Brief interventions for weight management in primary care

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University of Oxford

Declaration: Some of the interventions used in the trials reported in this presentation have been provided free to the NHS by weight management companies. I receive no personal renumeration from any private company.
GPs and other health or social care professionals should:

- Raise the issue of **weight loss** in a respectful and non-judgemental way. Recognise that this may have been raised on numerous occasions and respect someone's choice not to discuss it further on this occasion.
- Identify people eligible for referral to lifestyle weight management services.

### Summary of Recommendation and Evidence

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade (What's This?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Adults</td>
<td>The USPSTF recommends screening all adults for obesity. Clinicians should offer or refer patients with a body mass index (BMI) of 30 kg/m² or higher to intensive, multicomponent behavioral interventions.</td>
<td>B</td>
</tr>
</tbody>
</table>
Effectiveness of primary care treatment

Primary care vs control: -0.22 kg (95% CI: -0.87, 0.44); p = 0.52

Effectiveness of treatment in primary care or in community weight loss groups

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>BWMP Mean</th>
<th>SD</th>
<th>Total</th>
<th>Control Mean</th>
<th>SD</th>
<th>Total</th>
<th>Weight</th>
<th>Mean Difference (IV, Fixed, 95% CI)</th>
<th>Mean Difference (IV, Fixed, 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.9.5 General practice</strong></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Jolly 2011 (GP)</td>
<td>-0.8</td>
<td>5.1</td>
<td>70</td>
<td>-1.1</td>
<td>5.1</td>
<td>50</td>
<td>12.6%</td>
<td>0.30 [-1.55, 2.15]</td>
<td></td>
</tr>
<tr>
<td>Jolly 2011 (pharmacist)</td>
<td>-0.7</td>
<td>4.5</td>
<td>70</td>
<td>-1.1</td>
<td>5.1</td>
<td>50</td>
<td>13.9%</td>
<td>0.40 [-1.36, 2.16]</td>
<td></td>
</tr>
<tr>
<td>Nanchahal 2011</td>
<td>-1.3</td>
<td>4.3</td>
<td>191</td>
<td>-1</td>
<td>4.5</td>
<td>190</td>
<td>55.5%</td>
<td>-0.30 [-1.18, 0.58]</td>
<td></td>
</tr>
<tr>
<td>Wadden 2011</td>
<td>-2.8</td>
<td>6.4</td>
<td>131</td>
<td>-2</td>
<td>6.4</td>
<td>130</td>
<td>18.0%</td>
<td>-0.80 [-2.35, 0.75]</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>462</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.22 [-0.87, 0.44]</td>
<td></td>
</tr>
<tr>
<td>Heterogeneity: Chi² = 1.35, df = 3 (P = 0.72); I² = 0%</td>
<td></td>
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</tr>
</tbody>
</table>

Primary care vs control: -0.22 kg (95% CI: -0.87, 0.44); p = 0.52

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
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<th>Total</th>
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<th>SD</th>
<th>Total</th>
<th>Weight</th>
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<tr>
<td><strong>1.9.4 Commercial</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heshka 2006</td>
<td>-4.1</td>
<td>6.5</td>
<td>221</td>
<td>-1.1</td>
<td>5.4</td>
<td>212</td>
<td>23.1%</td>
<td>-3.00 [-4.12, -1.88]</td>
<td></td>
</tr>
<tr>
<td>Jebb 2011</td>
<td>-4.06</td>
<td>6.02</td>
<td>377</td>
<td>-1.77</td>
<td>3.78</td>
<td>395</td>
<td>57.3%</td>
<td>-2.29 [-3.00, -1.58]</td>
<td></td>
</tr>
<tr>
<td>Jolly 2011 (RC)</td>
<td>-2.1</td>
<td>6.4</td>
<td>100</td>
<td>-1.1</td>
<td>5.1</td>
<td>33</td>
<td>6.3%</td>
<td>-1.00 [-3.15, 1.15]</td>
<td></td>
</tr>
<tr>
<td>Jolly 2011 (SW)</td>
<td>-1.9</td>
<td>5.1</td>
<td>100</td>
<td>-1.1</td>
<td>5.1</td>
<td>33</td>
<td>7.2%</td>
<td>-0.80 [-2.81, 1.21]</td>
<td></td>
</tr>
<tr>
<td>Jolly 2011 (WW)</td>
<td>-3.5</td>
<td>6.9</td>
<td>100</td>
<td>-1.1</td>
<td>5.1</td>
<td>33</td>
<td>6.0%</td>
<td>-2.40 [-4.60, -0.20]</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal (95% CI)</strong></td>
<td>898</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-2.27 [-2.81, -1.73]</td>
<td></td>
</tr>
<tr>
<td>Heterogeneity: Chi² = 5.05, df = 4 (P = 0.28); I² = 21%</td>
<td></td>
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</tbody>
</table>

Community weight-loss groups vs control: -2.27 kg (95% CI: -2.81, -1.73); p<0.00001

The WRAP trial: Weight-loss Referrals for Adults in Primary care (n = 1267, 23 practices)

Aims
To evaluate the clinical and cost effectiveness of three weight loss interventions that can be delivered in primary care:

- CP52; referral to a commercial provider for 52 weeks (approx £200)
- CP12; referral for 12 weeks (approx £50)
- BI; a brief intervention (approx £7)

Participants
- 68% female,
- Mean age = 53
- Mean BMI = 34.5
- HbA1c = 42 mmol/mol

Recruitment
Letter from GP to people with BMI > 28
Approx. 10% responded and entered trial

Weight change over 1y

<table>
<thead>
<tr>
<th></th>
<th>BI</th>
<th>CP12</th>
<th>CP52</th>
<th>CP vs BI</th>
<th>CP52 vs CP12</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR</td>
<td>-3.71</td>
<td>-4.91</td>
<td>-7.23</td>
<td>-2.21* (-3.53, -0.89)</td>
<td>-2.65* (-3.99, -1.32)</td>
</tr>
</tbody>
</table>
## Change in cardiovascular risk factors

<table>
<thead>
<tr>
<th></th>
<th>Mean (SE) Change</th>
<th>Adj Difference (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BI</td>
<td>CP12</td>
</tr>
<tr>
<td>Glucose (mmol/L)</td>
<td>-0.11 (0.20)</td>
<td>-0.27 (0.10)</td>
</tr>
<tr>
<td>HbA1c (mmol/mol)</td>
<td>0.15 (0.69)</td>
<td>-1.49 (0.37)</td>
</tr>
<tr>
<td>Triglycerides (mmol/L)</td>
<td>-0.14 (0.07)</td>
<td>-0.23 (0.05)</td>
</tr>
<tr>
<td>Cholesterol (mmol/L)</td>
<td>-0.31 (0.10)</td>
<td>-0.32 (0.05)</td>
</tr>
<tr>
<td>HDL Cholesterol</td>
<td>0.01 (0.10)</td>
<td>0.02 (0.05)</td>
</tr>
<tr>
<td>LDL Cholesterol</td>
<td>-0.27 (0.04)</td>
<td>-0.24 (0.03)</td>
</tr>
</tbody>
</table>
Primary Analysis – Weight change

Weight change over 2 years

No. Participants

<table>
<thead>
<tr>
<th></th>
<th>BI</th>
<th>CP12</th>
<th>CP52</th>
</tr>
</thead>
<tbody>
<tr>
<td>BI</td>
<td>211</td>
<td>144</td>
<td>124</td>
</tr>
<tr>
<td>CP12</td>
<td>528</td>
<td>405</td>
<td>339</td>
</tr>
<tr>
<td>CP52</td>
<td>528</td>
<td>455</td>
<td>360</td>
</tr>
</tbody>
</table>

Percentage of baseline weight (%)

Month

Standard error bars shown around mean estimates
Diabetes Prevention Program:
Weight regain is typical, even in intensive programmes
Diabetes Prevention Program:
But sustained reductions in diabetes incidence - despite weight regain

DPP. Lancet, 14 (2009), pp. 1677–1686
Cumulative QALYs* gained and healthcare costs avoided

- **QALY per 100,000 people**
  - 2014: 3 M (12 M)
  - 2027: 1,925
  - 2039: 1,282

- **£million per 100,000 people**
  - 2014: 3 M (12 M)
  - 2027: £13.0
  - 2039: £8.6

*One QALY is equal to 1 year of life in perfect health.

Cost per kg weight lost vs. brief advice

1 Year
- £26/kg
- £75/kg

2 Year
- £91/kg
- £156/kg

Cost per QALY vs. brief advice (over 25 years)

- £417/QALY (cost saving)
- £2,394/QALY

Making opportunistic brief interventions: The BWeL Trial

- Offer help
- Book them in
- Create accountability
- To create momentary motivation
- To capitalise on the moment
- To create lasting motivation

Ratings of appropriateness by trial arm
Ratings of helpfulness by trial arm
77% of eligible patients accepted the referral
Of those who accepted the referral, more than half attended the programme and most completed the course.
Opportunistic interventions can increase weight lost at 1 y


- Weight change at 3 months
  - Control: -1.76 (95% CI: -2.17; -1.35), p < 0.001
  - Intervention: -1.43 (95% CI: -1.97; -0.89), p < 0.001

- Weight change at 12 months
  - Control: -1.43 (95% CI: -1.97; -0.89), p < 0.001
  - Intervention: -1.43 (95% CI: -1.97; -0.89), p < 0.001
Percentage of people taking action and type of action taken by 12 months in the two arms of the trial.

Control intervention:
- No action: 20%
- Self-help action: 30%
- Effective action: 50%

Active intervention:
- No action: 10%
- Self-help action: 40%
- Effective action: 50%
Modelled change in proportion with BMI>30 to 2035 if brief interventions were given once per year
Weight management in primary care

- A brief opportunistic interventions from a doctor to encourage weight loss is acceptable to patients
- Advice from a doctor to lose weight increases the number of people taking effective action 4-fold
- Referral to a 12 week group programme is cost-saving over 25y relative to advice to lose weight
- Increased duration of support significantly increases weight loss and health benefits. It is more expensive but still very cost effective
- Weight regain is common but does not invalidate the benefits of initial losses
- Size matters: need to scale-up to achieve population-level impact

A brief intervention, resulting in 1.5 kg weight loss, delivered once a year to all eligible people visiting their GP, could halve the prevalence of obesity by 2035
This research is funded by the National Institute for Health Research Collaboration for Leadership for Applied Health Research and Care (NIHR CLAHRC) Oxford. The views expressed are those of the authors and not necessarily those of the NIHR, the NHS or the Department of Health.