

Cochrane Corner

Weight loss: what works and what doesn't

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There are a wide range of interventions that have been studied to assess their effectiveness for lowering weight. They range from simple advice to the taking of medication. The medications on Table 2 are available in New Zealand and are not known to be associated with serious health consequences. They do not include those medications that have been associated with valvular

heart disease or hemorrhagic stroke. Overweight is defined as having a body mass index (BMI) of $> 25 \text{ kg/m}^2$ i.e. weight in kilograms divided by height in metres squared. Obesity is defined as a BMI > 30 . Obesity is a risk factor for a number of chronic diseases such as hypertension, dyslipidemia, diabetes mellitus, sleep apnea, osteoarthritis and some cancers.

Obesity has been increasing during the 20th century and now occurs in about 20% of the population of the USA. The two tables below summarise the lifestyle interventions and the medication available in New Zealand. The evidence for these tables has come from the Cochrane Library and the British Medical Journal's Evidence Based textbook Clinical Evidence.

Table 1. Lifestyle advice to assist weight loss

| | Initial success | Long term success | Evidence | Advantages | Disadvantages |
|--|---|---|---------------------------------|---|---|
| Low fat diet advice vs other weight reducing diets on weight | In patients $>25 \text{ kg/m}^2$ no difference at 6 months. | No difference at 12 months. | Cochrane review. ¹ | None. | Not reported. |
| Weight loss diet to reduce high blood pressure | Weight loss of $> 3 \text{ kg}$ by 4 months. | Weight loss of 3.7 kg at 4.5 years. | Cochrane review. ² | 3–9% reduction in weight resulted in a reduction of about 3 mmHg of systolic or diastolic blood pressure. | Antihypertensive drugs were more effective at lowering blood pressure. |
| Reduce or modify fat or cholesterol intake | Not clear. | For trials two years or longer an odds ratio of 0.84 for cardiovascular events significant $p < 0.05$. | Cochrane review. ³ | May have other advantages in terms of health. | Possibly only benefits for cardiovascular events in high risk patients. |
| Lifestyle interventions | | Advice on diet and exercise plus behavioural therapy more effective than diet or exercise alone. One RCT found a weight reduction of 3.8 kg at one year for diet guidelines and 7.9 kg for group getting the same plus walking. | Clinical evidence. ⁴ | Some weight regain over two years. | Weight loss of 2–6 kg sustained over two years. |

Table 2. Medication that is considered safe and available in New Zealand

| Drug | Initial success | Long term success | Evidence | Advantages | Disadvantages |
|--|---|--|--|---|--|
| Diethylpropion (Tenuate Dospan) | 2 studies. One had 9.1 kg loss at six months the other 1.6kg weight gain. | No weight loss at 12 months. | Two RCTs. One found a benefit one did not. ⁴ | Maybe none. | Case reports of pulmonary hypertension and psychosis. |
| Orlistat (Xenical) | At 12 weeks 120 mg TDS 1.76kg difference. At 12 months 2.9 kg difference. | At 24 months 3.19 kg difference. | Systematic reviews and RCTs. ⁴ Most trials were in patients > 30 kg/m ² and had four to five weeks run in on low calorie diet. | Results in small weight reductions and prevents regain of weight after weight loss. | Oily spotting from rectum, flatulence, fecal urgency 22-27% Orlistat vs 1-7% placebo. Given run in period in study patients may not be generalisable to regular patients. No information on long term weight loss. |
| Phenteramine (Duromine or Umine) | One RCT found that on 30 mg daily 7.4kg net loss at 9 months in patients who were 20% overweight. | One RCT to 9 months no longer term data. | One RCT with all patients on 1000 cal/day diet. ⁴ | Effective at nine months. | Only one study but not thought to damage heart valves. |
| Sibutramine (Reductil) | 10-20 mg of Sibutramine given for 8 weeks resulted in 3.4 kg of body weight. Some of the patients had BMI > 33 kg/m ² . | 25-80% regain in weight after 12 weeks. | Systematic reviews. ⁴ | Effective in the short term but not long term. | 10-30% of patients get side effects. These include increase in blood pressure of 1-3 mmHg, headache, dry mouth, anorexia, constipation, insomnia. No safety data longer than two years. |
| Both Orlistat and Sibutramine vs Sibutramine | One RCT in patients who had completed one year of Sibutramine compared two drugs versus Sibutramine. No benefit found after 16 weeks. | No studies of this option. | One RCT. ⁴ | No advantage of both in such a study. | No information. |

References

1. Pirozzo S, Summerbell C, Cameron C, Glasziou P. Advice on low-fat diets for obesity (Cochrane Review). In: The Cochrane Library, Issue 2, 2002. Oxford: Update Software.
2. Mulrow CD, Chiquette E, Angel L, Cornell J, Summerbell C, Anagnostis B, Brand M, Grimm R Jr. Dieting to reduce body weight for controlling hypertension in adults (Cochrane Review). In: The Cochrane Library, Issue 2, 2002. Oxford: Update Software.
3. Hooper L, Summerbell CD, Higgins JPT, Thompson RL, Clements G, Capps N, Davey Smith G, Riemersma RA, Ebrahim S. Reduced or modified dietary fat for preventing cardiovascular disease (Cochrane Review). In: The Cochrane Library, Issue 2, 2002. Oxford: Update Software.
4. Clinical evidence Obesity and changing behaviour for cardiovascular disorders. BMJ Publishing Issue 6 December 2001 London

Members of the Royal New Zealand College of General Practitioners can have access to the full reviews by contacting Cheryl Pearson at the College in Wellington. For the access codes to the Cochrane library contact Cheryln Pearson cpearson@rnzcg.org.nz at the College. Access to clinical evidence can be obtained at <http://www.clinicalevidence.org/>