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Weight management

Facts and fallacies

There is a great deal of misunderstanding about the facts around weight loss among health professionals, and the general public. Possible reasons for this include lack of adequate education of doctors in this area, misreporting of health research in the popular media, and a need for further research in some areas. Training doctors in 'lifestyle medicine' may be helpful. Standards of evidence in media reports could be significantly improved.

Myths and misinformation about the best way(s) to lose weight are common. This is not surprising given the lack of a clear evidence base. Dedicated research into nutrition, exercise, sleep, weight management, and other health behaviours is relatively new and getting clear answers to research questions in this area can be difficult.[1] This is not helped by the proliferation of unvetted 'expert' claims in media reports and on internet sites. Proponents of new weight loss diets often claim that their diet is better than another. However it is likely that all diets are regulated by the common factor of energy volume, and a lifetime adherence to a restrictive diet (which is necessary for weight loss maintenance) is unrealistic for most people.

The study

As a rough guide to health knowledge in the community, a number of true/false statements on issues related to body weight management were given to two opportunistic samples attending health education sessions during 2008: 173 general practitioners and general practice registrars in medical education, and 129 truck drivers and tradesmen. We report here on the results of that questionnaire (*Table 1*). Many of these statements remain controversial. The authors have labelled them 'true' or 'false' based on the best available evidence. The statements found to cause most confusion are discussed with accompanying evidence.

The authors recognise that this study lacks the methodological rigor which would enable us to generalise our findings to the Australian GP population and the general Australian population. However, in both groups studied, our data suggest a need for better education around weight loss management, as well as further research into the accuracy of health 'facts' around which weight loss advice is given.

Nutrition statements

Fruit juice is about as fattening as beer (T)

In terms of energy content (calories/kilojoules), equivalent servings of fruit juice and beer are roughly similar. However, as alcohol cannot be stored in the body, and is never directly converted to fat, any fattening effect of alcohol is dependent on other factors, particularly accompanying energy intake.[2] The often quoted 'beer belly' is therefore really more of a 'beer plus food and drink', or 'beer plus total energy' belly. Fruit juice is therefore as potentially fattening as beer in equivalent amounts.

Humans need eight glasses of water per day (F)

Physiologist Dr Heinz Valtin attempted to track the basis of this belief, which he claims may be responsible for the current excessive intake of nutrient based (high energy) fluids in the modern diet.[3] Valtin showed fluid needs are dependent on a range of factors including age, gender, climate, activity level and disease state, and vary from 0.5 L/day (~3 glasses) to 4 L/day (~24 glasses). This is being reflected in new guidelines on fluid intake being proposed around the world.[4] The suggested eight 'glasses' a day, while widely quoted by health professionals and the public alike, is no more of a guide than six, or 10, or 12 glasses.

Dairy products can help weight loss (T)

The accuracy of this statement remains controversial. Because of the fat content of most natural dairy products, a common belief exists that all dairy products cause weight gain. However, recent research shows an inverse link, both epidemiologically and clinically, between (low fat) dairy intake and body weight. There are indications that certain dairy ingredients (eg. whey protein) and ingredient combinations (eg. protein/calcium) can have a positive effect on satiety, as well as increasing faecal energy loss, which may assist weight loss.[5]

Table 1. Proportion of incorrect answers for each question: tradesmen and doctors*

Question	Tradesmen			Doctors		
	% incorrect	95% CI	*p* value for Ho: % not = 50	% incorrect	95% CI	*p* value for Ho: % not = 50
Nutrition						
1. Fruit juice is about as fattening as beer (T)	38	30–47	0.015	20	15–27	<0.001
2. Humans need 8 glasses of water a day (F)	81	74–88	<0.001	79	73–85	<0.001
3. Peanuts are a healthy food (T)	43	35–52	0.119	42	35–50	0.042
4. Dairy products can help weight loss (T)	74	67–82	<0.001	73	67–80	<0.001
5. A low protein diet is best for weight loss (F)	33	25–43	0.001	10	7–16	<0.001
6. Fat people don't get more hungry than lean people (T)	55	47–64	0.228	62	56–70	<0.001
7. Chocolate is healthy provided it is 'dark' (F)	76	69–84	<0.001	45	38–53	0.171
8. Spicy foods make you eat more (F)	27	20–36	<0.001	32	28–40	<0.001
9. Vegetable juice is healthier than fruit juice (T)	27	21–36	<0.001	34	28–42	<0.001
10. Coffee causes cancer (F)	34	27–43	0.002	28	22–35	<0.001
Exercise						
1. Sit ups will not help reduce fat off the waist (T)	49	41–59	0.861	49	42–57	0.763
2. Exercise is better than dieting for weight loss (F)	77	70–84	<0.001	60	53–67	0.005
3. Swimming is better than walking for weight loss (F)	52	44–62	0.587	27	21–35	<0.001
4. Weight lifting is good for fat loss (T)	69	61–77	<0.001	62	55–70	<0.001
5. The best measure of body fat is body mass index (F)	77	70–84	<0.001	23	17–30	<0.001
6. You lose more weight doing exercise you are good at (F)	39	31–48	0.025	56	49–64	0.087
7. An obese person can be fit and healthy (T)	68	60–77	<0.001	47	41–55	0.505
8. You have to 'bust a gut' to lose a gut. (F)	34	27–43	0.002	33	27–41	<0.001
9. Sauna baths are good for fat loss (F)	25	19–34	<0.001	10	6–15	<0.001
10. Exercise can increase depression (F)	8	4–14	<0.001	2	1–6	<0.001

* *p* values correspond to the null hypothesis (Ho) that 50% of the wider group population know the correct answer

A low protein diet is best for weight loss (F)

While any 'diet' is dependent mainly on energy 'volume',6 and hence is, to a large extent, independent of specific nutrients beyond their energetic value, there are other advantages of some nutrients. Protein can have a satiating effect, particularly in comparison to high glycaemic index carbohydrate. In the context of the modern, high energy dense diet, a reasonable intake of protein is likely to be better for weight loss than a low protein diet. Current protein intake of around 13–15% of total energy is well below the estimated 25–30% often proposed for weight loss and a healthy diet.7

Fat people don't get more hungry than lean people (T)

While it is difficult to equate a subjective feeling such as hunger between individuals, indications from a range of sources suggest hunger is not a distinguishing factor in obesity.8 Much overeating has a psychological and environmental, rather than physiological basis, and hence there is little reason to suppose a general difference in hunger (in contrast to psychologically conditioned 'appetite') between individuals, based on their weight.

Chocolate is healthy provided it is 'dark' (F)

There has been over a decade of research on the health benefits of dark chocolate since the antioxidant effects of cocoa were discovered.[9] Cocoa is high in bitter tasting flavinoids, which are the prime source of such antioxidants, but which many chocolate manufacturers extract to improve taste. However, there are no labelling law requirements to inform the consumer of this. Sugar, which can attenuate the benefits of cocoa,[10] is also often added to improve palatability. Hence, while genuine dark chocolate has health benefits, chocolate that is simply labelled 'dark,' does not necessarily have these benefits.

Exercise

Exercise is better than dieting for weight loss (F)

It is easier to reduce energy intake by a given amount (eg. by 1000 kcals/day) than to increase energy expenditure by the same amount (the equivalent of walking an extra ~15 km/day). For this reason, restriction of food intake ('dieting') is more likely to be successful in the early stages of a weight loss program. However,

exercise is important in weight loss and it may be more important than dieting in the maintenance stage after effective weight loss.[11] Both psychological and physiological factors must be considered, in which case neither exercise or weight loss are 'better' than the other.

Swimming is better than walking for weight loss (F)

In general, the best exercises for weight loss are those that are weight bearing, such as walking or jogging.[12] Up to 30% less energy is used in weight supportive activities such as swimming or cycling, which can also able be carried out at a more leisurely rate. Because fat floats, an obese individual is likely to be even less energy taxed while swimming, particularly if an experienced swimmer. This does not negate the benefits of swimming as an exercise, but reduces its relative effectiveness for fat loss against walking.

Weight lifting is good for fat loss (T)

In general, any form of exercise involving energy expenditure has benefit for weight loss. Resistance training is often underrated and considered only for the development of strength or size. However, where large muscles or muscle groups are used and/or when resistance paradigms involving light weights at high repetitions are prescribed, weight lifting is effective for weight loss as well as muscle strengthening.[13]

The best measure of body fat is body mass index (F)

Body mass index (BMI) (a measure of height divided by weight [squared]) is not well validated as a measure of body fat at the individual level.[14] Body mass index is less accurate in people of mesomorphic build (mainly men), some ethnic groups (eg. Pacific Islanders) and the elderly (who shrink with age). This can lead to unrealistic goal weights. Waist circumference, other anthropometry, imaging measures, or bio-impedance analysis, provide better practical measures (sometimes in conjunction with BMI or weight alone).

You lose more weight doing exercise you are good at (F)

Individuals become more efficient and expend less energy as they become experienced with a particular form of exercise. A fit, experienced runner for example, requires less energy to cover a set distance than an unfit individual of the same weight, age and gender. Weight loss requires excess energy expenditure, which comes more from activities with which an individual is not so familiar.

An obese person can be fit and healthy (T)

While fitness and fatness are usually inversely correlated, several studies have shown that many active individuals can maintain good health irrespective of body weight.[15] There is also accumulating evidence that a significant proportion of obese individuals do not suffer the dysmetabolism from their extra weight that might be expected, and a significant proportion of lean individuals do suffer such health problems.[16] This has led to new questions about the effects of obesity as a marker, rather than a cause,of disease.[17]

Discussion

In the study group (*Table 1*) there was considerable confusion about the facts around weight control. Overall, doctors disagreed with the bulk of supporting evidence on 40% of the questions reported here, and tradesmen on 49%. Possible reasons for this include lack of adequate education of doctors in this area, misreporting of health research in the popular media, and a need for further research in some areas. For doctors, training in lifestyle medicine, which bridges clinical medicine and public health,[1] may help, and new professional organisations in lifestyle medicine may be able to assist in the future (see *Resources*). Certainly, standards of evidence in media reports could be significantly improved.

Resources

- Australian Lifestyle Medicine Association: www.alma-inc.com.au
- American Lifestyle Medicine Association: www.ajlm.sagepub.com.

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