

PROFESSOR TRIM'S WAISTLINE



THE PROFESSOR'S PICK

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The 10 most important realisations in weight control of the new millennium (so far).

1. There are no easy fixes

Although blind Freddy should have been able to see this, a gullible public has vainly clung to the hope that it may not be true; that whilst it may take 20 years to pile on the kilos, these can be shed overnight by taking a magic pill, following a 'fantastic new diet', or buying an effort-free fat shedding machine. It may take another millennium for the message to be fully accepted, but starvation is the best quick loss method. Trouble is, it's also the quickest way to regain, after it ends.

2. The fattening effects of modernity

Humans have existed (in one form or another) for over a half a million years. For 499,970 of those, the vast majority (probably 99.9%) have been lean. It's only in the last 20-30 years that this has changed, with now almost 1/3 of the world's population, and over 50% of those in industrialised countries overweight or obese. What does this tell us? Probably that we don't need scientists to tell us what is making us so fat.

3. The importance of 'volume'

With all the discussion about 'fattening' and 'non-fattening' nutrients, someone has forgotten the basics of mathematics. Overweight results when food VOLUME (energy density x portion size), exceeds energy expenditure (metabolic rate; thermogenesis and exercise). Exercise for weight loss is also defined in terms of VOLUME (frequency x intensity x duration) and it is this that determines the total amount of energy (kcal) expended.

4. The resurrection of weight lifting

Whilst resistance training (and specifically weight lifting) has always been regarded as a healthy activity, its monopoly by the body-building fraternity may have masked greater all round benefits. This is timely because of the decline in resistance types actions required for day-to-day living in modern societies as a result of technology. In this environment, planned weight lifting has been shown to maintain muscle mass while decreasing fat. It is also effective as part of a graduated exercise program to reduce diabetes and high blood sugars.

5. The value of seafood (at least for the moment)

Seafood is a well-known source of Omega 3 fatty acids, a form of fat that appears to be 'burned up' early in the energy cycle. For this reason, plus the low energy-density (calories per gram) of most seafood, it has value as a weight loss, as well as lipid-lowering food. Seafood is also a good source of protein and hence useful for weight loss in other ways. However, the fish that are highest in the 'good oils' are often those that travel long distances (salmon, tuna etc). With the ocean running out of supplies, aquaculture in confined spaces now makes up around 20% of all fish marketed. How this will affect the oil content, and hence nutritional value of fish is yet to be seen.

6. The value of protein

With arguments going on about low-carbohydrate or low fat diets, the other macro-nutrient – protein - seems to have

been overlooked. Yet protein is known to increase satiety (and therefore reduce food intake), as well as sustain muscle mass after exercise. The energy required to convert protein to fat also makes it a less fattening nutrient. In addition, increased protein after weight loss leads to less weight regain. Much research is now being carried out on different types of protein (ie. 'fast' vs 'slow') to optimize protein use for weight loss.

7. The realization that weight loss drugs might not cut it

While the 20th Century saw the rise of the drug as the solution to most medical problems, drug therapy for weight loss has been quite disappointing. Early promises, such as stimulants, the fen-phen combination and appetite suppressants, have proven premature, with many being withdrawn from the market after health risks. Three remaining drugs (duramine, xenical and reductil) have been shown to be less effective over the long-term than may have been hoped for with losses of around 3.5kg, only additional to lifestyle changes. Over-the-counter concoctions

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- Do OTC products work?
- Ranking the diet plans

[\(Click these links to articles\)](#)

have an even worse record, with none currently having any proven effectiveness.

8. The rise of surgery

As with medications, early promise in the field of bariatric surgery was premature. More recently though, the advent of keyhole adjustable surgery, has made surgical approaches more appealing. Average recorded weight losses in very big people are up to 35%, which far exceeds most other approaches. However, the procedure is expensive and does require ongoing supervision for best success. New surgical techniques are likely to add to the scope available in the near future.

9. The predictive value of the triglyceride waist

Screening for health risk reached a new level with the advent of portable measurement devices for blood lipids (cholesterol etc). However with increasing research and technology, a wider range of variables has become available for measurement. This was largely simplified by the discovery that two key factors; triglycerides and waist size, cover a range of risk measured by innumerable other measures. Risk increases dramatically where waist size is greater than that recommended for different ethnic groups (eg. 102cm for white males and 94cm for white

females) and triglyceride (Tg) is greater than 2mm/L.

10. The break-up of fats

While fat is still the most energy dense, and therefore fattening nutrient in food, gram for gram, research over the last 2-3 years has shown that not all fats are alike. Mono-unsaturated fats in particular, seem to be less fattening in an equicaloric diet that saturated fats. Foods high in these oils, such as Almonds and other nuts, also appear to have a beneficial effect on blood lipids. Their high protein content may also qualify them for a re-introduction into the standard weight loss diet.

Evaluating the diet plans

Although it is usually thought to be the only process needed for long-term weight loss, diets are now beginning to be discussed in their true light. No one diet plan is successful for all people, and none is likely to work long-term in the absence of a lifestyle change, in particular, increased physical activity.

Ways of eating however may still play a part. Hence the Professor reproduces, with permission, the results of a Masters Thesis in Dietetics from Wollongong University, objectively rating the 20 most common diet books of the moment.

Rating scores (see below) were out of 100 and were completed by a panel of weight control experts asked to objectify a number of factors in each diet on the basis of issues such as the following:

- Nutritional adequacy
- Energy allowed and recommended rate of weight loss
- Flexibility and sustainability
- Physical activity
- Supplement recommendations
- Author's credentials
- Scientific evidence

Ranking of 20 popular diets

Diet	Total score	Overall Ranking
Licence to Eat	91	1
The Volumetrics Weight Control Plan	91	1
The Fat Stripping Diet	87	3
Fat Loss for Life	81	4
The Diet that Works!	81	5
Eat More Weigh Less	81	5
Stop the Insanity	72	7
Rosemary Conley's Red Wine Diet	72	7
The Omega Plan	68	9
Fat Free Forever	59	10
Sugar Busters!	51	11
The Zone — A Dietary Road Map	51	11
The Carbohydrate Addict's Diet	47	13
Diet Signs — The Health Signs Diet	47	13
The Liver Cleansing Diet	46	15
The Complete Scarsdale Medical Diet	44	16
Eat Right 4 Your Type	44	16
Fit For Life	44	16
Dr Atkin's New Diet Revolution	35	19
Slim Forever	32	20

TRIM TRIVIA

Cinnamon improves blood sugars in diabetes

There have been many different types of foods claimed to reduce blood sugars. Cinnamon hasn't been one of them. But then, science moves in strange ways and if Pakistani research can be believed, there may be cause for using the herb in treating blood fats in diabetic patients (*Diabetes Care*, 2003 Dec;26(12): 3215-3218). Researchers showed a graduated reduction in blood sugars, triglycerides and LDL cholesterol in those who consumed 1-6g of cinnamon a day compared with a placebo containing no cinnamon. Who needs drugs?



...but so does vinegar

Apple cider vinegar has been used for years as a health supplement, with little good supporting evidence. Recently however there has been a suggestion that vinegar might delay the rise in blood sugars that normally follow a meal and hence contribute to increased insulin sensitivity in those who may otherwise be prone to diabetes. This was recently shown to be true in a test of 20g of apple cider vinegar given in 40g of water to diabetic and non-diabetic subjects in the US (*Diabetes Care*, 2004;27:281-2004). It's thought that acetic acid, a component of vinegar, suppresses sugar activity in the blood and hence may act like an anti-diabetic drug.

TALKING TURKEY WITH TRIM

Q. A lot of new centres are now offering tests for measuring resting metabolic rate (RMR). Can you explain how this is done, what it means, and if there is any value in it?

First, I need to explain why this has suddenly become popular. In the past, measuring RMR required expensive equipment and much time and effort to get a measure, which, when it all boils down, makes little change to weight loss recommendations. Improved technology has meant that measurements can now be taken using a small device costing only around \$500. This measures oxygen consumption, and by some clever mathematics, can then assess metabolic rate by calculating carbon dioxide expiration.

Metabolic rate is the number of calories expended just being alive. There are formulae to estimate this based on age, gender and body weight, but an actual measure can tell an experienced measurer whether the level is below that expected, and therefore possibly a cause of weight gain. Even if it is lower however, the recommendations to raise metabolism would be no different to normal weight loss recommendations. The one advantage may be that an objective measure can be monitored over time to see if the changes are working. It's up to you to work out if this is worth the hefty cost often charged by some commercial centres.

Q. Some chemists are now offering regular weighing and measuring as part of a service in weight control. However, I suspect this is just designed to sell weight loss products. Is there any value otherwise?

Good sir, your scepticism is boundless (but probably warranted). There is benefit in monitoring of body weight and it is well known that this is one



of the most effective means of losing weight over the long term. Having an outside person, such as a chemist, measure this is likely to add extra value. Chemists are now starting to develop data bases from which they can not only compare the same person over time, but can examine the weight loss of groups of people using different weight loss techniques. Over the long term this will be most useful to then be able to feedback to those wanting to know the best way for them to lose.

Q. In your last newsletter you listed about 12 ways to lose weight ranging from alternative treatments to diets, right up to surgery. If one of these only works OK, is there any advantage in combining several e.g. Very Low Energy Diets, drugs, lifestyle change and surgery? Would the effects be cumulative?

The sophistication of my readers astounds me. There may definitely be advantages in combining methods and at least one recent study has shown that a combination of methods works far better over the long-term than one method alone. Of course combining techniques does bring in the possibility of adverse interactions and hence this should only be done by an experienced therapist. Very Low Energy Diets (VLEDs) for example can result in a reduction in some vital nutrients in the body and the combination of these with certain drugs may result in a nutrient deficiency if this is not combined with a vitamin supplement. Surgery

however works best when it is combined with a VLED before the surgical process and a lifestyle-based program with meal replacements after the procedure. Again, an experienced therapist is required to know exactly how to make the combination, but two plus two, in weight loss, is likely to result in more than just four.

Q. Losing weight is easy. I've lost almost 60 kg now — three times — using meal replacements. The trouble is I seem to put on more than I lose once I go off the program. Am I doomed to just get bigger and bigger this way?

Meal replacements, Very Low Energy Diets (VLEDs), and surgery are three ways to lose lots of weight very quickly. However like starvation — the other way to lose quickly — there is a down side. The quicker it comes off, the quicker and more likely it is to come back on. Hence the increasing 'rhythm method of girth control' that you have been on.

It is possible to break this cycle, but this has to be done very carefully by gradual re-feeding and a graduated exercise program after the initial large weight loss. Both of these have to be done scientifically to gradually raise the metabolic rate, which drops dramatically with a decrease in energy intake. If this is not done, metabolism stays low as food intake increases, leading to only one conclusion — weight gain.

Research has shown that the risk of weight gain is much higher in someone who has lost, than someone who has never gained weight in the first place. This risk stays high for up to 5 years. Hence, any post weight loss program has to be more important than the one that helps you lose the weight. Incidentally, losing weight may also make you healthier (at the weight you finish at) than someone who has never gained. The down side is you're likely to regain quicker. You won't read that on any product information sheet!

Do OTC products actually work?

Given the move of Chemists into weight control (see this issue), a topic that needs to be canvassed is ‘how good are over-the-counter products sold by pharmacists for weight loss?’ These include a wide range of herbal products such as those listed below.

Table 1 – Common herbal products sold for weight loss

Product	Manufacturer	Proposed main active ingredient(s)	Claim
Cellasene and ‘copy-cat’ products (Cellusense; Cellufirm etc)	Bionix Pty Ltd	Grapeseed bioflavonoids; Dried sweet clover; Ginkgo biloba; Soy lecithin Fucus vesiculosus;	Decreases cellulite (unspecified)
Slim Life	Bullivant’s Natural Health	Guarana + Brindleberry	Decrease appetite Increases EE
Several ‘patches’	Often unstated	Fucus vesiculosus	Increases EE
Brindleslim; Citrim Plus; Chromaslim	Bullivant’s Wild Harvest	Brindleberry; Chromium picolinate;‘	Decreases appetite; Cleanses’ liver Milk thistle
Medislim Natural: (Weight control tabs; Liver tonic)	Wille Laboratories	Brindleberry; Chromium; Iodide Milk thistle	Suppresses appetite; Increases metabolism; ‘cleanses’ liver
Fatsorb; Fat Breakers Exo Fat; Chitosan/rich etc	Wille Labs Sunspot products	Chitosan; Oligofructose etc.	Absorbs fat
Beer Belly Busters	Natural Biocare	Brindleberry; St John’s Wort; Chromium chloride; Guarana; Pectin; Methyl cellulose	Reduces appetite; Reduces alcohol intake; Reduces conversion of alcohol to fat
Fat Metaboliser	Bullivant’s	Amino acids	Metabolises fat
Pro Sport L-Carnitine	Bullivant’s	L-Carnitine	Muscle gain
Body Lean	Bullivant’s	Brindleberry; Guarana; Chromium	Reduces appetite; Increases EE
ProteCol®	Genesis Network Corp	Collagen hydrolysate; L-carnitine; Glycerine. Citrin K, Grape extract, Chromium picolinate	Builds lean muscle; Burns stored fat; Controls appetite.
Herbalife	Herbalife	Fat absorbers(?), guarana, activated fibre, aminogen, vitamin/mineral/herbal formula	Prevent fat absorption, increase metabolic rate, break down proteins, reduce cellulite
Zellulean+ Escin	Bullivant’s	Pectin lecithin Escin Iodine Ginkgo Biloba	Improves circulation Reduces oedema ;

Available evidence on existing ingredients is sparse. In a review reported to the last International Conference on Obesity, there was little convincing evidence of success for any of these. Table 2 (below) lists the evidence for a number of common ingredients.

Table 2: A summary of common ingredients in popular weight loss supplements

Constituent	Active ingredient	Source	Proposed action	Theoretical Rationale ¹	Supporting Evidence ²	Potential risks
Brindleberry	Hydroxycitric Acid (HCA)	Rind of Asian citrus fruit	Decrease hunger; Increase de-novo lipogenesis	*	-tive	No
Chitosan	Deacetylated chitin (<i>amino polysaccharide</i>)	Marine crustacean shells	Inhibits fat absorption	(with hypo-caloric diet)	Very small *	No
Capsaicin		Spicy foods	Increase metabolism; Decrease food intake-	*	–	Yes

Chromium picolinate	Soluble chromium	Supplement	Improves insulin sensitivity	*	-tive	Yes
Ginkgo biloba <i>EGB761</i>	Flavonoid, terpenes	Extract from maidenhair	Stress reduction, prevents oedema	—	—	Yes
Grapeseed extract	Bioflavonoids	Extract from seeds	Antioxidant; Benefits circulation.	—	—	No
Soy lecithin	Phospholipid	Soy beans	Increases fat transport	*	—	No
Horsechestnut <i>Escin triterpenoids</i>	Saponins	Seeds, flowers and bark of tree	Antioxidant. Benefits circulation by decreasing oedema; Increased 'flushing'	—	—	No
Dried sweet clover Increases circulation	Isoflavine	Extract from plant	Oestrogenic properties;	—	—	No
Inositol	Vitamin-like compound	Component of liver/muscle	Prevents fat accumulation in liver.	*	—	No
St John's Wort <i>hypericum perforatum</i>	Not clear	Perennial herb	Anti-depressant.	—	—	Yes

1. x= theory is inaccurate/disproved; - = no evidence supporting theoretical rationale in weight loss *.-*** = level of evidence supporting rationale in weight loss
2. -tive = scientific evidence against claims; - = no scientific evidence supporting claims; *.-*** = level of evidence supporting claims (in humans).

PROFESSOR TRIM'S TABLE TALK

The Alternative to Diets — Foods to Eat or Avoid

As seen throughout this newsletter, diets have only limited success on weight loss. A lifetime change in eating patterns is likely to have more success. But what does this imply? The following list shows foods that should be avoided, reduced or increased in such an eating plan, based on their energy-density and hence potential fattening — or slimming — effects.

Avoid:

- Spreads (butter, margarine); cooking oil
- Full-cream dairy products (milk, ice-cream etc); coconut oil; ghee
- Processed meats (salami, devon, sausages etc)
- Cakes, biscuits, pastries, pies, muffins
- Skin on chicken, duck and other birds
- Fried foods and take-aways
- Fatty (white) bits on meat (chops, steak etc).
- Fruit juice
- Non-diet soft drinks and cordials
- Labelled foods with an oil or fat listed in the first three ingredients
- Potato crisps, salted peanuts. Other packaged snack foods.
- Labelled foods with >10g/fat per 100g
- Labelled foods with >3kcal/g (12kJ/g) ie. low fat but high energy-dense breakfast cereals



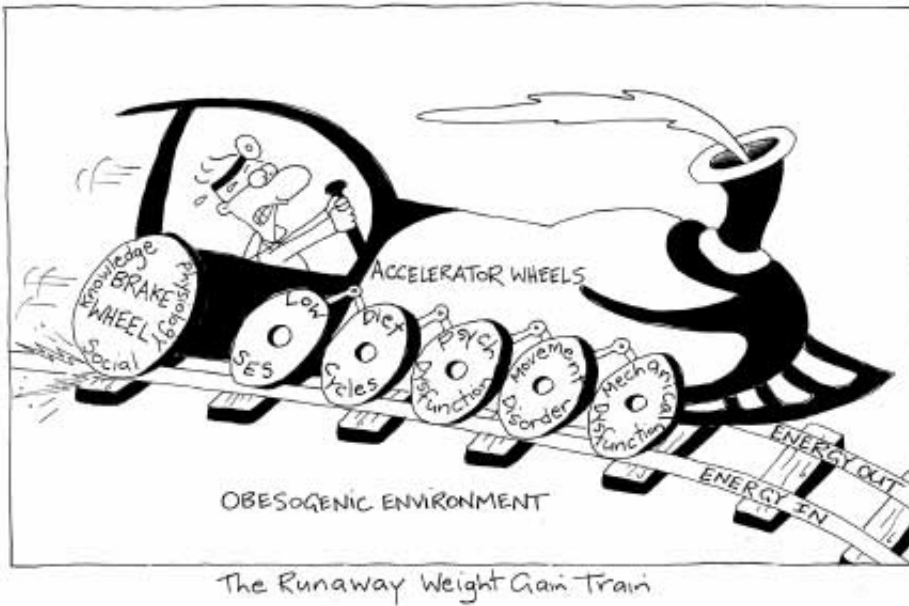
Go light on:

- All cheeses (including those labelled 'Lite' or 'x% less fat')
- Low fat ice-creams, gelato, fruit-ice mixes
- Avocados, coconut
- Fruit pies; filo pastry; fruit muffins
- Jelly babies; jelly sweets; jelly beans etc.
- Olive oil, Canola oil

Increase or maintain:

- Fruit (all types), fruit jams
- Vegetables (all types — but go easy on potatoes)
- Wholegrain bread, rice (Doongara, Basmati), pasta
- Beans (all types), lentils, peas
- Cereal grains, noodles
- Fish and all other seafood (not fried), sushi, sashimi
- Soy products (low fat)
- Lean meats (such as chicken, lamb, beef, venison, kangaroo etc).
- Unsalted mixed nuts (~40g/d only)
- Water, low cal soft drinks, tea/coffee
- Low fat yoghurt

Aboard the Runaway Weight Gain Train



there are other factors, which guarantee a gathering momentum.

Of course there are brakes; in this case, physiological adjustment, knowledge and social stigma, as shown by the wheel on the back of the train. But these are weak in the modern environment and have limited influence on the increasingly downward slope of easy to obtain, high energy-dense foods and energy-saving technology.

More importantly, there are accelerating forces in the form of vicious cycles, signified by the wheels at the front of the train. Low socio-economic status for example, leads to a lack of work opportunities, decreased activity, depression, and ultimately weight gain. Diet cycles begin with a reduction of energy which can't be maintained, and which results in a long-term weight gain. Movement inertia comes from being overweight, which causes inactivity and ultimately increased weight and mechanical dysfunctions, such as sore knees, sore back etc. have a similar effect.

Given an obesogenic slope, weak brakes and driving accelerating wheels, it's not surprising that the weight loss train has a driving momentum, which is going to be hard enough to slow down, let alone stop, within the course of a generation or two.

Why is weight control so hard? This is the question being asked around the world as the obesity pandemic continues unabated. The answer should be that it's not hard; people do it every day. The basic causes of weight gain are also well known (too much food, too little activity), and so should be easy to correct.

But the simplicity of this belies the complexity of the interaction between genetics, biology, the environment and a well-developed evolutionary system to ensure survival.

In order to explain this in more detail, your Professor has linked with noted Deakin University researcher Professor Boyd Swinburn, to produce an analogy based on a runaway train (shown in figure 1), where the momentum of the train reflects the propensity for weight gain in the population. The momentum is influenced at the outset by the slope of the track, symbolising the modern obesogenic environment. Without any assistance, this would probably be sufficient to ensure a steady weight gain in most modern populations. However,

Chemists get in on the weight loss act

Although weight control programs are now widespread and varied, one professional group that has played little part in treatment to date is the Nation's Pharmacists. This is about to change with both the Pharmacy Guild and Pharmacy Society now looking to develop specialist weight control centres in pharmacies around the country.

Not to be left in the lurch, a *Professor Trim Weight Loss Section* is being trialed in a novel *Weight Centre* in one NSW Pharmacy with a view to offering computerized customer testing, as well as sale of ethical weight loss products. Pharmacy staff are trained to a minimal level to be able to consult customers on key issues of diet and exercise, and training is intended to be expanded via CD. The *Waistline* newsletter will also be available for Chemists to distribute at no cost to customers under their own letterhead and access to the PT website will enable cross measurement in pharmacies throughout Australia.



The Professor's Paradox

From the 'What the ... is going on' department, comes the following bits of apparently paradoxical research produced in 2003.

1. Low carbohydrate diets better than low fat

A small group of women randomised to eat a low-carbohydrate diet lost more weight than a similar group on a calorie-restricted low-fat diet, even though the calorie load was similar, according to results published in the *Journal of Clinical Endocrinology and Metabolism* (2003;88:1617-1623). Weight loss in the low carb group averaged 8.5kg over 6 months compared with 3.9kg in the low fat group.

Mean levels of blood pressure, lipids, fasting glucose, and insulin were within normal ranges in both groups at baseline and improved during the study, but there were no differences between the two groups at three or six months.

The researchers claimed that: "Based on these data, a very low carbohydrate diet is more effective than a low fat diet for short-term weight loss and, over 6 months, is not associated with deleterious effects on important cardiovascular risk factors in healthy women."

2. No evidence for the benefits of low carb diets

A review of low carbohydrate diets published in *The Journal of the American Medical Association* (2003;289:1837-1850) shows that there is not enough evidence to support or refute the concept thus far. The bottom line appears to be that 'a calorie is a calorie' no matter where it comes from.

This is based on studies of low-carbohydrate diets (<60g/d or <20g/d) published between 1966 and 2003. The authors identified 107 studies with data on over 3,000 people. Weight loss was

associated with longer diet duration and restriction of calories, but not with reduced carbohydrate content. The authors claimed that given the limited evidence in this review, when lower-carbohydrate diets result in weight loss, it is probably due to the restriction of calories and longer duration than carbohydrate intake *per se*.

3. Four popular diets equally effective for weight loss

In a randomized study comparing four popular diets over a year, all diets demonstrated efficacy for weight loss according to results presented at the 2003 American Heart Association (AHA) annual conference.

Patients were evenly assigned to the Atkins (low carbohydrates), Zone (moderate carbohydrates), Ornish (low-fat vegetarian), or Weight Watchers (moderate fat) diet, and told to follow the diet "to the best of their ability for two months". They then were given diet cookbooks and assigned to small group classes for diet education. For the remaining 10 months, the volunteers were told to follow their assigned diet "to whatever extent they wanted." The study did not evaluate other lifestyle modifications such as meditation or exercise. The drop-out rate for each diet was 22% at two months and by 12 months half of the volunteers assigned to Atkins or Ornish had dropped out, as had 35% of those assigned to Weight Watchers or Zone diets. This suggests that no 'diet' is easy to follow over the long-term.

For those who stuck with the diet for 12 months, reductions in weight for Atkins were 3.9% (52% completion),

6.2% for Ornish (50% completion), 4.5% for Weight Watchers (65% completion), and 4.6% for Zone (65% completion). All diets resulted in significant weight loss and none differed from each other.

4. Making sense of it all

Expert A: "It doesn't make any difference if you lose weight with high-carbohydrate or low-carbohydrate diets," says Dr Gary Foster, clinical director of the Weight and Eating Disorders Program at the University of Pennsylvania School of Medicine, who did a recent study comparing the Atkins diet to traditional low-fat diets. "Diets work if you use them. They all work probably by the same mechanism, which is that they get people to eat fewer calories".

Expert B: "The broader issue of whether a unique diet exists that will produce long-term weight loss has yet to be evaluated," writes Dr George Bray, obesity specialist from Louisiana University in an editorial in the *JAMA*. "Although the truth of 'a calorie is a calorie' has been reaffirmed (by this review), the question of whether patients can adhere more easily to one type of diet or another remains to be answered."

Expert C, D, E....: "If I've told you once...." says Professor Taught N. Trim of Gutengorge University. "Ultimately it comes down to lunch. Some 'diets' may have more impact on lunch (like leaving you with enough energy to exercise), and be easier to maintain over the long-term, but calories (or kilojoules), are still the issue, and too much lunch (+ dinner, breakfast or snacks) is how this happens — nothing magical about that!"

Losing it with the Professor

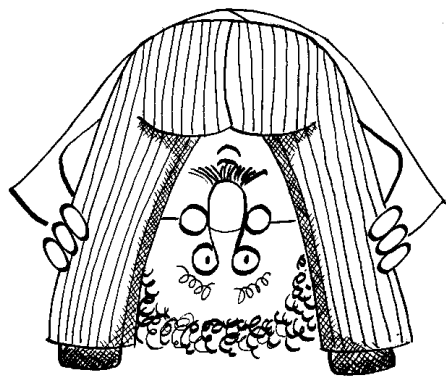
Professor Trim's Medically Supervised Weight Loss Programs offer a range of alternatives for effective weight loss. Programs include:

- *Quick Start* books (for families, diabetics or new mothers)
- Packaged programs (*Becoming Slimmer* for women; *Becoming GutLess* for men) to be carried out with your PT doctor.

Programs include CDs, workbooks, textbook, pedometer, connections to the Internet and other materials including an annual subscription to this newsletter (*Professor Trim's Waistline*).

For more information and pricing check www.professortrim.com or phone (02) 9977 7753.

PROFESSOR TRIM'S REAR END



Micro-waving and anti-oxidant losses in vegetables

Research examining the effects of cooking on anti-oxidant levels of broccoli has found that micro-waving destroys the most antioxidants, followed by boiling. Steaming was found to retain the highest level of antioxidants. This raises questions as to whether micro-waving destroys anti-oxidants in all vegetables, or whether this is a one-off.

While all cooking destroys vitamins and minerals (these can be lost in the water of boiled vegetables for example), micro-waving was always thought to be most vitamin and mineral friendly. This was probably based on the notion that the longer a food is cooked, the greater the chance of nutrient losses from that food. More work now needs to be done to see if other foods are affected in the same way as broccoli.

For reference:

F Vallejo, FA Tomás-Barberán, C García-Viguera Phenolic compound contents in edible parts of broccoli inflorescences after domestic cooking *Journal of the Science of Food and Agriculture*, 2003; 83 (14): 1511 – 1516

Food for thought — and cholesterol lowering

State of the art in lowering cholesterol levels in the blood are the statin drugs developed over the last decade. So effective are they that medical groups now suggest that statins may be even more effective if provided in low doses as preventive treatment for people with high heart disease risk.

But a group of Canadian researchers have now challenged this by comparing a standard low fat diet, the same diet plus a statin drug ('Lovastatin'), and a diet high in a portfolio of foods types thought to lower cholesterol. There were

four main editions to the low fat diet — soy products, almonds (see story below), plant sterol margarines and viscous fibre from some fruits (eg. apricots). No control was kept over calorie intake, but those on the dietary portfolio were given a specified amount of each product to eat (plant sterols 1g/1000kcal/d; soy 21.4g/1000kcal/d; viscous fibre 9.8g/1000kcal/d; almonds 14g/1000kcal/d).

The dietary foods group had a reduction in LDL cholesterol greater than that of the low fat group and equal to that of the statin group. They also had a similar reduction in a protein called CRP, which is known to be a risk factor for heart disease and type 2 diabetes. This suggests that the effects of the statin drug can be mimicked with a well selected diet plan, an alternative which may be pleasing to those who are concerned about the side effects of medication.

For reference:

Jenkins and others. Effects of a Dietary Portfolio of Cholesterol-Lowering Foods vs Lovastatin on Serum Lipids and C-Reactive Protein. *Journal of the American Medical Association*, 2003; 290:502-510.

Almonds could help blood fats as well as body weight

While peanuts have been generally off the menu for anyone wanting to lose weight, new research with almonds, has shown that this type of nut at least, may help people with poor blood fats.

Researchers at Loma Linda University in California compared blood lipid levels of a group of men given a low fat diet, a low almond diet and a high almond diet, all with the same total calorie level, over 4 week periods for each. Surprisingly, cholesterol levels were inversely related to the proportion of fat in the diet from almonds.

Most other components of blood fats, including LDL and HDL forms of cholesterol were also improved on the almond diet.

In another study from California, almonds were shown to reduce body weight when included as part of a low calorie diet. Weight loss was compared in two groups — one with a high fat content (39%) from around 90g of almonds a day and the other from high complex carbohydrate (18% fat). The almond group lost more weight (18% vs 11% over 6 months). Because both diets were of the same calorie level, this suggests that almonds may increase

activity levels because they make the diet more palatable, although this still has to be verified.

For reference:

Wien MA and others. Almonds vs complex carbohydrates in a weight reduction program. *International Journal of Obesity*, 2003 Nov;27(11):1365-72.

Portion size and energy density the two key factors in the fattening effect of meals

Despite the popularity of modern fad diet programs, research shows that it is the volume of food intake that is most important in weight gain. Volume is influenced primarily by energy density and portion size, and these two factors were recently put to the test by Dr Barbara Rolls and her colleagues at the University of Pennsylvania in the US.

The researchers examined the effect of a first-course salad on meal intake. Thirty-three women went to the laboratory once a week for 7 weeks to eat a lunch that consisted of a salad, followed 20 minutes later by a pasta meal. They were to eat all of the salad and as much or as little of the pasta meal as they chose. The salads had 3 different calorie densities (0.33, 0.76, and 1.33 kcal/g), and each version was served in 2 portion sizes (150 or 300 g).

Having a small, energy-dense salad before a meal increased overall intake by 9%, and consuming the larger portion of the salad increased total intake by 17%, compared with having no first course. Eating the larger portion of the low energy-density salad before the meal led to a 10% decrease in meal energy intake. These results indicate that eating a large portion of a food low in caloric density as a first course can enhance satiety and reduce caloric intake.

In practical terms this suggests the following for weight loss:

- Eat a small low-calorie salad or vegetable-based soup prior to your meal
- Slow your rate of eating
- Select or modify recipes to make them lower in total calories (calorie density)
- When eating out, select an appetizer portion or share an entree with a friend

For reference:

Rolls EA, Roe LS, Rolls BJ. Sensory-specific satiety is affected more by volume than by energy content of a liquid food. *Physiology and Behaviour*, 2003 Apr;78(4-5):593-600.