THE LANCET

## Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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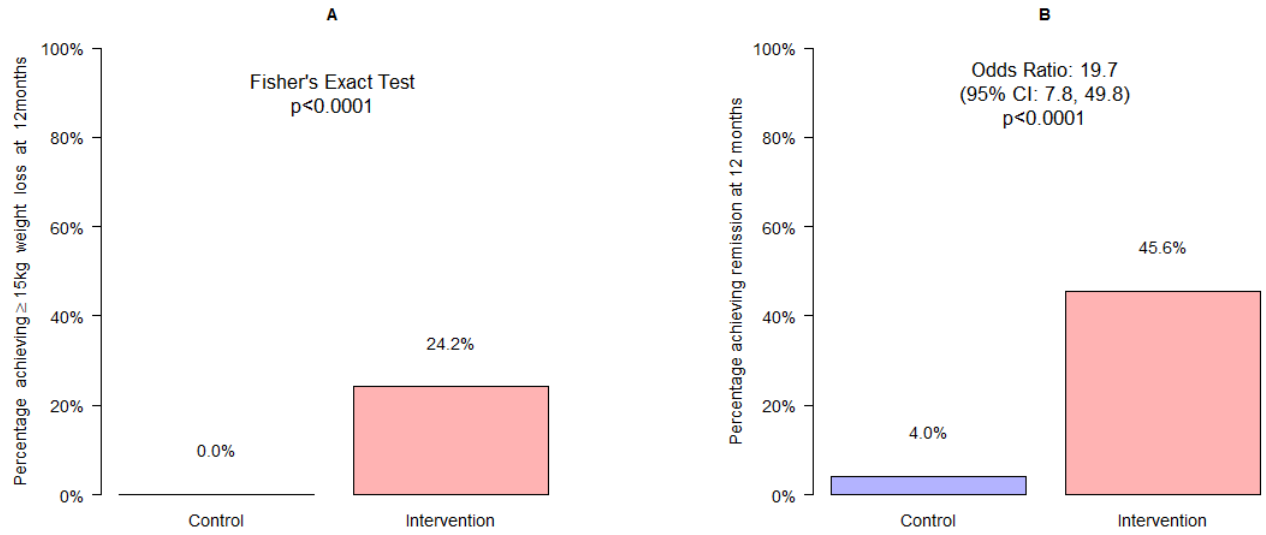
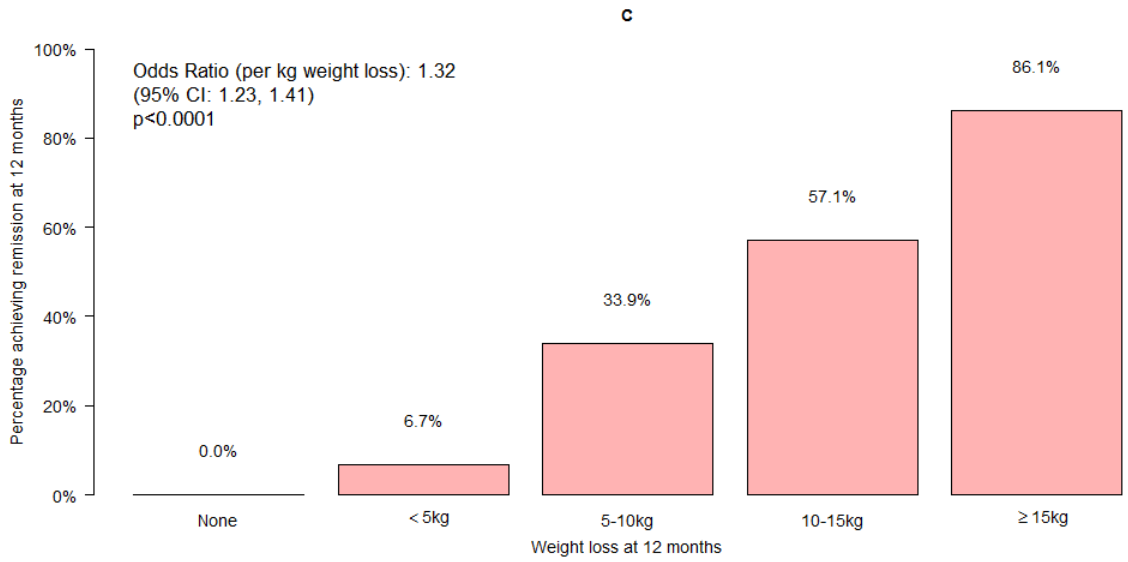
**Supplementary Figures**

**Figure S1:** Primary outcomes and remission of diabetes in relation to weight loss at 12 months.
**A:** First co-primary outcome, achievement of ≥15kg weight loss at 12 months, by randomised group. **B:** Second co-primary outcome, remission of diabetes ($HbA_{1c}$ <48mmol/mol, off anti-diabetic medication for 2 months), by randomised group.
**C:** Remission of diabetes, in relation to weight loss achieved at 12 months (both randomised groups combined).



**Supplementary Tables**

**Table S1:** Further analyses of secondary outcome measures and other outcomes in the intervention and control groups at baseline and 12 months

| | | N | Mean (SD) | | | Intervention Effect (Relative) | | | ICC |
|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline | 12months | Change | Estimate | 95% CI | p-value | |
| Percentage weight change from baseline[(a)] | Intervention | 137 | | -9·9 (7·6) | | -8·8 | (-10·2, -7·3) | p<0·0001 | 0·01 |
| | Control | 148 | | -1·1 (3·8) | | | | | |
| BMI (kg/m$^2$) | Intervention | 137 | 35·0 (4·5) | 31·5 (4.9) | -3·5 (2.8) | -3·0 | (-3·5, -2·5) | p<0·0001 | 0·01 |
| | Control | 148 | 34·2 (4·3) | 33·8 (4·5) | -0·4 (1.3) | | | | |
| Number of other prescribed medications (not oral antidiabetic or antihypertensive) | Intervention | 148 | 3·5 (3·0) | 4·0 (3·9) | 0·5 (2·0) | -0·08 | (-0·49, 0·33) | p=0·7036[(b)] | <0·01 |
| | Control | 148 | 3·6 (3·4) | 4·2 (3·7) | 0·6 (1·4) | | | | |
| Diastolic blood pressure (mmHg) | Intervention | 128 | 84·8 (10·2) | 83·5 (9·5) | -1·3 (10·3) | -0·4 | (-2·5, 1·6) | p=0·6863 | <0·01 |
| | Control | 147 | 85·5 (8·8) | 84·5 (8·9) | -1·1 (10·1) | | | | |
| Quality of Life EQ-5D health utility score | Intervention | 125 | 0·806 (0·279) | 0·793 (0·278) | -0·013 (0·211) | 0·025 | (-0·023, 0·073) | p=0·3146[(c)] | <0·01 |
| | Control | 147 | 0·799 (0·282) | 0·759 (0·302) | -0·040 (0·203) | | | | |

Intervention effects reported as estimated mean differences (Intervention-Control), based on mixed effects linear regression model, adjusted for randomised group, baseline value[(a)], study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.

N refers to number of participants with data available at baseline and 12 months for each outcome. ICC: Intraclass Correlation Coefficient.

(a): Effect estimate for percentage weight change includes adjustment for baseline weight

Some model residuals showed signs of non-Normal distribution:

(b): Results confirmed using non-parametric test of 12 month values (p=0.37) and change from baseline (p=0.053)

(c): Results confirmed using non-parametric test of 12 month values (p=0.33) and change from baseline (p=0.39)

**Table S2:** Weight at baseline and 12 months, under alternative assumptions regarding missing data

| | | N | Mean (SD) | | | Intervention Effect | | | ICC |
|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline | 12months | Change | Estimate | 95% CI | p-value | |
| Complete Data (as in Table 2) | Intervention | 137 | 100·4 (16·5) | 90·4 (16·4) | -10·0 (8·0) | -8·8 | (-10·3, -7·3) | p<0·0001 | <0·01 |
| | Control | 148 | 98·7 (16·1) | 97·7 (16·4) | -1·0 (3·7) | | | | |
| IMPUTATION OF MISSING WEIGHTS | | | | | | | | | |
| Conservative (Return to Baseline) | Intervention | 149 | 101·0 (16·7) | 91·8 (17·1) | -9·2 (8·1) | -8·0 | (-9·5, -6·5) | p<0·0001 | <0·01 |
| | Control | 149 | 98·8 (16·1) | 97·8 (16·4) | -1·0 (3·7) | | | | |
| Optimistic (Last Observation Carried Forward) | Intervention | 149 | 101·0 (16·7) | 91·3 (16·8) | -9.7 (8·0) | -8·4 | (-9·9, -6·9) | p<0·0001 | <0·01 |
| | Control | 149 | 98·8 (16.1) | 97.8 (16·4) | -1.0 (3·7) | | | | |
| Realistic (see below) | Intervention | 149 | 101·0 (16.7) | 91·6 (17·0) | -9·4 (8·0) | -8·2 | (-9·6, -6·7) | p<0·0001 | <0·01 |
| | Control | 149 | 98·8 (16.1) | 97·8 (16.4) | -1·0 (3·7) | | | | |

Intervention effects reported as estimated mean differences (Intervention-Control), based on mixed effects linear regression model, adjusted for randomised group, baseline value, study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.
N refers to number of participants with data available at baseline and 12 months for each outcome. ICC: Intraclass Correlation Coefficient.
Imputation options:

- Conservative (Return to Baseline): missing 12 month weights imputed as the baseline value
- Optimistic (LOCF): missing 12 month weights imputed as the last recorded weight. For intervention patients, this could be during a treatment visit; for control patients, this will be the baseline value
- Realistic: missing 12 month weights imputed as the mean value from other patients in the same randomised group who did not attend the 12 month visit, but for whom the weight was obtained from GP records

**Table S3:** Changes in weight during each treatment phase. Data during TDR phase reported for all participants who started TDR; data during FR phase reported for all participants who successfully completed TDR; data during WLM phase reported for all participants who successfully completed FR (plus one patient who progressed directly from TDR to WLM). ”End of TDR” and “End of FR” weights refer to the final weight recorded at a study treatment visit during each phase.

| | | Completed Phase | Not Completed Phase | Difference[(a)] (95% CI), p-value |
|---|---|---|---|---|
| Weight During TDR Phase (for those who started TDR phase) | | | | |
| | N | 128 | 15 | |
| Baseline | Mean (SD) | 100·9 (16·7) | 101·6 (18·4) | -0·7 (-9·7, 8·3), p=0·8797 |
| End of TDR | Mean (SD) | 86·4 (15·6) | 98·6 (17.9) | -12·1 (-20·6, -3·7), p=0·0050 |
| Change during TDR | Mean (SD)<br>[95% CI] | -14·5 (6·0)<br>[-15·5, -13·4] | -3·0 (3·6)<br>[-5·0, -1·0] | -11·5 (-14·5, -8·6), p<0·0001 |
| Weight During FR Phase (for those who progressed from TDR to FR) | | | | |
| | N | 107 | 20 | |
| End of TDR | Mean (SD) | 85·2 (15·0) | 92·0 (17·7) | -5.5 (-13·4, 2·5), p=0·1779 |
| End of FR | Mean (SD) | 86·2 (15·4) | 95·2 (17·1) | -8.1 (-16·2, 0·0), p=0·0488 |
| Change during FR | Mean (SD)<br>[95% CI] | 1·0 (3·2)<br>[0·3, 1·6] | 3·2 (2·3)<br>[2·1, 4·3] | -2·7 (-4·3, -1.1), p=0·0010 |
| Weight During WLM Phase (for those who progressed from TDR to FR to WLM, or directly from TDR to WLM) | | | | |
| | N | 78 | 30 | |
| End of FR | Mean (SD) | 85·1 (14·6) | 89·5 (17·0) | -4·4 (-10·8, 2·1), p=0·1851 |
| 12 Months | Mean (SD) | 87·0 (15·1) | 92·0 (17·2) | -5·0 (-11·6, 1·7), p=0·1424 |
| Change during WLM | Mean (SD)<br>[95% CI] | 1·9 (2·9)<br>[1·2, 2·5] | 2·4 (3·0)<br>[1·3, 3·5] | -0·6 (-1·8, 0·7), p=0·3809 |

(a): Difference (Completed – Not Completed) derived from two-sample t-test for differences at the start and end of each treatment phase. Differences in the change during each phase derived from a linear regression model of the change in weight, adjusted for weight at the start of the phase

**Table S4:** Secondary outcomes: binary outcomes in the intervention and control groups at baseline and 12 months

| | | N/Total (%) | Odds Ratio | | |
|---|---|---|---|---|---|
| | | | Estimate | 95% CI | p-value |
| Prescribed oral anti-diabetic medications | Intervention | 39/148 (26·4%) | 0·07 | (0·03, 0·14) | p<0·0001 |
| | Control | 121/148 (81·8%) | | | |
| All Patients | | | | | |
| $HbA_{1c}$ <48mmol/mol | Intervention | 71/138 (48·6%) | 7·02 | (3·66, 13·46) | p<0·0001 |
| | Control | 23/148 (15·5%) | | | |
| $HbA_{1c}$ <42mmol/mol | Intervention | 40/138 (29·0%) | 8·38 | (3·49, 20·14) | p<0·0001 |
| | Control | 7/148 (4·7%) | | | |
| For those patients prescribed oral anti-diabetic medication at 12 months | | | | | |
| $HbA_{1c}$ <48mmol/mol | Intervention | 3/35 (8.6%) | 0·55 | (0·14, 2·09) | p=0·3797 |
| | Control | 17/121 (14.0%) | | | |
| $HbA_{1c}$ <42mmol/mol | Intervention | 1/35 (2.9%) | 0·46 | (0·05, 4·28) | p=0·4941 |
| | Control | 6/121 (5.0%) | | | |
| For those patients NOT prescribed oral anti-diabetic medication at 12 months | | | | | |
| $HbA_{1c}$ <48mmol/mol | Intervention | 68/103 (66.0%) | 7·51 | (2·40, 23·48) | p=0·0005 |
| | Control | 6/27 (22.2%) | | | |
| $HbA_{1c}$ <42mmol/mol | Intervention | 39/103 (37·9%) | 15·40 | (1·98, 120·12) | p=0·0091 |
| | Control | 1/27 (3.7%) | | | |

Intervention effects reported as estimated odds ratios (Intervention:Control), based on mixed effects logistic regression model, adjusted for randomised group, study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.
Total N varies by outcome depending on data availability

**Table S5:** Secondary outcomes: physical activity, sleep duration and efficiency in intervention and control groups at baseline and 12 months

| | | N | Mean (SD) | | | Intervention Effect (Intervention:Control) | | | Intra-class coefficient |
|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline | 12months | Change | Estimate | 95% CI | p-value | |
| Sleep duration (minutes/day) | Intervention | 73 | 421·4 (77·1) | 423·1 (74·8) | 2 (86) | 8.2 | (-13·2, 29.5) | p=0.4522[(a)] | 0.02 |
| | Control | 74 | 441·7 (64.5) | 427·8 (61·8 | -14 (63) | | | | |
| Sleep efficiency (%) | Intervention | 73 | 72·7 (10.7) | 71·9 (11·9) | -0.8 (13.8) | -1.21 | (-4.76, 2.35 | p=0.5066[(b)] | 0.03 |
| | Control | 74 | 74·5 (9.0) | 74·1 (9.3) | -0.3 (10.4) | | | | |
| Sedentary time (minutes/day) | Intervention | 73 | 188·3 (63·2) | 180·6 (67·3) | -8 (71) | -5·9 | (-25·7, 13·9) | p=0·5587 | <0·01 |
| | Control | 77 | 177·5 (65·2) | 180·8 (69·9) | 3 (63) | | | | |
| Light activity (minutes/day) | Intervention | 73 | 117·5 (39·2) | 117·9 (42·9) | 0 (42) | 3·0 | (-8·8, 14·8) | p=0·6184 | <0·01 |
| | Control | 77 | 109·6 (46·6) | 110·8 (44·7) | 1 (37) | | | | |
| Moderate activity (minutes/day) | Intervention | 73 | 51·0 (21·3) | 51·2 (23·1) | 0·1 (22·3) | 0·81 | (-5·80, 7·42) | p=0·8110 | <0·01 |
| | Control | 77 | 48·1 (26·5) | 48·9 (26·5) | 0·7 (21·4) | | | | |
| Vigorous activity (minutes/day) | Intervention | 73 | 0·9 (0·7) | 0·8 (0·9 | -0·03 (0·91) | 0·03 | (-0·23, 0·28) | p=0·8402[(c)] | 0·05 |
| | Control | 77 | 0·7 (0·6) | 0·7 (0·7) | 0·01 (0·64) | | | | |

Intervention effects reported as estimated mean differences (Intervention-Control), based on mixed effects linear regression model, adjusted for randomised group, baseline value, study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.

N refers to number of participants with data available at baseline and 12 months for each outcome.

Some model residuals showed signs of non-Normal distribution:

(a): Results confirmed using non-parametric test of 12 month values (p=0.81) and change from baseline (p=0.23)

(b): Results confirmed using non-parametric test of 12 month values (p=0.47) and change from baseline (p=0.77)

(c): Results confirmed using non-parametric test of 12 month values (p=0.32) and change from baseline (p=0.55)

**Table S6**: Withdrawal from Treatment in Year 1 for those who commenced treatment (ITT population)

| | Control (n=115) | Intervention (143) |
|---|---|---|
| Reason for withdrawal | 0 | 26 (0) |
| No remission; patient decision | 0 | 1 (3.8%) |
| Medical reasons | 0 | 2 (7.7%) |
| Social reasons | 0 | 8 (30.8%) |
| Limited weight loss | 0 | 3 (11.5%) |
| Weight regain | 0 | 1 (3.8%) |
| Other | 0 | 6 (23.1%) |
| Not Known | 0 | 5 (19.2%) |

**Table S7:** Secondary outcomes: other binary outcomes in the intervention and control groups at 12 months

| | | N/Total (%) | Odds Ratio | | |
|---|---|---|---|---|---|
| | | | Estimate | 95% CI | p-value |
| | Control | 121/148 (81.8%) | | | |
| Prescribed antihypertensive medications | Intervention | 47/148 (31.8%) | 0.30 | (0.16, 0.54) | p=0.0001 |
| | Control | 91/148 (61.5%) | | | |
| Prescribed antidepressants | Intervention | 40/148 (27.0%) | 1.40 | (0.79, 2.49) | p=0.2506 |
| | Control | 31/148 (20.9%) | | | |
| SBP >130mmHg | Intervention | 67/128 (52.3%) | 0.66 | (0.37, 1.19) | p=0.1683 |
| | Control | 95/147 (64.6%) | | | |
| DBP >80mmHg | Intervention | 80/128 (62.5%) | 0.77 | (0.46, 1.31) | p=0.3356 |
| | Control | 103/147 (70.1%) | | | |

Intervention effects reported as estimated odds ratios (Intervention:Control), based on mixed effects logistic regression model, adjusted for randomised group, study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.
Total N varies by outcome depending on data availability.

**Table S8:** Secondary outcomes: serum lipids in the intervention and control groups at baseline and 12 months

| | | N | Mean (SD) | | | Intervention Effect (Intervention:Control) | | | ICC |
|---|---|---|---|---|---|---|---|---|---|
| | | | Baseline | 12months | Change | Estimate | 95% CI | p-value | |
| Total cholesterol (mmol/l) | Intervention | 121 | 4·3 (1·1) | 4·5 (1·3) | 0·23 (1·36) | 1·03 | (0·97, 1·10) | p=0·2874 | 0·05 |
| | Control | 147 | 4·3 (1·1) | 4·3 (1·1) | 0·07 (0·87) | | | | |
| HDL-cholesterol (mmol/l) | Intervention | 121 | 1·1 (0·3) | 1·2 (0·4) | 0·13 (0·25) | 1·06 | (1·00, 1·13) | p=0·0563 | 0·15 |
| | Control | 147 | 1·2 (0·3) | 1·2 (0·3) | 0·04 (0·21) | | | | |
| Triglycerides (mmol/l) | Intervention | 121 | 2·1 (1·4) | 1·7 (1·4) | -0·31 (1·33) | 0·80 | (0·72, 0·89) | p<0·0001 | <0·01 |
| | Control | 147 | 1·9 (0·9) | 2·0 (1·2) | 0·09 (0·92) | | | | |

Intervention effects reported as estimated relative differences (Intervention:Control), based on mixed effects linear regression model of log-transformed lipid measures, adjusted for randomised group, baseline value (log-transformed), study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.

N refers to number of participants with data available at baseline and 12 months for each outcome. ICC: Intraclass Correlation Coefficient.

**Table S9:** Adverse effects identified a priori as relevant to the intervention treatment, experienced by intervention group participants during year one at study visits in each phase of the weight management programme. The usual-care control group was seen only at baseline and 12 months.

| | TDR phase (12-20 weeks) | | | | FR phase (2-8 weeks) | | | | WLM phase (up to 52 weeks) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total (n=139) | Mild | Moderate | Severe | Total (n=124) | Mild | Moderate | Severe | Total (n=94) | Mild | Moderate | Severe |
| Constipation | 65 (46·8) | 30 (21·6) | 24 (17·3) | 11 (7·9) | 18 (14·5) | 14 (11·3) | 4 (3·2) | 0 (0·0) | 6 (6·4) | 2 (2·1) | 2 (2·1) | 2 (2·1) |
| Sensitivity to cold | 57 (41·0) | 37 (26·6) | 12 (8·6) | 8 (5·8) | 30 (24·2) | 19 (15·3) | 6 (4·8) | 5 (4·0) | 13 (13·8) | 7 (7·4) | 2 (2·1) | 4 (4·3) |
| Headache | 53 (38·1) | 31 (22·3) | 13 (9·4) | 9 (6·5) | 15 (12·1) | 10 (8·1) | 3 (2·4%) | 2 (1·6) | 8 (8·5) | 5 (5·3) | 2 (2·1) | 1 (1·1) |
| Dizziness | 49 (35·3) | 40 (28·8) | 7 (5·0) | 2 (1·4) | 11 (8·9) | 3 (2·4) | 6 (4·8) | 2 (1·6) | 7 (7·4) | 4 (4·3) | 3 (3·2) | 0 (0·0) |
| Fatigue | 45 (32·4) | 24 (17·3) | 11 (7·9) | 10 (7·2) | 18 (14·5) | 10 (8·1) | 3 (2·4) | 5 (4·0) | 8 (8·5) | 2 (2·1) | 0 (0·0) | 6 (6·4) |
| Mood change | 35 (25·2) | 16 (11·5) | 12 (8·6) | 7 (5·0) | 10 (8·1) | 4 (3·2) | 4 (3·2) | 2 (1·6) | 4 (4·3) | 1 (1·1) | 2 (2·1) | 1 (1·1) |
| Nausea | 25 (18·0) | 15 (10·8) | 4 (2·9) | 6 (4·3) | 3 (2·4) | 3 (2·4) | 0 (0·0) | 0 (0·0) | 1 (1·1) | 1 (1·1) | 0 (0·0) | 0 (0·0) |
| Diarrhoea | 23 (16·5) | 11 (7·9) | 10 (7·2) | 2 (1·4) | 5 (4·0) | 4 (3·2) | 1 (0·8) | 0 (0·0) | 1 (1·1) | 1 (1·1) | 0 (0·0) | 0 (0·0) |
| Indigestion | 20 (14·4) | 15 (10·8) | 3 (2·2) | 2 (1·4) | 4 (3·2) | 2 (1·6) | 2 (1·6) | 0 (0·0) | 1 (1·1) | 1 (1·1) | 0 (0·0) | 0 (0·0) |
| Hair Loss | 19 (13·7) | 10 (7·2) | 7 (5·0) | 2 (1·4) | 13 (10·5) | 3 (2·4) | 6 (4·8) | 4 (3·2) | 8 (8·5) | 4 (4·3) | 3 (3·2) | 1 (1·1) |

Data reported as N(%)

**Table S10:** Per-protocol analysis of primary outcomes

| | | N/Total (%) | Odds Ratio | | |
|---|---|---|---|---|---|
| | | | Estimate | 95% CI | p-value |
| Weight loss ≥15kg at 12 months | Intervention | 36/128 (28·1%) | - | - | p<0·0001[(a)] |
| | Control | 0/147 (0·0%) | | | |
| Diabetes remission ($HbA_{1c}$ <48mmol/mol, off diabetic medication of ≥2 months) | Intervention | 65/127[(b)] (51·2%) | 23·8 | (9·60, 58·8) | p<0·0001 |
| | Control | 6/147 (4·1%) | | | |

Intervention effects reported as estimated odds ratios (Intervention:Control), based on mixed effects logistic regression model, adjusted for randomised group, study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect. For per protocol analyses, no assumptions were made about missing values.

(a) regression model could not be fitted for weight loss outcome; p-value from Fisher's Exact Test

(b) remission outcome missing for one subject in Intervention group due to blood sample not being obtained at 12 month visit, and no $HbA_{1c}$ record being available in GP notes

**Table S11:** Subgroup analyses of primary outcomes: weight loss ≥15kg at 12 months. Given that none of the control group achieved this outcome, the planned analyses using logistic regression models with interaction terms were not possible, so the odds ratios presented here relate to achievement of the outcome in the Intervention group only, for each subgroup relative to the reference group

| | | Control | Intervention | Odds Ratio (within Intervention group) | | |
|---|---|---|---|---|---|---|
| | | N/Total (%) | N/Total (%) | Estimate | 95% CI | p-value |
| Age at baseline (years) | <50 | 0/30 (0·0%) | 9/52 (17·3%) | reference | | |
| | 50-54 | 0/31 (0·0%) | 9/32 (28·1%) | 1·78 | (0·62, 5·17) | p=0·29 |
| | 55-59 | 0/31 (0·0%) | 10/34 (29·4%) | 2·14 | (0·75, 6·07) | p=0·15 |
| | ≥60 | 0/57 (0·0%) | 8/31 (25·8%) | 1·64 | (0·55, 4·86)) | p=0·37 |
| Sex | Male | 0/93 (0·0%) | 27/83 (32·5%) | reference | | |
| | Female | 0/56 (0·0%) | 9/66 (13·6%) | 0·32 | (0·14, 0·76) | p=0·0094 |
| Duration of diabetes (years) | <2 | 0/60 (0·0%) | 6/50 (12·0%) | reference | | |
| | ≥2, <4 | 0/39 (0·0%) | 13/47 (27·7%) | 2·93 | (1·00, 8·65) | p=0·051 |
| | ≥4, <6 | 0/50 (0·0%) | 17/52 (32·7%) | 3·82 | (1·34, 10·85) | p=0·012 |
| Baseline $HbA_{1c}$ (%) | <7·0 | 0/50 (0·0%) | 7/44 (15·9%) | reference | | |
| | ≥7·0, <8·0 | 0/66 (0·0%) | 19/65 (29·2%) | 2·10 | (0·79, 5·60) | p=0·14 |
| | ≥8·0 | 0/33 (0·0%) | 10/40 (25·0%) | 1·92 | (0·64, 5·77) | p=0·24 |
| Baseline weight (kg) | <90 | 0/48 (0·0%) | 3/40 (7·5%) | reference | | |
| | ≥90, <110 | 0/68 (0·0%) | 18/71 (25·4%) | 4·46 | (1·21, 16·4) | p=0·024 |
| | ≥110 | 0/33 (0·0%) | 15/38 (39·5%) | 8·28 | (2·13, 32·1) | p=0·0022 |
| Number of oral anti-diabetic medications at baseline | None | 0/34 (0·0%) | 9/38 (23·7%) | reference | | |
| | 1 | 0/79 (0·0%) | 14/65 (21·5%) | 0·97 | (0·36, 2·60) | p=0·96 |
| | 2+ | 0/36 (0·0%) | 13/46 (28·3%) | 1·37 | (0·50, 3·73) | p=0·54 |

Estimated odds ratios based on mixed effects logistic regression model, adjusted for study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.

**Table S12:** Subgroup analyses of primary outcomes: remission of diabetes ($HbA_{1c}$ <48mmol/mol, off anti-diabetic medication for 2 months) at 12 months. Given that few in the control group achieved this outcome, the planned analyses using logistic regression models with interaction terms were highly underpowered, so the odds ratios presented here relate to achievement of the outcome in the Intervention group only, for each subgroup relative to the reference group

| | | Control | Intervention | Odds Ratio (within Intervention group) | | |
|---|---|---|---|---|---|---|
| | | N/Total (%) | N/Total (%) | Estimate | 95% CI | p-value |
| Age at baseline (years) | <50 | 1/30 (3·3%) | 17/52 (32·7%) | reference | | |
| | 50-54 | 1/31 (3·2%) | 14/32 (43·8%) | 1·53 | (0·61, 3·83) | p=0·36 |
| | 55-59 | 1/31 (3·2%) | 18/34 (52·9%) | 2·47 | (1·00, 6·09) | p=0·049 |
| | ≥60 | 3/57 (5·3%) | 19/31 (61·3%) | 3·27 | (1·28, 8·31)) | p=0·.013 |
| Sex | Male | 4/93 (4·3%) | 27/83 (49·4%) | reference | | |
| | Female | 2/56 (3·6%) | 9/66 (40·9%) | 0·70 | (0·36, 1·36) | p=0·29 |
| Duration of diabetes (years) | <2 | 6/60 (10·0%) | 22/50 (44·0%) | reference | | |
| | ≥2, <4 | 0/39 (0·0%) | 24/47 (51·1%) | 1·38 | (0·61, 3·09) | p=0·44 |
| | ≥4, <6 | 0/50 (0·0%) | 33/52 (42·3%) | 0·97 | (0·44, 2·13) | p=0·93 |
| Baseline $HbA_{1c}$ (%) | <7·0 | 5/50 (10·0%) | 25/44 (56·8%) | reference | | |
| | ≥7·0, <8·0 | 1/66 (1·5%) | 32/65 (49·2%) | 0·68 | (0·31, 1·53) | p=0·35 |
| | ≥8·0 | 0/33 (0·0%) | 11/40 (27·5%) | 0·28 | (0·10, 0·73) | p=0·0099 |
| Baseline weight (kg) | <90 | 3/48 (6·2%) | 19/40 (47·5%) | reference | | |
| | ≥90, <110 | 1/68 (1·5%) | 31/71 (43·7%) | 2·10 | (0·79, 5·60) | p=0·14 |
| | ≥110 | 2/33 (6·1%) | 18/38 (47·4%) | 1·92 | (0·64, 5·77) | p=0·24 |
| Number of oral anti-diabetic medications at baseline | None | 6/34 (17·6%) | 26/38 (68·4%) | reference | | |
| | 1 | 0/79 (0·0%) | 30/65 (46·2%) | 0·42 | (0·18, 1·01) | p=0·053 |
| | 2+ | 0/36 (0·0%) | 12/46 (26·1%) | 0·17 | (0·06, 0·45) | p=0·0004 |

Estimated odds ratios based on mixed effects logistic regression model, adjusted for study centre (Tyneside, Scotland), and practice list size (≤5700, >5700) as fixed effects, and GP practice as a random effect.