PROFESSOR TRIM'S
WAISTLINE

THE PROFESSOR'S FEATURES

VOLUME 4 NO 2 WINTER 2005

Alcohol and weight loss – does it help or hinder?

It might be wishful thinking, but new findings suggest the former.

When it comes to watching calories, alcohol would seem to be a 'no-brainer' for anyone trying to lose weight. In pure physical terms, 1 gm has the equivalent of 7 Calories, which is second only to fat (9 Cals/g) in energy density amongst the major nutrients.

But physics and biology are two different sciences. What the body does with alcohol (and other foods) suggests that a simple calorie calculation may prove misleading. As reported in the last edition of the *Waistline*, people who drink small amounts, but frequently, seem to be lighter than those who drink the same amount, but more infrequently. The type of alcohol also seems to be less important than was once thought: white wine and even beer, have similar health benefits to red wine.

The benefits of imbibing – but not too much!

Since our last dip into the alcoholic vat, even more reports have been published testifying to its benefits, this time in relation to risks of type 2 diabetes. German researchers have found an almost perfect U-shaped curve that describes the risk of contracting diabetes with different levels of alcohol consumption. Risk drops by almost 30% in those who drink 12-24 grams of alcohol per day (about 1-2 standard 10oz beers or 2 x 4oz glasses of wine) compared with non-drinkers. The risk starts to rise again with consumption over this level, and in heavy drinkers (ie. those consuming more than 48 grams a day) is as great as for non-drinkers.

All of this points to a much stronger association between alcohol, health and even body weight, than most other individual foods (with the exception of fruit and vegetables). So what the heck is going on?

Alcohol and health

Early suggestions about the benefits of moderate alcohol consumption on health were based around stress reduction. Although not clearly proven, stress has always been thought to be a risk factor for problems like heart disease. If alcohol reduces stress, heart disease risk may also decrease.

But while this may be true, recent research suggests there may be a more physical, rather than psychological, reason. Alcohol contains anti-oxidant substances, the type of which depends on the source of alcohol. Wine is known to be rich in polyphenols, one source of anti-oxidants, while the hops in beer contain isolhumolones, which are another.

So the connection with health benefits may not be so surprising. But what about the connection with body weight? After all, alcohol does contain calories (energy), and this is where body fat comes from.

Alcohol and weight

A cursory look at how alcohol is metabolised in the body may help provide some answers. It's well known that alcohol is 'toxic', or poisonous and hence the body needs to metabolise it as soon as possible. There are three metabolic pathways by which this is done, but none result in the conversion of alcohol calories to fat. Generally, these calories are 'burned off' as 'the first cab off the rank' when it comes to using energy. True, if there is an excess of calories from other foods, these will be 'spared', and stored as fat so the alcohol can be disposed of. But if the intake of other energy is not excessive, increased fat stores are not likely to be the answer.

It's for this reason that true alcoholics are rarely fat (although they do dispose of their excess in an extremely efficient way) – although that's not to say they don't have other problems (for example, liver disease).

And what about the calories in other parts of alcoholic drinks eg. hops, grapes etc? Would this make a case for a low carbohydrate beer for weight loss for example? The answer seems to be in the negative, because on fermentation, this energy tends to behave more like alcohol than carbohydrate.

Implications:

Does this mean alcohol is a non-issue for weight loss? Not necessarily. It all comes down to what else you eat and how active you are. The rules may be similar, but the outcome is different.

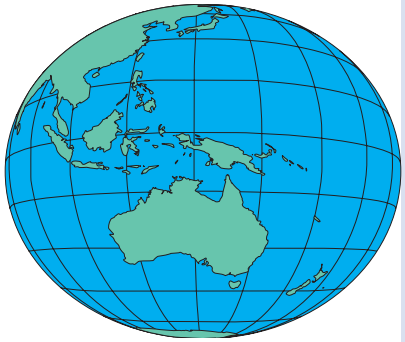
For reference:

Koppes, LL and others, Moderate Alcohol Consumption Lowers the Risk of Type 2 Diabetes: A meta-analysis of prospective observational studies. *Diabetes Care*, 2005;28(3):719-25

in this issue

Why has the world become so fat?

The answer may seem simple. But it's actually quite complicated.



Why has the world become so fat? Everyone seems to have an answer and that answer is usually simple: we eat too much – or we don't do enough exercise.

In reality, it's much more complicated than that. Certainly changes in society have led to changes in food intake and physical activity levels. But what are these changes and how much have they affected us? Two recent analyses published in the *Annual Review of Public Health* provide some clues. Here's an abbreviated version:

Modern causes of obesity

1. There has been an increase in the relative price of food. If you didn't know it, food is now cheaper than it has been in the past, with a 14% decrease in real prices from 1980-2000.

2. There has been a decrease in the relative price of 'energy-dense foods'. These are foods that are high in calories per gram, and are hence most fattening. Advances in food technology have meant that from 1980-2000, the 'real' price of sugars has increased by 46%, fats and oils by 25% and carbonated soft drinks by 20%. In contrast, the real price of low energy-dense foods like fruits and vegetables has increased by 118%, fish by 77% and dairy products by 76%.

3. There has been an increase in total caloric intake. While this seemed to be going down from around the turn of the 20th century to 1985, it has now increased by around 10% from 1985-2000. This results from increases in consumption of:

- soft drinks (51%)
- fruit juice (40%)
- snacking (~76% of increase in the increase in calories)
- calories consumed in snacks (26% increase in adults since 1980)

There have also been increases in 'marginal acts pricing' (super-sizing), and increased serving sizes of meals eaten away from home

4. There has been an increase in real wages (of ie.5% from1982-2000 in the US). This enables us to buy more of the increasingly cheaper fatty foods.

5. There has been an increase in females in the workforce, which may explain the rise in meals eaten away from home from 18-32% of calories between 1978 and 1996 (Now's the time to take to the ovens guys!).

6. There has been an increase in total screen viewing time (not just TV, but computers, video games etc).

7. There has been increased TV advertising of snack foods (which are quite often eaten when in front of a TV or computer screen).

8. There have been changes in activity at work (ie. in 1950, 30% more people were in active, rather than passive jobs. In 2,000 twice as many were in less active compared to high active occupations).

9. There have been decreases in active transport. In fact the number of vehicle miles travelled has doubled since the 1960s.

10. There has been increased urban sprawl. The numbers of people living in the suburbs has doubled from 1950-2000, and it's well known that suburban living involves more use of a vehicle and less active transport.

Given these changes, there's little wonder we're carrying the extra energy gained and not expended in the form of an expanded wasitline. Whether education is enough to reverse this trend is still not clear.

For reference:
Ross C. Brownson,TeganK. Boehmer, and Douglas A. Luke *Annual Review of Public Health* 2005. 26:421–43. Eric A. Finkelstein,1 Christopher J. Ruhm,2 and Katherine M. Kosa1 *Annual Review of Public Health* 2005. 26:239–57

...and more to the point: How did I get to this?

From brawn to yawn – while you were diverted

John Lennon once said that "...fat is what happens while you're busy making other plans" (or something to that effect).

If you're asking yourself how could your body have changed from a lean, mean fighting machine, to a large blob of semi-fluid adipose tissue between mod-life and mid-life, here's your answer: You were making other plans. And the modern western environment played havoc on your body.

If further evidence of this is needed, look back over the years. Human beings have, since about the time they became upright, toiled physically to get a meal on the table (or rock) at the end of the day. Sometimes this involved hunting, sometimes fishing and sometimes hand-to-hand combat.

All this changed about the time of the industrial revolution, when humans began to use machines to do the work they normally did. This extended to growing, harvesting and pre-paring food. Not only was a satisfying meal now available at the end of the day, but there was also 'lunch'. And breakfast. And snacks with coffee and scones. And all of this could be purchased without so much as an 'erg' of effort.

(continued page eight)

Behavioural tips for weight loss

Based on years – ne decades – of experience, the Professor offers some of his best short tips to those ailing from trunkal hyper-adiposity (eg. a big gut).[1]

Recognise that there are no easy 'quick fixes'.

Putting on and taking off weight is a gradual thing. Even under the most extreme conditions there's only so much that can be gained or lost in a set time period. Changes in the body's metabolism and other adaptive factors help to guarantee that this is the case, otherwise human beings wouldn't have survived the feasts and famines of the past.

Amongst commercial weight control programs there's almost a competition to see who can advertise the greatest weight loss in the shortest period of time. This approach is highly unethical and ultimately could lead to greater weight gains than losses – which, of course, satisfies many commercial organisations because it guarantees a continual clientele.

Weight losses of more than 0.5 – 1kg per week are now regarded as potentially counter-productive. Any suggestion that there are 'quick, easy fixes' that can ensure these types of losses over the long term should be dismissed for their potential ill effects.

Don't believe yourself – particularly if you're the 'diet resistant' type.

'Diet resistance' is a term given to people who seem to never lose weight, even as a response to reduced food intake. It's a common phenomenon often put down to 'gland problems' or 'genetics'.

Diet resisters have usually been taken at their word. They *say* they don't eat much, and they *do* exercise. But now evidence indicates that both not only over-weight, but even normal weight people tend to under-estimate the amount of food they eat and over-estimate the amount of exercise they do. This could help explain why those who don't think they can lose weight, really don't seem to be able to.

Working with a group of obese individuals in New York, scientists used a radio-active monitoring technique to accurately estimate the amount of energy taken in (food) and burned up (exercise), over a two week period. All of those measured had been on a self reported food intake of less than 1200 kilo calories per day over the previous 6 months but had failed to lose any weight.

Compared with their actual energy use measured radio-actively, 'diet resistant' overweight individuals under-estimate their daily food intake by around 30% and over-estimate the amount of energy they burn up each day by almost 40%.

The implications of this are that the apparently 'diet resistant' need to pay particular care in estimating food and exercise levels. If possible, more accurate techniques of estimation such as a daily dietary diary and exercise log or pedometer for measuring exercise output should be used.

Make sure what you think about food, is actually true.

Food is not only important for its energy density. The taste, or even *predicted* taste of a food, can encourage greater over-eating. Hence, whether a person *thinks* a food is likely to be filling or not may be important in determining just how much he or she eats.

This notion was recently put to the test by psychologists at Leeds University in the UK. A number of people were asked to rate how tasty and filling they thought were a number of different types of foods, particularly snack foods. They were then given these to eat, and their food intake for the rest of the day monitored to see if their ratings of 'fillingness' conformed to the ability of the food to satisfy hunger.

"...whether a person thinks a food is likely to be filling or not may be important in determining just how much he or she eats".

High sweet and high fat snack foods (e.g. chocolate, pastries) were generally thought to be highly filling. On the other hand they led to almost double the total daily energy consumption of other lower sweet or fat foods. This suggests that some over-eating might occur because the eye deceives the stomach. With fattening food, not all is as it may look.

Go mild with your energy restriction.

There's been a lot of research carried out in recent years on the weight loss effects of very low calorie diets (i.e. less than 1000 kcals) with very big people. In general, the results have been disappointing, with later weight gain often making up for the small losses that are made. Ironically, there's been little research using mild energy restriction in individuals who are not drastically overweight.

This was the basis of some recent research carried out in the Netherlands. Nutrition scientists reduced the total energy input in a small group of men by 20% after determining how much food was needed daily to keep them at a stable weight. They then compared their weight loss over a 10 week period with a control group of men who kept eating the amount of food required to keep them stable.

The reduction in food in the test group resulted in an average food intake of around 2200kcals/day - a not insubstantial amount to keep going on. Still, the men lost an average of 7.4kg, over 83% of which was body fat. Perhaps more importantly, there was no plateauing out of weight loss over the 10 weeks of study. The implications are that small changes in food intake are likely to be much better for fat loss than drastic changes over the long term, even though your head may tell you otherwise.

Sort out your emotional problems before you try to sort out your weight.

Obesity and overweight can result from emotional disturbances such as stress, grief or bereavement. These situations can often lead to 'comfort eating' and inactivity. But taking these crutches away is likely only to make the ☛

situation worse: the chances of failure are increased and the prospects for future weight loss diminished.

Instead of trying to 'hold onto your hat in a cyclone', it may be better to deal with the issues independently. The primary cause of the problem is likely to be the emotional disturbance. Hence this should be dealt with through counselling, social networks or psychological assistance before any concerted attempt is made to do anything about body weight. Become relaxed in your life and you'll become relaxed about your weight.

Watch what you over-eat when you think you're under-eating.

Low fat and low calorie foods are now relatively easy to come by. But some research in the US has shown that these might have an unexpected effect on total food intake.

Studying women who were given a pre-load of food (that is, the equivalent of a first course), scientists found that the amount of food eaten later in the meal depended on whether the pre-load was labelled high-fat or low-fat – irrespective of whether the label was accurate. Those eating what they thought was a low-fat pre-load tended to eat more at the main meal than those who thought they were eating a high fat meal, or had no information about the fat content.

"...small changes in food intake are likely to be much better for fat loss than drastic changes over the long term".

Unexpectedly, there was no difference in the amount of food eaten after the pre-load conditions in women labelled restrained, or non-restrained eaters. The indications are that messages about the content of a food can influence the actual energy intake of that food – at least in some women.

Best behavioural techniques.

Modern psychological practice has shown the best technieques for long term weight loss. According to Professor John Foreyt from Baylor College Texas, evidence from all the behavioural research currently available suggests that best success in weight control programs will come from the following 8 points:

1. attempting to change negative feelings, particularly depression and anxiety
2. focusing on the pressure of social situations such as travelling and entertaining.
3. having clients self monitor their behaviours
4. increasing internal motivation
5. developing a network of social support
6. carrying out regular physical activity
7. setting goals at very gradual, rather than large, sudden changes.
8. setting realistic goals

[1] These have previously been published in *Trim for Life* by Egger G., Allen and Unwin, Sydney, 2001

The dairy products story – an update

For some time now, a small group of researchers – largely supported by the dairy industry – have been pushing findings suggesting that dairy products may have benefits for weight loss. The mechanisms for this have not been clear, but because natural dairy products are high in fat, sceptics have assumed that there would be little benefit in this because of the added fat calories.

Nutritional components in dairy products that may have benefit for weight loss however, are protein and calcium. In the case of protein, this could be because of the added satiety from fast acting amino acids in milk protein that leads to reduced total food intake. With calcium, the mechanism is unclear.

Knowing all this, a team of nutritional researchers at the Department of Human Nutrition at the Royal Veterinary Academy in Denmark, set out to examine whether calcium or protein, or the combination of both, should aid weight loss, and what would be the reasons for this. They examined three different diets using low fat milk; low calcium-normal protein, high calcium-normal protein and high calcium-high protein, all with the same total calorie intake and all given to the same people over 2 separate weeks, with a 'wash-out' period in between.

Examining possible mechanisms, the researchers found a significantly greater energy loss in faecal matter with the high calcium and normal protein diet. Over the short term, this amounted to around 350kJ (83kcals) a day, which could account for up to 6 kilos of weight loss in a year.

Why higher calcium intake has an effect on faecal loss is not clear. The fact that a moderate protein level is also required makes dairy products of potential importance because of the combination of these nutrients, and the possibility of using low fat varieties.

Take home message:

Low fat dairy products may be useful for weight loss – but for definitive proof watch this space.

For reference:

Jacobsen R and others. Effect of short-term high dietary calcium intake on 24-h energy expenditure, fat oxidation, and fecal fat excretion. *International Journal of Obesity*, 2005;Jan 18.

TRIM'S TRIVIA

Coca-Cola launches cholesterol-lowering orange juice

Coca-Cola has received approval from UK food authorities to market Europe's first cholesterol-lowering juice. According to Coca-Cola researchers, plant sterols are just as effective in reducing LDL-cholesterol when added to orange juice, than when added to margarines and other fats. Coca-Cola launched a cholesterol-lowering orange juice in the United States in 2003. It contains the plant sterol ingredient CoroWise. In Europe, plant sterols have not previously been added to juices, thus Coca-Cola was required to gain novel foods approval to move ahead with their new product.

The UK's Advisory Committee on Novel Foods and Processes said that it had issued a positive opinion on the application. If no objections are received (based on public consultation) the product will be approved for the market.

For reference:
http://nutraingredients.com.news/

Can the oils in fish help weight loss?

For some time it's been thought that the omega-3 oils available in fish and other seafoods, may function differently in the body to other oils like saturated and unsaturated fats. This has even extended to their potential benefits for weight loss. Now, emerging research from a top omega-3 supplier, has identified a potential mechanism for the weight reduction effect of fish-derived omega-3 fatty acids in mice. They showed that a 60% omega-3 concentrate increased fat 'burning' by activating genes that break down fat in the 'engine-room' or mitochondria of body cells. The concentrate caused weight reduction, reduced the number of fat cells, and also appeared to stop the mice from gaining weight when given free access to food. According to the company's director of research and development, "genes are constantly programmed to a situation of starvation and they need to be reprogrammed. Omega-3 fatty acids from seafood seem to do exactly that". Omega-3s could be at an advantage over some other weight loss ingredients because of their long, safe history of therapeutic use. A human trial is underway in the Czech Republic and may well confirm these results in the coming months.

For reference:
http://nutraingredients.com/news/

We're getting taller …but also fatter

Americans are now 2% taller and 16 % fatter than they were 40 years ago, according to new research released by the US Government. Researchers in other western countries say that this is unlikely to be different, although the data supporting this are more difficult to find.

In absolute figures, US adults are around 2.5cm taller, but 11.5kg heavier than they were in 1960. That country's expanding waistline has been well documented, although this report is the first to quantify it.

The reasons are no surprise: more fast food, more television and less walking around the neighbourhood, to name a few. Earlier this year, researchers reported that obesity fuelled by poor diet and lack of activity threatens to overtake tobacco use as the leading preventable cause of death.

The changes recorded in the US show that while men increased their average height by 2% from 173cm to 176.5cm and women by 1.5% from 160cm to 162.5cm, the average weight increase for men was 15% from 75.5kg to 86.8kg and for women 17 % from 63.5kg to 74.5kg.

The weight gain trend is typically reported as what portion of all people are overweight. These numbers are also alarming. In 1999-2002, 31 per cent of adults had a BMI of 30 or over, considered obese. That's more than double the rate in the early 1960s.

The report, *Mean Body Weight, Height and Body Mass Index*, United States, 1960-2002, was based on data from the National Health and Nutrition Examination Survey, which uses actual body measurements.

Green tea helps weight loss – in rats!

Amazing claims are made for different foods from time to time. So is the suggestion that green tea can cause weight loss yet another of these fanciful but fallacious notions? Japanese researchers from Kobe University think not (*Biofactors,* 2004;22(1-4):135-40). They found that green tea instead of drinking water in rats resulted in a decrease in body fat, which they explained by changes in the mechanisms of fat storage in body cells. Similar suggestions have been made for humans. However, about the best that can be positively said to this point is that green tea has anti-oxidant benefits that may be healthy. At least you don't have to avoid it for weight loss.

Adherence is the issue

The scarcity of information about the health effects of popular diets is an important public health concern. Some diet plans minimize carbohydrate intake without fat restriction (eg, Atkins diet), many modulate macronutrient balance and glycemic load (eg, Zone diet), and others restrict fat (eg, Ornish diet).

In a study carried out in Boston, 160 overweight or obese adults were randomized to either the Atkins, Zone, Weight Watchers (calorie restriction), or Ornish diet for over 12 months. All participants had known hypertension, dyslipidemia, or fasting hyperglycemia (*Journal of the American Medical Association*, 2005;293:43-53, 96-97).

After a year, the amount of weight loss was associated with the self-reported level of adherence to the diet, but not with diet type. Those on the strictest diets (Atkins and Ornish) tended to be less likely to adhere for the full 12 months and hence dropped out. For each diet, decreasing levels of total/HDL cholesterol, C-reactive protein, and insulin were significantly associated with weight loss, but there was no difference between diets. The implication is that any restriction of caloric volume can work for weight loss, but stricter versions can't be maintained.

TAUGHT N' TRIM

Walking downhill lowers blood sugar, uphill lowers cholesterol

The developing sophistication of exercise science is beginning to show the detailed benefits of different types of physical activity under different circumstances. Research indicates, for example, that while aerobic exercise can increase HDL (good) cholesterol, weight training might be more effective for lowering LDL (bad) cholesterol.

Now, research carried out in the Austrian Alps suggests that uphill and downhill walking may have different effects on components of blood chemistry. Presenting these results at the American Heart Association (AHA) 2004 Scientific Sessions, lead investigator Dr Heinz Drexel, from the Vorarlberg Institute for Vascular Investigation and Treatment in Feldkirch, Austria, showed that walking downhill helps lower blood sugars – an indicator for diabetes, whereas walking uphill helps lower triglycerides – an indicator for heart disease.

This comes from a randomized, crossover study in 45 healthy, sedentary, non-diabetic adults. The subjects volunteered to either two months of hiking up mountains (concentric exercise) or hiking down mountains (eccentric exercise). Participants were instructed to exercise at least three to five times a week. After two months, patients were crossed over to the other exercise program. When the volunteers hiked up the mountain, they took a cable car down the mountain, and when they hiked down, they took a cable car up. Cable car tickets were used to validate the study.

Dr. Drexel claimed that he and his colleagues expected that only the uphill exercise would show benefit, but the results were surprising in showing blood glucose benefits from downhill walking. LDL cholesterol was reduced in both cases by around 10%.

Take home message:
Walking uphill may be best for those with high blood fats; walking downhill for those with potential diabetes.

For reference:
Drexel H. Different forms of walking and effects on blood chemisty. *American Heart Association*, 2004 Scientific Sessions: Abstract 3826.

Coconuts and health

Reducing saturated fat for weight loss and health has been one of the few nutritional recommendations that has remained constant over the years. This mainly applies to animal meats. But there are two vegetable sources that also stand out – coconut and palm oil.

Islanders, in particular, have consumed coconuts, for centuries. So this would imply that traditional islanders would be fat and unhealthy. Yet this has not been the case. Only when they are introduced to modern food and technology have the obesity rates escalated dramatically in island populations. So what does this mean for coconut oils? Are they healthy, provided the lifestyle accompanying their use is not modern?

Coconuts and lifestyle

Recent research in Indonesia supports this in showing that, for people living a traditional lifestyle, coconut oils have less of an effect on heart disease risk than meats, sugar, eggs, protein and cholesterol, but more of an effect than soy products, rice and cereals. Researchers suggest that this may be because traditional island living involves a high level of activity, which has now been reduced due to the introduction of cars and motorised boats.

Take home message:
Coconut (fresh at least) may be healthy in the diet provided the rest of the lifestyle is healthy. For a weight loss program however – go light!

For reference:
Lipoeto et al. 2004. Dietary intake and the risk of coronary heart disease among the coconut-consuming Minangkabau in West Sumatra, Indonesia, *Asia Pacific Journal of Clinical Nutrition*. 2004; 13, (4) (December)

Eggs could be back on the menu

If nutrients take turns as favourites in the weight loss popularity stakes, the tables are about to be turned. From low fat and low carbohydrate, the emphasis is about to be put on higher amounts of protein in the weight loss diet, albeit in a more complicated form than just any protein.

The new findings follow a similar line to findings on carbohydrate. Early research on the benefits of carbohydrate gave way to a newer analysis, which showed that while carbohydrate that is quickly digested should be discouraged, carbos with a low glycaemic index (GI), or which are slowly digested, should be increased in the diet.

With protein, new findings are suggesting a renewed emphasis on quickly digested varieties, as measured by a high amino acid (AA) index. This is because quickly digested protein tends to increase satiety and lead to less total food intake over the course of a day.

High AA foods have yet to be identified in detail. However, early indications are that whey in milk may be one of these, thus explaining the value of dairy products in weight loss (see story this issue). Now a new study suggests that leucine, an amino acid (protein component) from eggs could also fit into this category. This is highest in the whites of the egg, which are also lower than the yokes in other forms of fats.

Researchers at the University of Illinois have found that eggs eaten early in the day eg. for breakfast, as part of a weight loss program can help to reduce the loss of lean body mass (muscle), while decreasing fat and stabilising blood sugars. Chief researcher Dr Don Layman, claims that both the quality of the protein and the time of the day it is eaten could be important in explaining the results. He suggests that protein at almost twice the level of that recommended by health authorities may be useful for weight loss.

One proviso in interpreting this however is that the research was sponsored by the Egg Board.

Take home message:
Eggs (in particular egg whites) could have benefit in a weight loss diet.

For reference:
Layman D. Report on the First International Scientific Symposium on Eggs and Human Health. *Journal of the American College of Nutrition*, December 2004.

TALKING TURKEY WITH TRIM

Q. I have reached a 'plateau' and don't seem to be able to get any more weight off. What can I do?

A. Plateaus are common and should be expected. Sometimes they last for a week or two, sometimes months. It's important to recognise however that these are completely normal. The main thing is not to become disillusioned and actually begin to put weight on again. To help break through a plateau you can do two things:

1. Honestly examine your food intake and exercise output
- has this changed in any way (even a slight one)?
- has your job changed so you may be moving less?
- are you under more or less stress?
- has a change of seasons affected you in some way?

2. Change either (a) exercise output or (b) calorie intake until the plateau is broken. As a plateau represents a period of adaptation of the body to a certain level of energy balance, breaking through this means changing – something!

Q. Are meal replacements (shakes) a good idea for weight loss?

A. They never used to be because (a) they were not nutritionally balanced and (b) if unsupervised they led to a quick weight regain after stopping use. The new formulation meal replacements, such as Optifast and KicStart, have been very well nutritionally balanced and hence overcome the first problem, in fact to the point where you can live off them solely. They are also useful for busy people or those who have limitations as a food preparer. It's still vital however to use meal replacements only with expert supervision. Not only can a good counsellor or program advise you how many and which meals to replace, but can help the important 're-feeding' stage once weight has been lost and a steady state is desired.

In the modern environment, it's likely that everyone will have to be on some meal replacements if they don't want to become obese in the future.

Q. My problem is snacking too much after dinner, especially when I'm at home. What can I do?

A. This is a common problem with men. It may have become a habit and is carried out automatically, or it may be a genuine increase in hunger relating to 'winding down' at the end of the day. If the problem is due to the former, the habit needs to be broken in the same way as other habits have been dealt with. If snacking is due to a genuine hunger, there are two possible solutions: (a) try exercising (e.g. walking, an exercise circuit, aerobics etc) at this time. Exercise increases blood glucose levels that act on the brain's 'appetstat' thereby reducing appetite;
(b) eat! But make sure this is in the form of low fat, high fibre foods (some suggestions are given in this issue)

Q. Is getting older naturally associated with getting softer (if you know what I mean), or is there something that can be done about this?

A. Let's not beat around the spuds and onions, the ailment to which you refer is erectile dysfunction (ED). It's a men's issue and hence we can talk about it man to man here.

ED generally comes with a range of baggage, sometimes – but not always – including decreased libido, premature ejaculation, or inability to ejaculate. There is an age-associated cause, but age does not necessarily mean that these things will happen as a matter of course. And while many females look forward to the development of this process as a way of getting a good night's sleep, it is often the cause of many worrying waking hours by their male partners.

Apart from age, and possibly medication (particularly the anti-depressant drugs), the most common cause of ED is related to lifestyle, excessive body fatness being the biggest problem. Why this is the case is the cause of much speculation. Suffice it to say that there is now good evidence to show that reversing the situation can reverse the problem in about 30% of cases. Researchers at the University of Naples, in Italy for example (a country made up of men eager to avoid this problem) have shown that reducing body weight by even 10% can reduce ED and get men back on the straight and narrow (or thick). Other health factors like blood fats and immune function were also improved with the weight loss (*Journal of the American Medical Association*, 2004;291(24):2978-84).

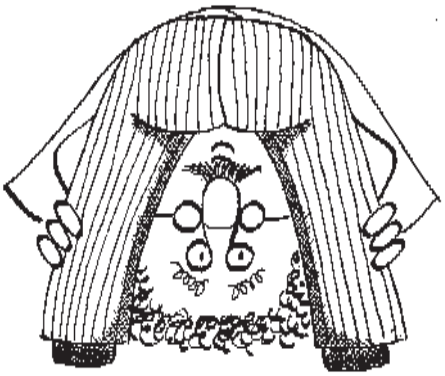
Q. As an expert in fat, I wondered if you could tell me why getting fatter doesn't improve one's nether regions, given the slang expression for getting an erection.

A. Whilst your logic would do credit to Socrates, your premise is as misguided as a deflating prosthesis. It's true that the slang term for an erection involves the word 'fat', which was probably derived from an earlier notion that fat is inexorably linked with size. In actuality however, the male organ is one of only about three parts of the body, which contains no adipose tissue – otherwise known as fat cells.

For further proof of this you might try the following test (although please do so in the privacy of your own home): Pinch your waist in line with the right nipple and the navel. Roll the pinched flesh around in your fingers and you will feel not only skin, but subcutaneous fat. Now do the same with the skin on the top of one eyelid. Here you'll find no fat, just skin.

There are two other parts of the body where this is also the case; the brain (usually difficult to pinch) and the male organ. Hence, the slang term to which you refer is considerably off the mark. There is therefore absolutely no benefit in getting fat to improve your manhood. Sorry about that. It's just the way it is.

PROFESSOR TRIM'S REAR END



A spoonful of vinegar helps the sugar go down

A study at Arizona State University shows 2 teaspoons of vinegar – even as part of a vinaigrette salad dressing - before a meal can help reduce the spike in blood sugars that come after a meal. In people with type 2 diabetes, these spikes can be excessive and can foster complications, including heart disease (*Diabetes Care* January, 2005). According to the authors of the study, the people with signs of future diabetes—pre-diabetic symptoms, which are often present in the overweight - reaped the biggest gains. Vinegar cut their blood-glucose rise in the first hour after a meal by about half, compared with readings after a placebo pre-meal drink.

A few tablespoons of vinegar therefore prior to a meal—such as part of an oil-and-vinegar salad dressing—could benefit people with diabetes or at high risk of developing the disease. A similar finding has been associated with foods pickled in vinegar, which makes them much more palatable and therefore more likely to be taken than straight vinegar.

When exercise is not just a measure of distance

Measuring food intake is hard enough. Foods have calories (or kilojoules) as an indication of their energy content, but what happens to these in the body is different to just counting how many there are in the food. Still total calories gives a fair indication and hence those watching their weight are advised to avoid foods classified as high in calories and go for those that are low.

When it comes to exercise the situation is even more complicated. Measuring how many calories are 'burned up' by doing an activity will depend on the size and efficiency of the person carrying out that activity. Walking a kilometre for example will use about 100kcals in an average 80kg person, but will use much more (although perhaps not twice as much) in someone twice that size. Still we talk about physical activity (PA) as requiring x amount of calories and popular magazines delight in showing that one piece of cheese cake will take two kilometres of walking etc. to metabolise.

The efficiency of doing an activity however is often overlooked in this equation.

Implications:

What you do is not necessarily how good it is for you – it's how you do it that matters.

For reference:

Hunter GR, Byrne NM. Physical activity and muscle function but not resting energy expenditure impact on weight gain. *Journal of Strength and Conditioning Research*, 2005;19(1):225-230

Walnuts lowering lipids in type 2 diabetes

Increased fish consumption has been demonstrated to improve cholesterol and lower the risk of developing type 2 diabetes. There has also been a suggestion that nuts, while not reducing body weight, might have the same effect.

Given this information, Australian researchers recently compared two low-fat diets with regular intake of fish with a low-fat diet that included both fish and walnuts in people with type 2 diabetes (*Diabetes Care*, December, 2004). Walnuts are distinguished from other nuts because of their higher polyunsaturated fat content than other nuts. 58 adults with type 2 diabetes were randomized to one of three dietary advice groups, each with 30% energy as fat: low fat, modified low fat, and modified low fat inclusive of 30 g of walnuts per day.

The walnut group had a greater increase in HDL ('good') cholesterol-to-total cholesterol ratio. They also had a 10% reduction in LDL ('bad') cholesterol, suggesting a positive effect of the walnuts, even though

Body weight, percent body fat, total antioxidant capacity, and HbA1c levels were all the same between groups. This suggests good health benefits of walnuts – but this might be best achieved after weight has been lost.

(continued from page four)

Putting a figure on inaction

Studies carried out by obesity researchers throughout the world have tried to quantify just how great this change has been.

The indications are that humans living in countries like the US and Australia around the turn of the 21st century were about 2/3 less active in their daily life than those living 200 years earlier.

It matters little that food intake per person (in total calories) may not have changed much in that time (see story p2 this issue). Even without this, the decrease in energy expenditure due to cars, washing machines, refrigerators, vacuum cleaners and other effort saving devices was enough to increase the fat load of the average citizen to a level not to be tampered with.

And what of the future? With advances in technology unlikely to decrease, most of the world's population will continue to slow down and eat up, pushing the level of corpulence to new highs. Those expected to suffer most are those using technology to devise a living – IT specialists, transport workers, office workers etc.

For those who have been 'busy making other plans', it's little wonder that fat has happened. The question now is whether something can be done about it. Of course if we thought that wasn't the case we wouldn't bother letting the Professor off the leash. But he will need some help.

For reference:

Vogels N and others. Estimating changes in daily physical activity levels over time: Implications for health interventions from a novel approach. *International Journal of Sports Medicine*, 2004; 25:607-610.