

## CHAPTER 193

# Alternative treatments for weight loss: range, rationale, and effectiveness

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### Introduction

Up to 72 per cent of men and 85 per cent of women in some countries are currently trying to lose, or at least not gain, weight<sup>1</sup>. However, less than 30 per cent of those trying to lose and 20 per cent of those trying not to gain, report using 'traditional' treatments to do so<sup>2</sup>. 'Alternative' treatments seem to be more popular, although their effectiveness has not been established.

In this paper we used appropriate electronic searches to add to the findings from three earlier reviews of 'alternative' treatments in weight loss<sup>3-5</sup>. 'Alternative' here is defined as those treatments not involving modifications of energy balance through traditional means, as shown in Table 1. The report is narrative and we do not claim to cover all treatments, or use quantitative standards of assessment. Also, for brevity, only new data since the earlier reviews are reported. We consider alternative treatments in three categories; ingestible substances, non-ingestible treatments and alternative forms of delivery.

**Table 1. Traditional treatment approaches for obesity**

Target population	Interventions
Overweight/obese (with co-morbidities)	Medical/surgery/VLEDs
Overweight/obese (with disordered eating patterns or cognitions)	Psychology/behaviour modification
Overweight/obese	Individual education and skills training
General population	Population education and awareness raising

### Ingestible substances

As many as 7 per cent of the US population<sup>2</sup>, and up to 28 per cent of young, obese women<sup>6</sup>, regularly use non-prescription, over-the-counter (OTC) substances for weight loss. In previous reviews, no evidence of long-term beneficial results for any of the ingredients commonly contained in these preparations has been found. We concurred with other authors that while several products do have a reasonable physiological rationale, claims of effectiveness are usually not based on well controlled studies published in reliable peer-reviewed literature. The effectiveness of substances that may interact is also difficult to assess.

Since our last report<sup>3</sup> we have identified a number of newly promoted compounds including: bissey nut extract, citrus aurantium, coleus forskolin, ephedra alkaloids, ginseng, green tea extract, guarana, L-tyrosine, magnesium stearate, gymnema sylvestre and pyruvate. We have been unable to find acceptable evidence supporting any of these for long-term weight loss in humans. Rat studies which claim hydroxycitric acid (HCA) may reduce food intake were partly supported by a 2 week single-blind crossover trial in humans in the Netherlands which reported a 5-30 per cent decrease in 24-h energy

intake, although without changes in appetite profile or dietary restraint<sup>7</sup>. However, another study of 89 mildly obese women found no effects of HCA on appetite variables and no satiety effect<sup>8</sup>.

Several recent trials confirm the earlier short-term successes reported for caffeine and ephedra in various forms. The Chinese herb ma-huang has featured in many of these. However, widespread side effects and some deaths have led the US Food and Drug Administration (FDA) to take action against marketers of this product and their continued availability and long-term safety is currently under question

In summary, there have been no good recent data produced to change the conclusions of earlier reviews showing that while some alternative substances have a reasonable theoretical rationale, none can be recommended for use on the basis of current evidence or long-term safety.

### **Non-ingestible treatments**

As well as ingestibles, there is a wide, and rapidly changing range of alternative non-ingestible treatments claiming benefits for weight loss. We have chosen some of the most common and enduring for inclusion.

#### **Skin applications**

Most skin creams claiming weight loss properties are focused primarily on 'cellulite' reduction<sup>9</sup>. Cellulite creams are diverse with 32 products surveyed containing 263 ingredients<sup>10</sup>. Commonly reported as an active ingredient is caffeine although no published evidence supports a role for topically applied caffeine in cellulite reduction. In their review of thigh creams, Alison *et al.*<sup>5</sup> conclude that any changes resulting from these are at most, cosmetic, and there is no evidence for medical/health benefits of these treatments. There has been no evidence since this review to change this conclusion. Slimming soaps which contain seaweed extract as the active ingredient have also been claimed to have weight loss effects<sup>11</sup>, but again, there is no published supporting evidence, or physiological basis for these claims.

#### **Acupuncture and acupressure**

Acupuncture and related oriental techniques are frequently cited as strategies to curb appetite and lower body weight. At least four controlled studies have found no such effect<sup>12</sup>, although improved psychological status has been observed in a recent randomized, placebo-controlled trial<sup>13</sup>. In one controlled study, combined acupressure and transcutaneous electrical stimulation of the auricular branch of the vagal nerve using an AcuSlim device suppressed appetite and body weight ( $-3.0 \pm 1.4$  kg) when applied twice weekly for four weeks<sup>14</sup>. However, auricular acupressure without electrical stimulation has not been found to have any effect<sup>15</sup>. Further studies are required to provide data on the longer term effectiveness of acupressure techniques in weight loss.

#### **Muscle electrostimulation (transcutaneous electrical nerve stimulation)**

Electronic muscle stimulation (EMS) or transcutaneous electrical nerve stimulation (TENS) apparatus are used as a supplementary treatment option in the management of selected muscular rehabilitation and conditioning. At least one study has shown significant weight loss with TENS compared to a control group<sup>14</sup> prompting a suggestion for further independent research on this process. However no impact of EMS on bodyweight has been demonstrated<sup>16</sup>.

#### **Hypnosis**

Hypnotherapy is often used as an adjunct treatment in weight loss, although few controlled studies exist on its effectiveness. A meta-analysis of five controlled studies using hypnosis for weight loss demonstrated a small non-significant effect, but a further review of the same data set, with the inclusion of one additional study, suggested a small significant effect (2.6 kg)<sup>17</sup>. In more recent studies, a slight benefit (mean loss of 2 kg) occurred with hypnosis plus overt aversion (electric shock, disgusting tastes and smells) compared with hypnosis alone<sup>18</sup> although a similar study did not confirm this<sup>19</sup>. In another study, 60 obese patients with obstructive sleep apnoea were randomized to receive two forms of hypnosis (directed at stress reduction or reducing energy intake reduction) compared to standard dietary advice alone. After initial weight loss in all groups, the hypnotherapy for stress reduction was the only intervention to achieve persistent weight loss (mean 3.8 kg)<sup>20</sup>.

**Other techniques**

Several other alternative treatment approaches including massage, body wrapping and strapping, eastern stress management techniques such as Yoga and Tai Chi, and a range of passive exercise devices have been proposed for weight loss, but none currently have any reliable evidence supporting their use for weight loss.

In summary therefore, minor weight loss benefits have been reported with hypnosis, and possibly acupressure with electrical stimulation in some situations, suggesting a possible justification for further research.

**Alternative methods of delivery**

Perhaps more interesting than alternative therapeutic treatments, are alternative forms of delivery of otherwise traditional treatments. Standard weight loss treatments are usually delivered through clinical or educational services in a one-on-one, or group situation in line with the steps approach shown in Table 1. Alternative methods of delivery are considered here under four main headings, with discussion of a fifth example encompassing a combination of these approaches. Only those approaches with the potential for a high penetration in the population have been considered.

**Correspondence**

Correspondence programmes offer a cost-effective means of delivering weight control programmes to a large number of people. Consumer preferences indicate that this approach may also be more desirable for many than face-to-face formats, particularly in higher education and income level groups<sup>21</sup>. Programmes can range from being totally self-help with minimal contact to adding a component to a shared-care programme. They have also been offered at no cost, at commercial rates, or with different forms of cost incentives. Reported success rates are generally higher with some level of payment, perhaps indicating a level of self selection through commitment. Telephone based interventions have also been found to have reasonable success in some cases. Correspondence may be more effective in some groups than others and may depend on the type of intervention required. King *et al.*<sup>22</sup> found exercise is easier to maintain in men using minimal contact strategies than dietary approaches focusing on modification of energy intake.

**Internet**

The development of the Internet provides unique opportunities for alternative delivery of weight loss programmes. However there is currently a huge variation in relevance and quality of sites, with probably less than 5 per cent providing sound weight loss advice<sup>23</sup>. Also, despite the wide proliferation of services, there is almost a complete lack of evidence of the effects of the Internet on health care outcomes<sup>24</sup>. One study comparing passive web-site education with more intensive Internet behaviour therapy did find positive short-term (6 month) effects on weight loss, with bigger effects in the more intensive group<sup>25</sup>. This suggests a greater role in future for Internet based programmes or combining the Internet with other approaches such as shared care or correspondence.

**Mass media and multi-media**

Mass media programmes in lifestyle change were initially tested in the 1970s with limited success. More recently, mass media in community interventions have been found to increase awareness, but have limited impact on weight loss at the population level<sup>26,27</sup>.

The development of multi-media systems presents a new and expanded opportunity for programme delivery. Some existing correspondence programmes have used elements of this such as videos, audio-tapes and print. However, the current availability of computer-based audio and video CDs and e-mail, and Internet delivery of these provides promising new opportunities to satisfy the requirements of many people for minimal contact, interactive services. Currently however there is no evidence of the benefits of such systems.

**Shared care**

Shared-care has been used as an effective delivery option for many health-related programmes ranging from asthma to pregnancy. Because weight control ideally calls for multi-disciplinary input, the idea of shared care between disciplines is a logical approach to service delivery. This is often referred to in principle, although surprisingly few evaluative studies have been reported. However, there is some evidence of better weight loss than in conventional single disciplinary interventions<sup>28</sup>. Options that

optimise use of the practitioner's time by combining with developed programmes and correspondence courses may be a logical direction for the future.

### Combined delivery services

While each of the delivery services discussed here has potential for improving outcomes in weight control, a combination of these approaches would seem to have logical advantages over any single approach. This has been attempted over the last decade in a programme developed for men in Australia<sup>29</sup>. GutBusters was developed as a shared care, correspondence course carried out in conjunction with trained General Practitioners (GPs). Participating GPs were required to complete at least part of a Post Graduate Medical Certificate in Weight Control Management.

A random survey was carried out with 266 participating doctors and 607 overweight patients in 1998. The results showed that after the training programme, 96 per cent said they felt more confident in helping patients lose weight, and 28 per cent claimed to have lost weight themselves. In addition, 23 per cent of patients claimed to have lost weight on the programme. A further 50 per cent had not yet taken the programme up, but intended to in the future, while 27 per cent had discontinued the programme. Patient satisfaction with GPs being involved in shared-care was high, with 96 per cent expressing a positive reaction.

As a result of the appeal of the programme, and the availability of new technology, the GutBuster programme has now been modified and expanded to include a range of weight loss programmes at different levels of intervention, using multi-media materials in a correspondence pack connecting participants to an interactive Internet site ([www.professortrim.com](http://www.professortrim.com)) and shared care with over 1,000 GPs and 100 specially trained 'Personal Weight Coaches'. Prospective evaluation is being established to monitor the ongoing effectiveness of the programme.

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