food reintroduction, 29 (19% of respondents) indicated they felt it was 'too fast', 120 (76% of respondents) felt it was 'about right', and eight (5% of respondents) felt it was 'too slow'; this finding was consistent across providers and by participant sociodemographics.

Weight maintenance phase

Seventy three participants answered Likert scale response questions related to the weight maintenance phase (Figure 4). The majority of participants (75% to 90%) felt that they had enough support to maintain lifestyle changes, the programme supported them to achieve their goals, and that they had a good relationship with their coach. There was variability by provider (there were sufficient responders for four providers) and delivery model in participants' perception of the adequacy of support, with positive feedback from 60%, 63%, 84% and 87% of responders from each provider, and positive feedback from 67%, 80% and 82% for the digital, 1-2-1 and group models, respectively.

Twenty participants provided additional detail on how the maintenance phase could be improved: 15 stated they would have liked additional support / contact with their service provider, three would have liked more resources to support meal preparation, and two noted the need for more education.

Fifty seven participants provided information on how they felt about any weight change during the weight maintenance phase (see table 4 in supplementary file 2 – online at www.bjd-abcd.com – for example free text quotes). Forty participants were happy with their weight change, 13 were disappointed and four indicated they were okay.

Seventy four participants answered the question about continued use of TDR products during the weight maintenance phase; of these, 23 (31%) indicated they had consumed further TDR products provided by their service provider (likely as part of a rescue package offered for weight regain), whilst 14 (19%) indicated they had purchased the products themselves.

Discussion

This is the first paper to explore the experiences of a large, diverse sample of service users participating in the NHS LCD pilot programme in England. The journey begins with a HCP referral, which was regarded positively in most cases. This finding is supported by other components of the wider programme evaluation,⁷ which found that most HCPs found the referral process to be easy and straightforward, though some considered themselves to have insufficient expertise and knowledge.⁸⁻¹⁰ This variation may be explained by the different approaches taken in each area to mobilising the programme, including training, incentivisation and the management of referrals.¹¹ Around 1 in 10 participants did not feel that the referring HCP had listened to their needs or treated them with respect. The detailed reasons for this are unclear and would benefit from further research: it is possible that, in some cases, this could relate to the expression of weight bias, which has been shown in previous studies and carries a risk of healthcare avoidance.¹²⁻¹⁵

The majority of participants felt supported on the programme, though a small proportion reported needing additional support from their coaches across its duration. Interviews with participants have previously highlighted a need among some for strengthened support outside the sessions and increased support frequency.^{16,17} Survey responses showed differences by delivery model, with participants on the digital

model highlighting a desire to receive phone calls rather than in-App messages, and digital service providers receiving less favourable responses to questions about the adequacy of support provided and the participant coach relationship. This is important given the growth in digital weight management services.¹⁸

A desire for peer support was also reported by some participants, which aligned with findings from participant interviews at 12 weeks (end of the TDR phase).¹⁹ The importance of peer support was highlighted in a recent meta-analysis which demonstrated greater post-intervention weight loss and lower BMI in individuals who received peer support compared to usual care.²⁰ Ufholz also demonstrated the positive participant perception of peer support, which may be particularly effective in supporting vulnerable at-risk populations and may improve long-term adherence.²¹

The food reintroduction phase of the programme was accompanied by several positive experiences related to returning to 'normal' eating patterns, including being able to eat 'real' food and eat socially again. Participant interviews also reported the enjoyment of eating out socially again, but highlighted potential challenges in finding healthy options in restaurants.¹⁶ However, some participants also reported feeling more equipped to follow a healthy diet, with an increased appreciation of healthy food, and feeling more in control of their consumption. Similarly, interview participants also spoke about a heightened appreciation of taste, although the feeling of control was not consistent, with some interview participants reporting anxiety about returning to unhealthy eating habits.¹⁶ This was evidenced by a notable proportion of survey participants who were not completely confident in the types of food they should be reintroducing, with the least confidence observed in participants taking part in the digital delivery model.

Responses to the 52-week survey were smaller in number but do offer important insights into the continued use of TDR products. As part of the service specification, providers offer a 'rescue' package, permitted once during the weight maintenance phase, to provide participants with four additional weeks of TDR products, if they have gained more than 2kg. Findings from the survey indicated that 31% of participants took this rescue package, with an additional 19% consuming further TDR products not provided by their service provider. These findings are consistent with those from participants interviewed at the end of the food reintroduction and weight maintenance phase, when approximately one in three were either actively using TDR products or expressed an intention to continue doing so in order to manage their weight and offset unhealthy dietary choices.^{16,17}

Strengths and limitations

This study is the first to examine the experiences of a significant number of service users who participated in the NHS LCD programme. The study's strengths include its representativeness of the delivery models and socio-demographics of the main programme, as well as the large number of participants at baseline. The study encountered several limitations that need to be acknowledged. First, there was a poor longitudinal update. Additionally, the lack of information



Key messages

- ▲ The majority of participants indicated that the information provided by the programme was clear, the programme was easy to incorporate into their lives and that it helped them to achieve their goals.
- ▲ Findings highlighted the importance of the coach-participant relationship; with support provided by the digital delivery model perceived less favourable.
- ▲ Participants indicated a need to improve the variety, flavour/taste and texture of Total Diet Replacement products.
- ▲ During the maintenance phase, 19% of participants consumed Total Diet Replacement products not provided by their service provider.

on the proportion of programme participants invited to provide feedback meant it was not possible to calculate uptake rates for the surveys. Other limitations stemmed from the reliance on service providers to distribute the survey (although they had a contractual obligation to support the evaluation) and reliance on participants to report ID numbers accurately – hindering data linkage for participant socio-demographics. Further, the study may have been subject to selection bias, whereby those with negative views or those who had withdrawn from the programme were less likely to participate in the survey. Lastly, it should be recognised that participants may have found the surveys burdensome and repetitive, possibly contributing to the reduction in responses at each stage.

Recommendations for policy and practice

- Increase opportunities and identify the most suitable approaches for training that enable HCPs to obtain sufficient knowledge of the programme and referral process.
- Providers should offer and facilitate opportunities for peer support.
- Digital delivery models should offer phone calls in addition to App-based support.
- Providers should offer a variety of TDR products, both in terms of type and flavours.
- Commissioners and providers should consider increasing support with food reintroduction.

Recommendations for future research

- Assess the long-term experiences of the now nationally available NHS T2D Path to Remission Programme.
- Investigate completion incentivisation to address issues with survey uptake.
- Explore alternative methods for accessing participants in order to reduce reliance on commercial service providers as gatekeepers.
- Examine the impact of the programme adaptations outlined

above (e.g. offer and facilitate opportunities for peer support) on participants' experiences and outcomes.

Conclusion

This survey offers insights into the participant experience of the NHS LCD programme and gives recommendations for improvement to the service for commissioners, providers and referrers, many of which have already informed the development of the NHS programme.²²



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Supplementary file 1: Surveys

Contents

Survey 1 – Baseline2

Survey 2 – 12-week end of TDR21

Survey 3 – 18-week end of food re-introduction40

Survey 4 – 52-week end of weight maintenance60

Survey 1 – Baseline

ABOUT YOU

Have you started taking your total diet replacement products?

- ☐ No
- ☐ Yes

BEFORE starting the programme, who prepared most of your meals?

- ☐ Me
- ☐ My partner, spouse or family member
- ☐ Restaurant or catering service (e.g. canteen at work)
- ☐ Takeaways
- ☐ Other (please specify) _____

Currently, how motivated are you to manage your diabetes?

- ☐ Very motivated
- ☐ Motivated
- ☐ Neither motivated nor unmotivated
- ☐ Not very motivated
- ☐ Not at all motivated
-

Currently, how motivated are you to lose weight?

- ☐ Very motivated
 - ☐ Motivated
 - ☐ Neither motivated nor unmotivated
 - ☐ Not very motivated
 - ☐ Not at all motivated
-

Before starting the programme, how many times over your whole life have you lost more than 11 lbs (3/4 stone, 5 kg) by dieting?

- ☐ Never
 - ☐ 1–2 times
 - ☐ 3–5 times
 - ☐ over 5 times
-

How did you lose the weight? (tick all that apply)

- ☐ Low calorie diet
- ☐ Low fat diet
- ☐ Low carbohydrate diet
- ☐ Gastric bypass/band
- ☐ Total diet replacement
- ☐ Limiting portion size
- ☐ Increased exercise
- ☐ Crash dieting/fasting
- ☐ Not eating between meals
- ☐ Commercial programmes (e.g. Weight Watchers, Slimming World)
- ☐ Reduced alcohol
- ☐ Commercial diet products (e.g. SlimFast)
- ☐ Diet pills/medication
- ☐ Assessment with a dietitian
- ☐ Healthy eating
- ☐ Other, please describe: _____

Who provides your Low Calorie Diet programme?

☐ [Provider name responses removed]

☐ I'm not sure

Which area do you live in? [select only one]

☐ [Area name responses removed]

YOUR EXPERIENCE OF THE PROGRAMME

How did you find out about the programme? (tick all that apply)

☐ Health Care Practitioner (e.g. GP, practice/diabetic nurse)

☐ Pharmacist

☐ Other specialist care service

☐ National / local news

☐ Word of mouth

☐ Social media (e.g. Twitter, Facebook)

☐ Poster / flyer

☐ Other, please provide details

BEFORE speaking to your GP / Health Care Practitioner, how much did you know about the programme?

- ☐ I had heard of it and knew exactly what it involved
 - ☐ I had heard of it and knew roughly what it involved
 - ☐ I had heard of it but didn't know what it involved
 - ☐ I had never heard of it
-

AFTER speaking to your GP / Health Care Practitioner, how much did that conversation influence your decision to be referred onto the programme?

- ☐ Completely, I hadn't considered it until I spoke to them
 - ☐ Partially, I wasn't sure if the programme was for me until I spoke to them
 - ☐ Not at all, I knew I wanted to try the programme before I spoke to them
-

How did you receive details of changes to your medication?

- ☐ Letter
 - ☐ Text
 - ☐ Not applicable - no changes were made to my medication
 - ☐ Not applicable - I was not on any medication when I started the programme
 - ☐ I did not receive details of any changes in writing
-

When you were referred, did your GP / Health Care Practitioner explain being on the programme would mean replacing your meals with total diet replacement products (e.g. soups or shakes)?

- ☐ Yes
- ☐ No
- ☐ I can't remember

How much do you agree with the following statements?

The GP / Health Care Practitioner referring me...

	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't know / Not applicable
Explained the benefits of the programme for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Listened to my needs and treated me with respect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Was able to answer any questions I had	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Explained what would happen next in the referral process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you rate your referral experience with your GP / Health Care Practitioner on a scale of 1 to 5?

1 being terrible,
5 being
excellent



Thinking about your early contact with your service provider:

How much do you agree with the following statements?

	Strongly Disagree	Disagree	Agree	Strongly Agree	Don't know / Not applicable
It was straightforward to obtain my Total Diet Replacement products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There was a good range of Total Diet Replacement products to choose from	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had the information and support I needed to use the equipment I received (e.g. scales, blood pressure monitor, blood glucose monitor)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The person doing my initial assessment was helpful and supportive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The initial assessment gave me an understanding of what to expect on the programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How would you rate your first meeting (initial assessment) experience with your service provider on a scale of 1 to 5?

1 being terrible,
5 being
excellent



From referral up to today, is there anything that could have been done differently to improve your experience so far?

☐

No

☐

Yes (please describe what changes you would make)

Why did you decide to take part in the programme?

What would success on the programme look like for you?

Well done, you are halfway through the survey.

The questions that follow cover your lifestyle, physical health and wellbeing. These questions are an extremely important part of our evaluation to help us understand the impacts of the programme and why the programme works (or does not work) for different people.

YOUR WELLBEING

Please select the answer that best describes your wellbeing over the last 2 weeks.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been dealing with problems well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been thinking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling close to other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been able to make up my own mind about things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which of the following best describe your own health state today:

Mobility

- ☐ I have no problems in walking about
 - ☐ I have slight problems in walking about
 - ☐ I have moderate problems in walking about
 - ☐ I have severe problems in walking about
 - ☐ I am unable to walk about
-

Self-care

- ☐ I have no problems washing or dressing myself
 - ☐ I have slight problems washing or dressing myself
 - ☐ I have moderate problems washing or dressing myself
 - ☐ I have severe problems washing or dressing myself
 - ☐ I am unable to wash or dress myself
-

Usual activity (e.g. work, study, housework, family or leisure activities)

- ☐ I have no problems doing my usual activities
 - ☐ I have slight problems doing my usual activities
 - ☐ I have moderate problems doing my usual activities
 - ☐ I have severe problems doing my usual activities
 - ☐ I am unable to do my usual activities
-

Pain / Discomfort

- ☐ I have no pain or discomfort
 - ☐ I have slight pain or discomfort
 - ☐ I have moderate pain or discomfort
 - ☐ I have severe pain or discomfort
 - ☐ I have extreme pain or discomfort
-

Anxiety or Depression

- ☐ I am not anxious or depressed
- ☐ I am slightly anxious or depressed
- ☐ I am moderately anxious or depressed
- ☐ I am severely anxious or depressed
- ☐ I am extremely anxious or depressed
-

Taking into account all of the joints in your body, how would you rate your average pain over the last 7 days on a 0-10 scale, with 0 being 'no pain' and 10 being 'pain as bad as it could be'

	0	1	2	3	4	5	6	7	8	9	10	
	1	2	3	4	5	6	7	8	9	10	11	
No pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pain as bad as it could be

YOUR FOOD AND DRINK

BEFORE starting the programme did you drink alcohol?

- ☐ No
- ☐ Yes
-

Please state how many units of alcohol you normally drank in a week (1 unit = single shot of spirit, 2 units = a small glass of wine (175ml) or a pint of lager). Leave blank if you don't know.

BEFORE starting your total diet replacement products, how many portions of FRUIT did you normally eat each day?

Please include fresh, frozen, dried or tinned fruit, stewed fruit or fruit juices and smoothies.

What do we mean by a portion of fruit?

Fruit juice and smoothies only counts as one portion no matter how much you drink. A portion is half a large fruit such as a grapefruit or avocado, one medium sized fruit such as an apple, orange or pear, 2 small fruits such as plums or satsumas or a handful of grapes or berries.

BEFORE starting your total diet replacement products, how many portions of VEGETABLES did you normally eat each day?

Please include fresh, frozen, raw, stewed or tinned vegetables, but do not include potatoes.

What do we mean by a portion of vegetables?

A portion is one handful of vegetables, or two handfuls of leafy greens/salads. Beans and pulses (such as baked beans, kidney beans or lentils) only count as one portion no matter how much of them you eat.

On average, how much (£) was your weekly food bill (for your whole household), BEFORE you started the programme? Please only include food eaten at home and do not include alcohol.

☐

☐

I'm not sure

On average, how much (£) did you personally spend each week on meals or snacks purchased outside the home, BEFORE starting the programme? Please include food bought from takeaways, restaurants, sandwich shops and work canteens.

On average, how much (£) did you personally spend each week on alcohol, BEFORE starting the programme? Please include alcohol consumed at home (e.g. from supermarkets) and outside the home (e.g. from bars/pubs).

Please select the answer that indicates the extent with which you find yourself feeling or experiencing what is being described in the statements below.

	Definitely true	Mostly true	Mostly false	Definitely false
I start to eat when I feel anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel sad, I often eat too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel tense or “wound up”, I often feel I need to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel lonely, I console myself by eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I feel nervous, I try to calm down by eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel depressed, I want to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

During the last 3 months, did you have any episodes of excessive overeating (i.e. eating significantly more than what most people would eat in a similar period of time)?

☐ Yes

☐ No

Do you feel distressed about your episodes of excessive overeating?

☐ Yes

☐ No

Within the past 3 months....	Never or rarely	Sometimes	Often	Always
<p>During your episodes of excessive overeating, how often did you feel like you had no control over your eating (e.g., not being able to stop eating, feel compelled to eat, or going back and forth for more food)?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>During your episodes of excessive overeating, how often did you continue eating even though you were not hungry?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>During your episodes of excessive overeating, how often were you embarrassed by how much you ate?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>During your episodes of excessive overeating, how often did you feel disgusted with yourself or guilty afterward?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

During the last 3 months, how often did you make yourself vomit as a means to control your weight or shape?

☐☐☐☐

YOUR ACTIVITY

(please note: additional/new exercise routines are not recommended during the TDR phase)

In the past week, on how many days have you done a total of 30 minutes or more of physical activity which was enough to raise your breathing rate? This may include sport, exercise, and brisk walking or cycling for recreation or to get to and from places, but should not include housework or physical activity that may be part of your job.

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

TWO FINAL QUESTIONS

Is there anything else you would like to tell us about (e.g. significant life events, religious or cultural circumstances) that have affected your experience on the programme so far?

Do you have any suggestions on how to improve this survey?

THANK-YOU FOR COMPLETING THE SURVEY, YOUR RESPONSES HAVE BEEN SAVED.

Survey 2 – 12-week end of TDR

ABOUT YOU

During the total diet replacement phase did you prepare meals for other family members/friends?

- ☐ No
 - ☐ Yes, most days
 - ☐ Yes, occasionally
-

If you normally share meal times with others, what has been the impact of being in the total diet replacement phase?

Currently, how motivated are you to manage your diabetes?

- ☐ Very motivated
 - ☐ Motivated
 - ☐ Neither motivated nor unmotivated
 - ☐ Not very motivated
 - ☐ Not at all motivated
-

Currently, how motivated are you to lose weight / maintain your weight loss?

- ☐ Very motivated
 - ☐ Motivated
 - ☐ Neither motivated nor unmotivated
 - ☐ Not very motivated
 - ☐ Not at all motivated
-

Who provides your Low Calorie Diet programme?

- ☐ *[Provider name responses removed]*
-

In which of these areas do you live? [select only one]

- ☐ *[Area name responses removed]*
-

YOUR EXPERIENCE OF THE TOTAL DIET REPLACEMENT PHASE (first 12 weeks)

How much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
The information provided by the programme has been clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The programme has been easy to incorporate into my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The programme has supported me to achieve my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a good relationship with my coach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have felt motivated and supported in the programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have had the support of friends/family during the programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Was it clear what food/drink you could have during the total diet replacement phase?

- ☐ No
- ☐ Yes, to some extent
- ☐ Yes definitely
-

Did you experience any negative effects of the programme (e.g. constipation, diarrhoea, headaches, feelings of hunger)?

- ☐ No
- ☐ Yes, please describe these negative effects and how long they lasted
-

Did you tell your service provider about these effects?

- ☐ No
- ☐ Yes
-

Did you feel supported by your service provider in managing the negative effects?

- ☐ No
- ☐ Yes
-

Thinking about the support you have received from your service provider, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree	not applicable
I felt comfortable in the group	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The size of the group is acceptable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am finding the online platform (e.g. Zoom) used for the group sessions easy to access and use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The times of the sessions are convenient for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thinking about the support you have received from your service provider, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree	not applicable
I am finding the online platform (e.g. Zoom) used for the sessions easy to access and use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The times of the sessions are convenient for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thinking about the support you have received from your service provider, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
It is clear what I need to do to progress through the programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been able to access support if I've had questions or concerns	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The technology has always worked	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The technology is easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thinking about the resources you were given during the total diet replacement phase, did you find them helpful?

- ☐ No, please explain _____
- ☐ Yes, please explain _____

Did you buy any additional resources to support you during the total diet replacement phase (e.g. support books, extra glucose monitoring strips)?

☐ No

☐ Yes, please provide details of what you bought and how much they cost

Thinking about the total diet replacement phase, how would you rate your experience of the programme on a scale of 1 to 5?

1 being terrible,
5 being
excellent



Is there anything you would change about the programme that would have improved your experience so far?

☐ No

☐ Yes (please describe what changes you would make)

What total diet replacement products did you use / are you using? (tick all that apply)

☐

Shakes

☐

Soups

☐

Bars

☐

Ready meals

☐

Other (please describe) _____

On average, how would you rate the total diet replacement products you used?

☐

Very nice

☐

Nice

☐

Ok

☐

Not very nice

☐

Horrible

Which total diet replacement products did you like the most? Please explain why.

Which total diet replacement products did you like the least? Please explain why.

How do you think the total diet replacement products could be improved?

On average, how often did you use the fibre supplements provided during the TDR phase?

- ☐ Twice a day every day
 - ☐ Once a day every day
 - ☐ A few times a week
 - ☐ A few times a month
 - ☐ Never or very rarely
-

What have been the positives about the total diet replacement phase for you?

What have been the negatives about the total diet replacement phase for you?

How do you feel about your weight change during the total diet replacement phase?

Would you recommend the programme to a friend or family member?

- ☐ No
- ☐ Yes

Has COVID-19 and any associated restrictions impacted (positively or negatively) on your ability to follow the total diet replacement phase of the programme?

- ☐ No
- ☐ Yes (please provide details) _____

The NHS are trying different ways of delivering support for the Low Calorie Diet programme, if available would you have preferred a different method of support?

- ☐ No
- ☐ Yes, I would have preferred 1-2-1 support delivered remotely over the phone or internet
- ☐ Yes, I would have preferred 1-2-1 support delivered face to face
- ☐ Yes, I would have preferred group support delivered remotely over the internet
- ☐ Yes, I would have preferred group support delivered face to face
- ☐ Yes, I would have preferred support provided through a self-directed digital programme

Well done, you are halfway through the survey.

The questions that follow cover your lifestyle, physical health and wellbeing. These questions are an extremely important part of our evaluation to help us understand the impacts of the programme and why the programme works (or does not work) for different people.

YOUR WELLBEING

Please select the answer that best describes your wellbeing over the last 2 weeks.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been dealing with problems well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been thinking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling close to other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been able to make up my own mind about things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which of the following best describe your own health state today:

Mobility

- ☐ I have no problems in walking about
 - ☐ I have slight problems in walking about
 - ☐ I have moderate problems in walking about
 - ☐ I have severe problems in walking about
 - ☐ I am unable to walk about
-

Self-care

- ☐ I have no problems washing or dressing myself
 - ☐ I have slight problems washing or dressing myself
 - ☐ I have moderate problems washing or dressing myself
 - ☐ I have severe problems washing or dressing myself
 - ☐ I am unable to wash or dress myself
-

Usual activity (e.g. work, study, housework, family or leisure activities)

- ☐ I have no problems doing my usual activities
 - ☐ I have slight problems doing my usual activities
 - ☐ I have moderate problems doing my usual activities
 - ☐ I have severe problems doing my usual activities
 - ☐ I am unable to do my usual activities
-

Pain / Discomfort

- ☐ I have no pain or discomfort
 - ☐ I have slight pain or discomfort
 - ☐ I have moderate pain or discomfort
 - ☐ I have severe pain or discomfort
 - ☐ I have extreme pain or discomfort
-

Anxiety or Depression

- ☐ I am not anxious or depressed
 - ☐ I am slightly anxious or depressed
 - ☐ I am moderately anxious or depressed
 - ☐ I am severely anxious or depressed
 - ☐ I am extremely anxious or depressed
-

Taking into account all the joints in your body, how would you rate your average pain over the last 7 days on a 0-10 scale, with 0 being 'no pain' and 10 being 'pain as bad as it could be'.

	0	1	2	3	4	5	6	7	8	9	10	
	1	2	3	4	5	6	7	8	9	10	11	
No pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pain as bad as it could be

YOUR FOOD

Did you supplement your total diet replacement products with any other food?

- ☐ No
- ☐ Yes, this was agreed / discussed with my service provider, please provide further details on the type and frequency of food introduced
- ☐ Yes, this was not agreed / discussed with my service provider, please provide further details on the type and frequency of food introduced

On average, how much (£) was your weekly food bill (for your whole household), during the total diet replacement phase? Please only include food eaten at home and do not include alcohol.

- ☐ _____
- ☐ I'm not sure

On average, how much (£) did you personally spend each week on meals or snacks purchased outside the home, during the total diet replacement phase? Please include food bought from takeaways, restaurants, sandwich shops and work canteens.

Please select the answer that indicates the extent with which you find yourself feeling or experiencing what is being described in the statements below.

	Definitely true	Mostly true	Mostly false	Definitely false
I start to eat when I feel anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel sad, I often eat too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel tense or “wound up”, I often feel I need to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel lonely, I console myself by eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I feel nervous, I try to calm down by eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel depressed, I want to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

YOUR ACTIVITY

(please note: additional/new exercise routines are not recommended during the TDR phase)

In the past week, on how many days have you done a total of 30 minutes or more of physical activity which was enough to raise your breathing rate. This may include sport, exercise, and brisk walking or cycling for recreation or to get to and from places but should not include housework or physical activity that may be part of your job.

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

Has your level of physical activity changed since starting the programme?

☐ No

☐ Yes, please describe how and why _____

TWO FINAL QUESTIONS

Is there anything else you would like to tell us about (e.g. significant life events, religious or cultural circumstances) that have affected your experience on the programme so far?

Do you have any suggestions on how to improve this survey?

THANK-YOU FOR COMPLETING THE SURVEY, YOUR RESPONSES HAVE BEEN SAVED.

Survey 3 – 18-week end of food re-introduction

ABOUT YOU

Who prepares most of your meals?

☐

Me

☐

My partner, spouse or family member

☐

Restaurant or catering service (e.g. canteen at work)

☐

Takeaways

☐

Other (please specify) _____

If you normally share meal times with others, what has been the impact of being in the food re-introduction phase?

Currently, how motivated are you to manage your diabetes?

Very motivated

Motivated

Neither motivated nor unmotivated

Not very motivated

Not at all motivated

Currently, how motivated are you to lose weight / maintain your weight loss?

Very motivated

Motivated

Neither motivated nor unmotivated

Not very motivated

Not at all motivated

Who provides your Low Calorie Diet programme?

[Provider name responses removed]

In which of these areas do you live? [select only one]

[Area name responses removed]

YOUR EXPERIENCE OF THE FOOD RE-INTRODUCTION PHASE

How many weeks did your food re-introduction phase last for?

How did you find the pace of the food re-introduction?

It was too slow

It was too fast

It was about right

Have you felt confident about what types of food you should re-introduce into your diet?

No

To some extent

Yes

How do you feel about any weight change during the food re-introduction phase?

Did your service provider inform you about possible weight gain during the food re-introduction phase?

No

Yes

Don't know / Not sure

Thinking about the food re-introduction phase, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
The information provided by the programme has been clear					
The programme has been easy to incorporate into my life					
The programme has supported me to achieve my goals					
I have a good relationship with my coach					
I have felt motivated and supported in the programme					
I have had the support of friends/family during the programme					

Thinking about the support you have received from your service provider during the food re-introduction phase, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree	not applicable
I felt comfortable in the group						
The size of the group is acceptable						
I am finding the online platform used for the group sessions easy to access and use						
The times of the sessions are convenient for me						

Thinking about the support you have received from your service provider during the food re-introduction phase, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree	not applicable
I am finding the online platform used for the sessions easy to access and use						
The times of the sessions are convenient for me						

Thinking about the support you have received from your service provider during the food re-introduction phase, how much do you agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
It is clear what I need to do to progress through the programme					
I have been able to access support if I've had questions or concerns					
The technology has always worked					
The technology is easy to use					

Thinking about the resources you were given during the food re-introduction phase, did you find them helpful?

No, please explain _____

Yes, please explain _____

Did you buy any additional resources to support you during the food re-introduction phase (e.g. support books, recipe books, extra glucose monitoring strips)?

No

Yes, please provide details of what you bought and how much they cost

Thinking about the food re-introduction phase of the programme, how would you rate your experience of re-introducing food on a scale of 1 to 5?

1 being terrible,
5 being
excellent



Thinking about the food re-introduction phase, is there anything you would change to improve your experience?

No

Yes (please describe what changes you would make)

What meal replacement products did you use whilst reintroducing food? (tick all that apply)

☐

Shakes

☐

Soups

☐

Bars

☐

Ready meals

☐

Other (please describe) _____

Has taking part in the programme impacted upon your household?

No

Yes (please provide a short description of how)

How did you find introducing food back into your diet during the food re-introduction phase?

Very difficult

Difficult

Neither difficult nor easy

Easy

Very easy

What have been the positives about the food re-introduction phase for you?

What have been the negatives about the food re-introduction phase for you?

Would you recommend the programme to a friend or family member?

No (please provide details why) _____

Yes

Has COVID-19 and any associated restrictions impacted (positively or negatively) on your ability to follow the food re-introduction phase of the programme?

No

Yes (please provide details) _____

The NHS are trying different ways of delivering support for the Low Calorie Diet programme, if available would you have preferred a different method of support?

No

Yes, I would have preferred 1-2-1 support delivered remotely over the phone or internet

Yes, I would have preferred 1-2-1 support delivered face to face

Yes, I would have preferred group support delivered remotely over the internet

Yes, I would have preferred group support delivered face to face

Yes, I would have preferred support provided through a self-directed digital programme

Well done, you are halfway through the survey.

The questions that follow cover your lifestyle, physical health and wellbeing. These questions are an extremely important part of our evaluation to help us understand the impacts of the programme and why the programme works (or does not work) for different people.

YOUR WELLBEING

Please select the answer that best describes your wellbeing over the last 2 weeks

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future					
I've been feeling useful					
I've been feeling relaxed					
I've been dealing with problems well					
I've been thinking clearly					
I've been feeling close to other people					
I've been able to make up my own mind about things					

Please indicate which of the following best describe your own health state today:

Mobility

- I have no problems in walking about
 - I have slight problems in walking about
 - I have moderate problems in walking about
 - I have severe problems in walking about
 - I am unable to walk about
-

Self-care

- I have no problems washing or dressing myself
 - I have slight problems washing or dressing myself
 - I have moderate problems washing or dressing myself
 - I have severe problems washing or dressing myself
 - I am unable to wash or dress myself
-

Usual activity (e.g. work, study, housework, family or leisure activities)

- I have no problems doing my usual activities
 - I have slight problems doing my usual activities
 - I have moderate problems doing my usual activities
 - I have severe problems doing my usual activities
 - I am unable to do my usual activities
-

Pain / Discomfort

- I have no pain or discomfort
 - I have slight pain or discomfort
 - I have moderate pain or discomfort
 - I have severe pain or discomfort
 - I have extreme pain or discomfort
-

Anxiety or Depression

I am not anxious or depressed

I am slightly anxious or depressed

I am moderately anxious or depressed

I am severely anxious or depressed

I am extremely anxious or depressed

Taking into account all the joints in your body, how would you rate your average pain over the last 7 days on a 0-10 scale, with 0 being 'no pain' and 10 being 'pain as bad as it could be'

	0	1	2	3	4	5	6	7	8	9	10	
	1	2	3	4	5	6	7	8	9	10	11	
No pain												Pain as bad as it could be

YOUR FOOD AND DRINK

Do you currently drink alcohol?

No

Yes

Please state how many units of alcohol you normally drink in a week (1 unit = single shot of spirit, 2 units = a small glass of wine (175ml) or a pint of lager. Leave blank if you don't know.

During the food re-introduction phase, how many portions of FRUIT did you normally eat each day?
Please include fresh, frozen, dried or tinned fruit, stewed fruit or fruit juices and smoothies.

What do we mean by a portion of fruit?

Fruit juice and smoothies only counts as one portion no matter how much you drink. A portion is half a large fruit such as a grapefruit or avocado, one medium sized fruit such as an apple, orange or pear, 2 small fruits such as plums or satsumas or a handful of grapes or berries.

During the food reintroduction phase, how many portions of VEGETABLES did you normally eat each day? Please include fresh, frozen, raw, stewed or tinned vegetables, but do not include potatoes.

What do we mean by a portion of vegetables?

A portion is one handful of vegetables, or two handfuls of leafy greens/salads. Beans and pulses (such as baked beans, kidney beans or lentils) only count as one portion no matter how much of them you eat.

On average, how much (£) was your weekly food bill (for your whole household), during the food re-introduction phase? Please only include food eaten at home and do not include alcohol.

☐

☐

I'm not sure

How has the content of your shopping changed compared to before you started the programme?
(please describe how)

On average, how much (£) did you personally spend each week on meals or snacks purchased outside the home, during the food reintroduction phase? Please include food bought from takeaways, restaurants, sandwich shops and work canteens.

On average, how much (£) did you personally spend each week on alcohol, during the food reintroduction phase? Please include alcohol consumed at home (e.g. from supermarkets) and outside the home (e.g. from bars/pubs).

Please select the answer that indicates the extent with which you find yourself feeling or experiencing what is being described in the statements below.

	Definitely true	Mostly true	Mostly false	Definitely false
I start to eat when I feel anxious				
When I feel sad, I often eat too much				
When I feel tense or “wound up”, I often feel I need to eat				
When I feel lonely, I console myself by eating				
If I feel nervous, I try to calm down by eating				
When I feel depressed, I want to eat				

During the last 3 months, did you have any episodes of excessive overeating (i.e. eating significantly more than what most people would eat in a similar period of time)?

Yes

No

Do you feel distressed about your episodes of excessive overeating?

Yes

No

Within the past 3 months....	Never or rarely	Sometimes	Often	Always
<p>During your episodes of excessive overeating, how often did you feel like you had no control over your eating (e.g., not being able to stop eating, feel compelled to eat, or going back and forth for more food)?</p> <p>During your episodes of excessive overeating, how often did you continue eating even though you were not hungry?</p> <p>During your episodes of excessive overeating, how often were you embarrassed by how much you ate?</p> <p>During your episodes of excessive overeating, how often did you feel disgusted with yourself or guilty afterward?</p>				

During the last 3 months, how often did you make yourself vomit as a means to control your weight or shape?

YOUR ACTIVITY

In the past week, on how many days have you done a total of 30 minutes or more of physical activity which was enough to raise your breathing rate. This may include sport, exercise, and brisk walking or cycling for recreation or to get to and from places but should not include housework or physical activity that may be part of your job.

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Has your level of physical activity changed since the total diet replacement phase?

No

Yes, please describe how _____

TWO FINAL QUESTIONS

Is there anything else you would like to tell us about (e.g. significant life events, religious or cultural circumstances) that have affected your experience on the programme so far?

Do you have any suggestions on how to improve this survey?

THANK-YOU FOR COMPLETING THE SURVEY, YOUR RESPONSES HAVE BEEN SAVED.

Survey 4 – 52-week end of weight maintenance

ABOUT YOU

Who prepares most of your meals?

☐

Me

☐

My partner, spouse or family member

☐

Restaurant or catering service (e.g. canteen at work)

☐

Takeaways

☐

Other (please specify) _____

If you normally share meal times with others, what has been the impact of being in the weight maintenance phase?

How motivated are you to continue to manage your diabetes?

- ☐ Very motivated
 - ☐ Motivated
 - ☐ Neither motivated nor unmotivated
 - ☐ Not very motivated
 - ☐ Not at all motivated
-

How motivated are you to continue to lose weight / maintain your weight loss?

- ☐ Very motivated
 - ☐ Motivated
 - ☐ Neither motivated nor unmotivated
 - ☐ Not very motivated
 - ☐ Not at all motivated
-

Who provides your Low Calorie Diet programme?

- ☐ [Provider name responses removed]
 - ☐ I'm not sure
-

In which area do you live? [select only one]

- ☐ [Area name responses removed]
-

YOUR EXPERIENCE OF THE WEIGHT MAINTENANCE PHASE

How do you feel about your weight change during the weight maintenance phase?

Thinking about the resources you were given during the weight maintenance phase, did you find them helpful?

☐ No, please explain _____

☐ Yes, please explain _____

Did you buy any additional resources to support you during the weight maintenance phase (e.g. support books, recipe books, extra glucose monitoring strips)?

☐ No

☐ Yes, please provide details of what you bought and how much they cost

Did you access any other programmes in addition to the NHS Low Calorie Diet programme to help manage your weight and/or diabetes during the weight maintenance phase (e.g. another weight management programme, exercise on referral, diabetes education programme)?

- ☐ No
- ☐ Don't know / Can't remember
- ☐ Yes (please provide details) _____
-

Did you restart use of total diet replacement products at any point since you fully re-introduced food?

- ☐ No
- ☐ Yes, they were provided by the service provider
- ☐ Yes, I purchased them myself - please provide details of which brand(s) you purchased and how often you used them _____
-

Thinking about the weight maintenance phase, how much do you agree with the following statements?

	Strongly disagree	Disagree	Agree	Strongly Agree	Don't know / not applicable
I felt I had enough support to maintain the lifestyle changes once the sessions moved to monthly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The programme supported me to achieve my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had a good relationship with my coach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have had the support of friends/family during the programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thinking about the weight maintenance phase of the programme, how would you rate your experience on a scale of 1 to 5?

1 being terrible, 5 being excellent

☐
☐
☐
☐
☐

Thinking about the weight maintenance phase, is there anything you would change to improve your experience?

- ☐ No
- ☐ Yes (please describe what changes you would make)
- _____

When answering the questions that come next, please think about your overall experience on the programme

Did you find the programme well-organised?

- ☐ No, please provide details _____
- ☐ Yes to some extent
- ☐ Yes definitely

Did you have a GP review at around halfway through the programme?

- ☐ Yes
- ☐ No
- ☐ Don't know / Can't remember

Have you had or have you arranged a GP review at the end of the programme?

- ☐ Yes
- ☐ No
- ☐ Don't know / Can't remember

Did you feel supported by your coach/coaches?

- ☐ No
- ☐ Yes most of the time
- ☐ Yes always
-

Did you have the same coach throughout the programme?

- ☐ No
- ☐ Yes most of the time
- ☐ Yes all of the time
- ☐ Don't know / Can't remember
-

Were you happy with how the programme was delivered?

- ☐ No
- ☐ Yes to some extent
- ☐ Yes definitely
-

What lifestyle changes have you made as a result of taking part in the programme?

How easy was it to maintain any lifestyle changes during the maintenance phase?

- ☐ Very difficult
 - ☐ Difficult
 - ☐ Neither difficult or easy
 - ☐ Easy
 - ☐ Very easy
-

How confident do you feel about maintaining these changes in the long term?

- ☐ Not at all confident
 - ☐ Not very confident
 - ☐ Quite confident
 - ☐ Very confident
-

Did you get support from other people in your group?

- ☐ No
 - ☐ Yes to some extent
 - ☐ Yes definitely
 - ☐ Don't know / Can't remember
-

Did you use any fitness tracking devices or health and fitness apps to help you during the maintenance phase?

☐ No

☐ Yes

Please provide details of the fitness tracking device(s) or health and fitness app(s) you used.

What advice would you give to a participant who is just starting out on the programme?

What do you think are the positives about taking part in the programme?

What do you think are the negatives about taking part in the programme?

How would you improve the programme for other participants like you? (Please provide a short description)

Has COVID-19 and any associated restrictions impacted (positively or negatively) on your ability to follow the programme?

- ☐ No
- ☐ Yes, please provide details _____
-

The NHS are trying different ways of delivering support for the Low Calorie Diet programme, if available would you have preferred a different method of support?

- ☐ No
- ☐ Yes, I would have preferred 1-2-1 support delivered remotely over the phone or internet
- ☐ Yes, I would have preferred 1-2-1 support delivered face to face
- ☐ Yes, I would have preferred group support delivered remotely over the internet
- ☐ Yes, I would have preferred group support delivered face to face
- ☐ Yes, I would have preferred support provided through a self-directed digital programme
-

Well done, you are halfway through the survey.

The questions that follow cover your lifestyle, physical health and wellbeing. These questions are an extremely important part of our evaluation to help us understand the impacts of the programme and why the programme works (or does not work) for different people.

YOUR WELLBEING

Please select the answer that best describes your wellbeing over the last 2 weeks

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling useful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been dealing with problems well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been thinking clearly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been feeling close to other people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been able to make up my own mind about things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please indicate which of the following best describe your own health state today:

Mobility

- ☐ I have no problems in walking about
 - ☐ I have slight problems in walking about
 - ☐ I have moderate problems in walking about
 - ☐ I have severe problems in walking about
 - ☐ I am unable to walk about
-

Self-care

- ☐ I have no problems washing or dressing myself
 - ☐ I have slight problems washing or dressing myself
 - ☐ I have moderate problems washing or dressing myself
 - ☐ I have severe problems washing or dressing myself
 - ☐ I am unable to wash or dress myself
-

Usual activity (e.g. work, study, housework, family or leisure activities)

- ☐ I have no problems doing my usual activities
 - ☐ I have slight problems doing my usual activities
 - ☐ I have moderate problems doing my usual activities
 - ☐ I have severe problems doing my usual activities
 - ☐ I am unable to do my usual activities
-

Pain / Discomfort

- ☐ I have no pain or discomfort
 - ☐ I have slight pain or discomfort
 - ☐ I have moderate pain or discomfort
 - ☐ I have severe pain or discomfort
 - ☐ I have extreme pain or discomfort
-

Anxiety or Depression

- ☐ I am not anxious or depressed
 - ☐ I am slightly anxious or depressed
 - ☐ I am moderately anxious or depressed
 - ☐ I am severely anxious or depressed
 - ☐ I am extremely anxious or depressed
-

Taking into account all the joints in your body, how would you rate your average pain over the last 7 days on a 0-10 scale, with 0 being 'no pain' and 10 being 'pain as bad as it could be'

	0	1	2	3	4	5	6	7	8	9	10	
	1	2	3	4	5	6	7	8	9	10	11	
No pain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pain as bad as it could be

YOUR FOOD AND DRINK

Do you currently drink alcohol?

☐ No

☐ Yes

Please state how many units of alcohol you normally drink in a week (1 unit = single shot of spirit, 2 units = a small glass of wine (175ml) or a pint of lager. Leave blank if you don't know.

During the maintenance phase, how many portions of FRUIT did you normally eat each day? Please include fresh, frozen, dried or tinned fruit, stewed fruit or fruit juices and smoothies.

What do we mean by a portion of fruit?

Fruit juice and smoothies only counts as one portion no matter how much you drink. A portion is half a large fruit such as a grapefruit or avocado, one medium sized fruit such as an apple, orange or pear, 2 small fruits such as plums or satsumas or a handful of grapes or berries.

During the maintenance phase, how many portions of VEGETABLES did you normally eat each day?
Please include fresh, frozen, raw, stewed or tinned vegetables, but do not include potatoes.

What do we mean by a portion of vegetables?

A portion is one handful of vegetables, or two handfuls of leafy greens/salads. Beans and pulses (such as baked beans, kidney beans or lentils) only count as one portion no matter how much of them you eat.

On average, how much (£) was your weekly food bill (for your whole household), during the maintenance phase? Please only include food eaten at home and do not include alcohol.

☐

☐

I'm not sure

How has the content of your shopping changed compared to before you started the programme?
(please describe how)

On average, how much (£) did you personally spend each week on meals or snacks purchased outside the home, during the maintenance phase? Please include food bought from takeaways, restaurants, sandwich shops and work canteens.

On average, how much (£) did you personally spend each week on alcohol, during the maintenance phase? Please include alcohol consumed at home (e.g. from supermarkets) and outside the home (e.g. from bars/pubs).

Please select the answer that indicates the extent with which you find yourself feeling or experiencing what is being described in the statements below.

	Definitely true	Mostly true	Mostly false	Definitely false
I start to eat when I feel anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel sad, I often eat too much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel tense or “wound up”, I often feel I need to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel lonely, I console myself by eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I feel nervous, I try to calm down by eating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I feel depressed, I want to eat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

During the last 3 months, did you have any episodes of excessive overeating (i.e. eating significantly more than what most people would eat in a similar period of time)?

☐ Yes

☐ No

Do you feel distressed about your episodes of excessive overeating?

☐ Yes

☐ No

Within the past 3 months....	Never or rarely	Sometimes	Often	Always
<p>During your episodes of excessive overeating, how often did you feel like you had no control over your eating (e.g., not being able to stop eating, feel compelled to eat, or going back and forth for more food)?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>During your episodes of excessive overeating, how often did you continue eating even though you were not hungry?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>During your episodes of excessive overeating, how often were you embarrassed by how much you ate?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p>During your episodes of excessive overeating, how often did you feel disgusted with yourself or guilty afterward?</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

During the last 3 months, how often did you make yourself vomit as a means to control your weight or shape?

☐☐☐☐

YOUR ACTIVITY

In the past week, on how many days have you done a total of 30 minutes or more of physical activity which was enough to raise your breathing rate. This may include sport, exercise, and brisk walking or cycling for recreation or to get to and from places but should not include housework or physical activity that may be part of your job.

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

Has your level of physical activity changed since the food re-introduction phase?

☐ No

☐ Yes, please describe how _____

TWO FINAL QUESTIONS

Is there anything else you would like to tell us about (e.g. significant life events, religious or cultural circumstances) that has affected your experience on the programme so far?

Do you have any suggestions on how to improve this survey?

THANK-YOU FOR COMPLETING THE SURVEY, YOUR RESPONSES HAVE BEEN SAVED.

Supplementary file 2: Example free text quotes

Table 1. Example quotes related to total diet replacement products

Theme	Example quotes
Improved taste, texture	<p><i>"Make the soups taste like soup and not gritty wallpaper paste."</i></p> <p><i>"They are generally very good if the flavour could be enhanced with the soups that would be good."</i></p> <p><i>"Make the texture of the shakes better."</i></p> <p><i>"The flavourings slightly more tasty for the shakes and much better flavourings for the soup."</i></p> <p><i>"The ready meals could be made to be less like baby food and soups need to be made to dissolve better."</i></p>
Less sweet, more savoury options	<p><i>"I feel some of the shakes (strawberry and coffee) were a bit on the sweet side."</i></p> <p><i>"Less artificial sweeteners, some of shakes were really sweet."</i></p> <p><i>"More savoury style food, I would have liked some savoury bars."</i></p>
More variety	<p><i>"[Supplier name] only has 2 options for a night teatime meal, bolognaise or Thai noodle. More variety would be appreciated."</i></p> <p><i>"To only be able to choose 4 different flavours over a 12 week period is very boring to say the least."</i></p> <p><i>"More varied milkshake flavours and also maybe different things like replacement bars as limited flavours made it boring when having 4 products a day."</i></p>
Real, solid food options	<p><i>"I would have liked something solid. I missed chewing."</i></p> <p><i>"Given the choice I would have liked access to bars/ ready meals for the feeling of satiety."</i></p> <p><i>"Would like me to have some solid food as well, maybe replace a shake with a protein bar or something?"</i></p>
Better availability, stock	<p><i>"Ensure that the meal provider doesn't always run out. [Supplier name] website would run out of things I enjoyed quite regularly."</i></p> <p><i>"At [supplier name], stock levels are sometimes alarmingly low, reducing choice and leading to many 'repeat meals' as the choices ran out."</i></p> <p><i>"Change the company [supplier name] as struggled with deliveries and lack of choice. I'm still waiting a month later for part of an order (not in stock)".</i></p>

Table 2. Example quotes for how participants felt the TDR phase could be improved.

Theme	Example quotes
Increased support	<p><i>"A what's app group so members could talk to each other away from the group to support each other."</i></p> <p><i>"The nutritionist sent standard text messages I think to everyone which made me feel not supported."</i></p> <p><i>"Better support from the coach. I put a message asking [name] help and support didn't hear anything for over a week."</i></p> <p><i>"The coaches weren't always there regularly as I needed as this is a very tough programme. I understand they must have a lot of clients. A support group with other members on the programme would be a good idea to ask questions and share experiences."</i></p> <p><i>"More support and easy access to someone to ask questions to."</i></p>

Table 3. Example quotes of the perceived positives of the food reintroduction phase

Theme	Example quotes
Being able to eat 'real' food	<p><i>"Enjoying real food again."</i></p> <p><i>"Eating actual meals again which are full of flavour."</i></p> <p><i>"Having the ability to eat proper food rather than drink it."</i></p>
Consumption of / appreciation for healthy food	<p><i>"Understanding of a balanced plate."</i></p> <p><i>"My food tastes amazing and I have been sticking to a low fat diet whilst enjoying foods"</i></p> <p><i>"The joy of preparing fresh and healthy meals."</i></p> <p><i>"The Taste and appreciation of food is better , especially things like vegetables which before I saw them as an 'add on' to meals."</i></p>
Feeling more in control / being more mindful of the food being consumed	<p><i>"Healthier choices by understanding what food groups and portions I need to maintain."</i></p> <p><i>"Being made to really think about what I'm eating."</i></p> <p><i>"Learned new things and to learn to be more organised."</i></p> <p><i>"Being mindful of food choices."</i></p>
Social eating	<p><i>"Being able to eat out with family and friends again."</i></p> <p><i>"Easier to socialise with friends and family."</i></p> <p><i>"Eating with my family."</i></p>
Changes in weight	<p><i>"Still maintaining my weight."</i></p> <p><i>"Losing weight."</i></p> <p><i>"The weight gain hasn't as drastic as I'd feared."</i></p>
Reduction if negative side effects	<p><i>"I'm not as fatigue by the end of my day."</i></p> <p><i>"The bathroom habits have eased."</i></p> <p><i>"Less flatulence and easier bowel movements."</i></p>

Table 4. Example quotes of the participants feelings on their weight change during the weight maintenance phase

Theme	Example quotes
Happy	<p><i>"Very happy with it. I have lost over 7 stone and I've started going to the gym."</i></p> <p><i>"I am pleased with the progress I have made."</i></p> <p><i>"I'm so proud of myself and I am committed to keeping my weight at a healthier level"</i></p>
Disappointed	<p><i>"I have actually gained weight steadily since completing the initial meal replacement stage which I am disappointed about."</i></p> <p><i>"I feel happy to have lost weight but disheartened that I have not been able to maintain all the weight loss."</i></p> <p><i>"Disappointed, after losing weight and being happy with being slimmer and healthier I am now slowly putting the weight back on."</i></p>
Okay	<p><i>"Couldn't have gone better but gained some weight back due to working patterns. Not disappointed but could do better."</i></p> <p><i>"Mixed feelings as weight goes up and down."</i></p>