Public health interventions for weight loss maintenance

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Thank you to my colleagues

My supervisors:
• Dr Amanda Daley
• Professor Kate Jolly
• Dr Amanda Lewis

Collaborators:
• Professor Paul Aveyard
• Professor Susan Jebb

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Hundreds of years of medical progress, and all you can tell me to do is eat less?
The UK Primary Care Challenge

- Typical GP list will have >1000 patients who may benefit from weight loss
- QOF requires GPs to record BMI, but does not require them to offer treatment.
- There is perceived to be a lack of effective treatment options.
Do weight loss maintenance interventions need to be different to weight loss interventions?
Fostering independence and self-management (including self-monitoring). Discussing opportunities for ongoing support once the programme or referral period has ended. Sources of ongoing support may include the programme itself, online resources or support groups, other local services or activities, and family or friends.

Stressing the importance of maintaining new dietary habits and increased physical activity levels in the long term to prevent weight re-gain and discussing strategies to overcome any difficulties in maintaining the new behaviours.

Sustainable practices

http://www.nice.org.uk/guidance/PH53/chapter/1-recommendations
What interventions can we develop for public health?

- Cost/ who funds the intervention?
- Who delivers the intervention?
- What intervention works?
- Does the effectiveness depend on the initial weight loss programme?
- How do we identify people to help them maintain weight loss?
Self-weighing

Towel racks are a great tool for weight loss!
Regular self-weighing to promote weight maintenance after intentional weight loss: a quasi randomised controlled trial

Study Design

Figure 1: Study design
Intervention

- Weight maintenance leaflet
- Weight record card
- Instructed to weigh themselves weekly
- Two phone calls
- Voucher to purchase weighing scales
Results

-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
Baseline 3 months 12 months

Accepted Maintenance

Intervention

0.7 kg (95% CI 0.1, 1.2)

-3.0 (-3.7, -2.3)
Is self-weighing an effective weight management tool: A systematic literature review and meta analysis
Weight loss maintenance studies

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Experimental</th>
<th>Control</th>
<th>Mean Difference</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Total</td>
<td>Mean</td>
</tr>
<tr>
<td>Wing face to face 2006</td>
<td>2.5</td>
<td>6.7</td>
<td>105</td>
<td>4.9</td>
</tr>
<tr>
<td>Wing internet 2006</td>
<td>4.7</td>
<td>8.6</td>
<td>104</td>
<td>4.9</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>4.7</td>
<td>8.6</td>
<td>209</td>
<td>4.9</td>
</tr>
</tbody>
</table>

Heterogeneity: $\tau^2 = 1.05$; $\chi^2 = 1.76$, df = 1 ($P = 0.18$); $I^2 = 43\%$
Test for overall effect: $Z = 1.25$ ($P = 0.21$)
Weight loss studies with longer term follow-up

### Table

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<thead>
<tr>
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<th>Experimental Mean</th>
<th>Experimental SD</th>
<th>Experimental Total</th>
<th>Control Mean</th>
<th>Control SD</th>
<th>Control Total</th>
<th>Weight</th>
<th>Mean Difference IV, Random, 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bertz 2012</td>
<td>-9.5</td>
<td>6.1</td>
<td>14</td>
<td>-0.8</td>
<td>6.1</td>
<td>7</td>
<td>22.5%</td>
<td>-8.70 [-14.23, -3.17]</td>
</tr>
<tr>
<td>Bertz 2012 diet and ex</td>
<td>-7.3</td>
<td>6.3</td>
<td>16</td>
<td>-0.8</td>
<td>6.1</td>
<td>8</td>
<td>23.1%</td>
<td>-6.50 [-11.73, -1.27]</td>
</tr>
<tr>
<td>Fujimoto follow-up 1992</td>
<td>-13</td>
<td>13.2</td>
<td>55</td>
<td>-5</td>
<td>6</td>
<td>17</td>
<td>24.6%</td>
<td>-8.00 [-12.51, -3.49]</td>
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<tr>
<td>Linde 2011</td>
<td>-0.5</td>
<td>3.0</td>
<td>34</td>
<td>-0.2</td>
<td>2.0</td>
<td>34</td>
<td>29.8%</td>
<td>-0.30 [-1.51, 0.91]</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>119</strong></td>
<td></td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td><strong>100.0%</strong></td>
<td><strong>-5.52 [-10.68, -0.36]</strong></td>
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Heterogeneity: Tau² = 22.87; Chi² = 21.74, df = 3 (P < 0.0001); I² = 86%
Test for overall effect: Z = 2.09 (P = 0.04)

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<td>34</td>
<td>0.0%</td>
<td>-0.30 [-1.51, 0.91]</td>
</tr>
<tr>
<td><strong>Total (95% CI)</strong></td>
<td><strong>85</strong></td>
<td></td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td><strong>100.0%</strong></td>
<td><strong>-7.73 [-10.64, -4.82]</strong></td>
</tr>
</tbody>
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Heterogeneity: Tau² = 0.00; Chi² = 0.34, df = 2 (P = 0.84); I² = 0%
Test for overall effect: Z = 5.21 (P < 0.000001)
Conclusions and Implications

• We need to find pragmatic interventions we can give to people to help maintain weight loss.
• Self-weighing based interventions may be one such method.
• We need to identify when, where and how these interventions need to take place.
Thank you for listening

For questions or a copy of the slides please email c.d.madigan@bham.ac.uk
UK Congress on Obesity 2014

University of Birmingham, Edgbaston Campus
Tuesday 16th September and Wednesday 17th September 2014