

OBESITY – A Briefing for Complementary Therapists

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1. Introduction.

Obesity has become an increasing and important medical problem. That problem is still growing to what may well be described as epidemic proportions. It is a multifaceted health issue because of the many factors involved. Those factors are behavioural, biological and environmental. The medical study of obesity is called *bariatrics* which is a branch of medicine that deals with the control and treatment of obesity and allied diseases. At the root of the overweight and obesity problem is the simple fact of energy imbalance. Simply put, weight gain results from consuming more calories than one expends.

The object of this paper is to brief complementary therapists on the nature of overweight and obesity and its corresponding medical and social problems. It also suggests that complementary therapists have an level.

2. What is the definition of Obesity?

Overweight and obesity: Abnormal or excessive fat accumulation that may impair health.

A common index of "weight for height" that is used to classify overweight and obesity in adults is the Body Mass Index (BMI). It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m^2).

In terms of BMI, the World Health Organisation's (WHO) definition is:

- a BMI greater than or equal to 25 is overweight
- a BMI greater than or equal to 30 is obesity

BMI provides the most useful population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults. The important point to understand is that it should only be considered a rough guide as it may not correspond to the same degree of fatness in different individuals.

Whilst BMI is a useful tool, it is really only a simple two-parameter measurement. It does not consider the other factors involved in the measurement of obesity. It is an obvious fact by the very nature of the calculation that BMI is unable to differentiate between fat and muscle. Muscle tends to be heavier than fat and can tip more toned individuals into overweight status even if their actual fat levels are quite low.

The BMI value does not take into consideration places where the body retains and distributes fat. Visceral fat, that is to say fat distributed around the abdomen, is more harmful than fat that is simply sitting under the skin. Visceral fat develops in muscle tissue and around organs such as the liver. By releasing certain hormones and other agents, it disrupts the body's ability to balance its energy needs. It is perfectly possible for even relatively thin people to have high levels of visceral fat. This means that such people might be considered healthy by BMI measurement standards but, because of the fat distribution, the possibility exists that they could be incurring a higher risk of developing the type of health problems that are related to weight gain.

Consequently, when considering a patient's BMI we should also give some consideration to their waist circumference. This may be used as a simple measure of body fatness.

Adult waist circumference cut points are:

- **Increased risk of health problems: Men \geq 94cm Women \geq 80cm**
- **Greatly increased risk of health problems: Men \geq 102cm Women \geq 88cm**

Waist to hip ratio examines fat distribution and, in practice, is used less frequently, given the established links between waist circumference alone

and health risk. The conclusion here is that BMI has its limitations but the knowledge gained from it may be improved with the additional consideration of waist measurement.

3. What are the causes of obesity?

A failure to balance one's energy

A lack of energy balance is the most probable cause of overweight and obesity. Energy balance means that ENERGY IN must equal ENERGY OUT.

ENERGY IN is the amount of energy measured in joules or calories that is obtained from food and drink.

ENERGY OUT is the amount of energy that the body uses for activities that are life-maintaining such as breathing, digesting, and generally running the body machine. We can call these INTERNAL ACTIVITIES. Added to these are the EXTERNAL ACTIVITIES such as walking, running, physically working.

Thus:

ENERGY OUT = ENERGY FOR INTERNAL ACTIVITIES + ENERGY FOR EXTERNAL ACTIVITIES.

We can perhaps make this clearer by writing it as:

ENERGY OUT = CALORIES (OR JOULES) OUT

ENERGY OUT = CALORIES FOR INTERNAL ACTIVITIES + CALORIES FOR EXTERNAL ACTIVITIES.

To maintain a healthy weight, energy IN and OUT does not have to balance exactly every day of the week. It is the maintenance of a balance over time that enables the body to operate at a healthy weight.

We can sum this up in the following manner:

CALORIES IN = CALORIES OUT = WEIGHT BALANCE

CALORIES IN > CALORIES OUT = WEIGHT GAIN

CALORIES IN < CALORIES OUT = WEIGHT LOSS

Overweight and obesity happen slowly over time when the body takes in more calories than it actually uses.

An Inactive Lifestyle

Most people are not, generally speaking, very physically active. One of the reasons for this is that many people work very hard and relax by spending a lot of time in front of TVs and computers or using what leisure time they have engaging in hobbies that tend to be passive rather than active.

There are other reasons for not being active. These include over reliance on cars instead of walking or cycling and fewer physical demands at work or at home because of the use of modern technology. For children there may a lack of physical education periods in schools.

Inactive people will have the tendency to gradually gain weight because of the simple fact that they do not burn sufficient energy to achieve the balance discussed earlier. It is not just weight increase that is the problem. From weight increase comes the added risk of heart disease, increased blood pressure, type 2 diabetes, colon cancer and a plethora of other health risks.

Environmental Issues

Modern working practices, market forces and the urban environment are not conducive of a healthy lifestyle. The problem here is that they conspire together to encourage overweight and obesity. The way in which the modern environment is structured can show the way in which this interaction works against health.

For example:

- Working life. Long working hours coupled with the time spent commuting do not provide sufficient time for active leisure pursuits.
- Lack of open spaces and parks in the urban area for play and other

healthy sporting activities.

- High cost of gymnasias and swimming pools are off-putting to people on low incomes.
- The fashion for large or "supersized" food portions encouraged by TV advertising, and particularly by "fast food" chain restaurants. These large meals and snacks can easily feed two or more people. Here we can easily understand what will be the results of too much energy being taken in without a corresponding balance of activity energy out.
- Failure to understand the necessity to consume a balanced diet, not just of calories but of all the other necessary nutrients required for a healthy body. This is an educational failure. It is not any lack of access to healthy foodstuffs that is the problem; it is that the majority of people have no understanding of the importance of consuming a wide range of fresh fruits and fresh vegetables.
- Food advertising. Commercial television stations bombard the viewing -public with advertising for food products. In what appears to be a significant number of TV advertisements, children are the targets of advertising for high sugar, high calorie and high fat content manufactured products. There is only one object for these advertisements and that is to encourage the viewer to buy these unsuitable foodstuffs.

Genetics and Health Conditions

Studies have shown that genes do have a strong influence on a person's weight. Overweight and obesity tend to run in families.

Genetic considerations may affect the amount of fat the body stores and where this extra fat is stored. Families also share the same food and they may also share similar physical activity profiles. Children tend to adopt the habits of their parents. Clearly, a link may be seen to exist between an individual's genetic profile and the family environment.

Children's habits and lifestyles are forged by their interaction with the family group. Therefore, parents who are overweight, inactive, and who eat high-calorie foods will provide encouragement for their children to become overweight as well. The only way around this is for the family to

adopt good healthy food and physical activity habits. If this is done, the obesity risk to both parents and children is reduced. It must be understood, however, that to make these necessary life-style changes properly requires a basic understanding of nutrition and health.

Medical Conditions

It also needs to be understood that there are medical conditions that can lead to overweight and obesity. These can include:

- ***Hypothyroidism.*** This is a condition where the thyroid gland produces too little thyroid hormone. Thyroid hormone regulates our metabolism. Too little hormone slows the metabolism and often causes weight gain. A hormone level test can reveal if this is the case.
- ***Cushing's syndrome.*** This condition (also known as hypercortisolism) results when the adrenal glands on top of each kidney produce an excess amount of a steroid hormone called cortisol. Cortisol regulates a wide range of processes throughout the body including metabolism and the immune response. It also has a very important role in helping the body respond to stress. The syndrome can develop also if a person takes high doses of certain medicines, such as prednisone, for long periods. Prednisone is a potent anti-inflammatory prescription medication used to treat inflammatory types of arthritis and other conditions. One side effect is that it can lead to a build-up of fat. This occurs characteristically in areas such as the face, the upper back, and the abdomen.
- ***Psychological Considerations.*** Some people with depression develop a tendency to overeat which can lead to obesity because of the resulting failure of the energy balance. There is also the problem of addictions. Examples include people who love chocolate, sweetened coffee or tea, peanut butter, sweetened cereals, a sugary doughnut or sweet roll. Items such as these are consumed at intervals throughout the day.
- ***Polycystic Ovarian Syndrome (PCOS)*** is a condition that affects

about 5–10 percent of women of childbearing age. Women who have PCOS often are obese, have excess hair growth and have reproductive problems and other health issues. These problems are caused by the high levels of hormones called androgens.

Certain medicines may cause a gain in weight. These medicines include some corticosteroids, antidepressants and seizure medicines. These medicines can increase the appetite, slow the rate at which the body burns calories or cause water retention in the body. All of these factors can lead to weight gain.

Additional conditions leading to weight increase

Lack of Sleep

A growing body of research suggests that there's a link between how much people sleep and how much they weigh. In general, children and adults who get too little sleep tend to weigh more than those who get enough sleep. People who sleep fewer hours have a tendency to eat foods that are higher in calories and carbohydrates. Here, again, is a clear path leading to weight gain and obesity.

In one particular study, researchers followed roughly 60,000 women for 16 years, asking them about their weight, sleep habits, diet and other aspects of their lifestyle. At the start of the study, all of the women were healthy and none were obese; 16 years later, women who slept 5 hours or less per night had a 15 percent higher risk of becoming obese compared to women who slept 7 hours per night. Short sleepers also had a 30 percent higher risk of gaining 30 pounds over the course of the study compared to women who got 7 hours of sleep per night.

There are several possible ways that sleep deprivation could increase the chances of becoming obese. It would appear that sleep deprivation can lead to people being too tired to undertake any form of physical exercise.

This decreases the "energy out" side of the weight balance equation. The other aspect of sleep deprivation is that people who do not get their sufficient amount of sleep have a tendency to take in more calories than those who do. The reason for this is, because they are awake for a longer period of time, they have more opportunities to eat. Furthermore, lack of

sleep disrupts the balance of key hormones that control appetite so sleep-deprived people may be hungrier than those who get enough rest each night.

Sleep enables the body to maintain a healthy balance of the hormones that cause feelings of hunger (*ghrelin*) or feelings of repletion (*leptin*). With sleep deprivation, the level of ghrelin goes up and the level of leptin goes down. The result of this is that the pangs of hunger are felt more at this time than when well-rested.

Another aspect of lack of sleep is that it has an effect on how the body reacts to insulin (the hormone that controls the level of blood glucose). A lack of sleep results in a higher than normal blood sugar level, a continuation of this condition may increase the risk of becoming diabetic.

Age

As the body ages muscle is lost. The amount of loss depends upon the level of physical activity. The effect of muscle loss is to reduce the rate at which the body is able to burn energy. As we have seen from the energy balance equations above, if calorie intake (energy in) is not reduced as one ages then the result will be weight gain.

The middle life weight gain experienced mainly by women is mainly due to aging coupled with a failure to regulate and adjust one's lifestyle. Menopause also plays a role in female weight gain. There can be a gain of some 2.5 kilograms the, result being an increase in fat around the waist.

Pregnancy

During pregnancy, it is normal for women to gain weight in order to support the foetus' growth and development. The majority of women find it hard to lose weight after giving birth and, coupled with a failure to change poor dietary habits and inactivity, may lead to overweight or obesity. If the situation is not taken in hand the effect will be magnified after further pregnancies.

Sugar

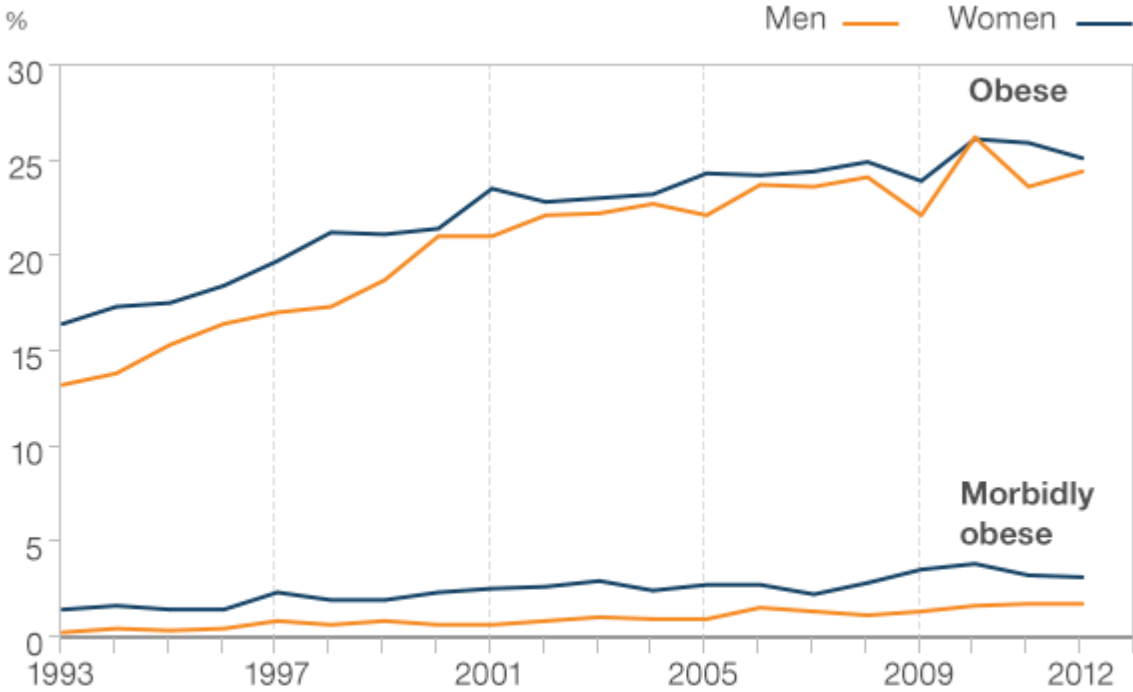
Sugar does play a role in this but perhaps not to the extent that some commentators might think. Many fruit drinks ("energy drinks") contain a high degree of added sugar. Quite obviously, excessive consumption of

such drinks will lead to weight increase if the consumption is not followed by physical exercise.

Once again, as has been already noted above, it is the energy balance that is important. The majority of human beings have what has often been described as a "sweet tooth". This leads to the high consumption of manufactured food products that contain excessive amounts of sugar. One has only to walk around a supermarket in order to see the vast range of sugar-loaded products on offer. Again, it is the failure to maintain the body's correct energy balance that causes weight increase and leads to obesity.

4. The growth of obesity in adults and children.

How the proportion of adults with obesity has increased, 1993-2012.



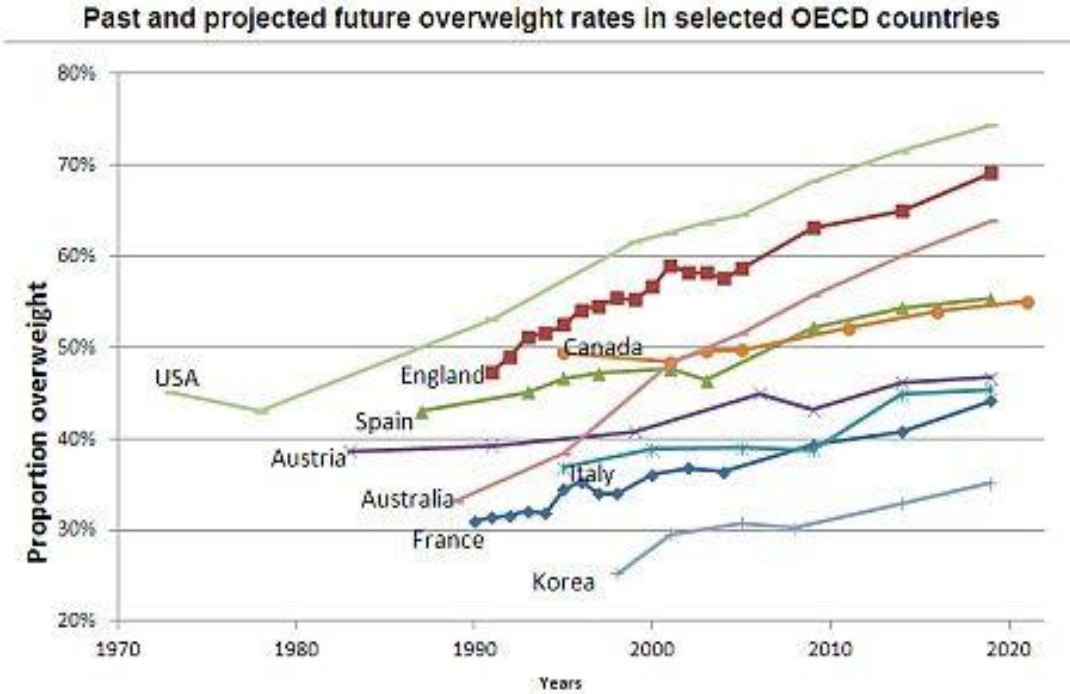
Note: Obese (BMI 30 or more, includes morbidly obese)
Morbidly obese (BMI 40 or more)

Source: Health Survey for England

Figure 1

The growth of obesity in the England amongst men and women may be

observed in Figure 1. Furthermore these graphs, coupled with more recent studies, make the point that there is an obesity epidemic in England that shows no signs of abating anytime soon. An alarming picture indeed.



Source: Official Website of the Prevalence of Obesity in Australia

Figure 2

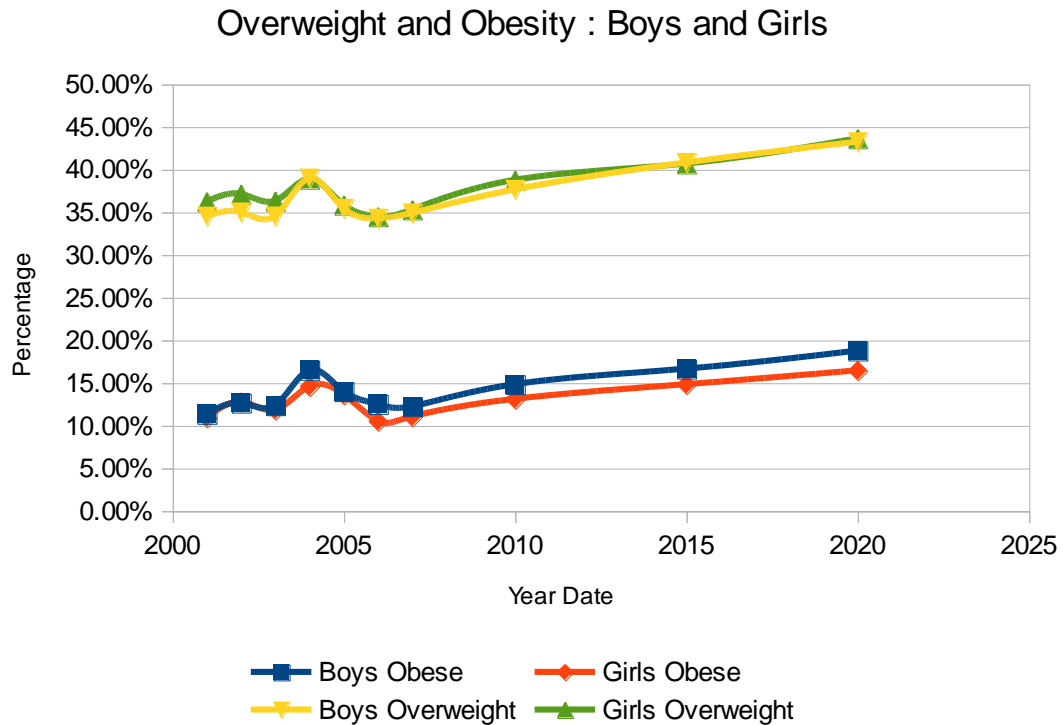


Figure 3

A similar trend for the growth of obesity in children may be seen in Figure 3. Again, as with the adult statistics indicated in Figures 1 and 2, the epidemic extends itself to children and also appears to show no sign of abating. The increasing slope of the graph towards 2020 in Figure 3 should be a particular point for concern. It has been established that the problem starts early in life. A survey carried out by *Mother & Baby* magazine in 2004 revealed that nine out of 10 toddlers eat what may fairly be described as junk food, with chocolate, biscuits, crisps, fish fingers, chips, cake and chicken nuggets appearing in children's top 10 favourite foods.

5. The social implications of obesity

The negative effects of both overweight and obesity cannot be over emphasised. These effects have enormous implications for the provision of health services and for the economy in general.

A person who is obese or overweight increases the risk of developing a range of serious diseases including heart disease and cancers. The impact of obesity on the health of adults is now well-understood. However, as we have seen above in Figure 3, the rising levels of childhood obesity has consequences for the physical and mental health of children and young people both today and for the foreseeable future.

It is clear and obvious that obesity is related to the development of long-term health conditions. The large percentage of the populace to whom this applies is already placing demands on health related services.

Overweight and obesity and their associated health problems have a significant economic impact on both the nation's health services as well as upon the local authorities. Obesity has not only direct health care costs but it has enormous financial implications for the whole economy such as the loss of productivity due to absenteeism, certified medical incapacity and thus the increased burden on the state's resources.

6. The financial burden of obesity

Based upon the work carried by various government agencies it can be clearly seen that the nation cannot afford to underestimate the cost of overweight and obesity. The direct costs to the National Health Service (NHS) for treating conditions of overweight, obesity, and related morbidity in England are estimated to have ranged from £479.3 million in 1998 to £4.2 billion in 2007. Note that these are *direct* costs. Estimates of the *indirect* costs, that is to say those costs arising from the impact of obesity on the wider economy as mentioned above over the same time period, ranged between £2.6 billion and £15.8 billion.

For the years 2006 and 2007, obesity and obesity-related illness was estimated to have cost £148 million in inpatient stays in England. In Scotland, the total societal cost of obesity and overweight in the years 2007 and 2008 was estimated to be between £600 million and £1.4 billion. It is further estimated that the NHS cost may have contributed as much as £312 million to this.

Analytical theoretical projections based upon the solid base of statistics

suggest that indirect costs could be as much as £27 billion by 2015.

It is important to understand that different studies have estimated and defined costs differently. It is therefore difficult to interpret trends and to compare cost estimates between studies. This appears to be because of a lack of agreed definition of costs between reporting agencies and authorities. This discrepancy should not influence the arguments about what must be done to tackle overweight and obesity – the financial studies carried out are sufficient indication of a disastrous financial burden on all aspects of national life. This is a problem that is just not going to go away.

To put this into perspective, a major collateral problem to obesity is Type 2 Diabetes. The exact causes of diabetes are still not completely understood but it is known that obesity increases the risk of developing different types of diabetes mellitus.

For type 2 diabetes, this includes being overweight or obese (having a body mass index - BMI - of 30 or greater).

In fact, research indicates that obesity accounts for 80-85% of the risk of developing type 2 diabetes. Furthermore, recent research suggests that obese people are up to 80 times more likely to develop type 2 diabetes than those with a BMI of less than 22. The national cost of medication for the control of diabetes is very high.

Estimates of the annual costs resulting from diabetes in the UK are:

- **Cost of absenteeism:** £8.4 billion
- **Cost of early retirement:** £6.9 billion
- **Cost of social benefits:** £0.152 billion

Note that this is just for the treatment of diabetes. No other medical conditions resulting from diabetes are included.

Diabetes is just one condition that can arise from overweight and obesity. It must be remembered that overweight and obesity affects the body in a variety of ways, all of which create their own related personal health and public financial burdens.

7. Education and the role of the Complementary Therapist

Let us just examine a typical statement made by authorities; in this case the World Health Organisation.

"Curbing the childhood obesity epidemic requires sustained political commitment and the collaboration of many public and private stakeholders.

Governments, International Partners, Civil Society, NGO's and the Private Sector have vital roles to play in shaping healthy environments and making healthier diet options for children and adolescents affordable and easily accessible. It is therefore WHO's objective to mobilize these partners and engage them in implementing the Global Strategy on Diet, Physical Activity and Health.

WHO supports the designation, the implementation, the monitoring and the leadership of actions. A multisectoral approach is essential for sustained progress: it mobilizes the combined energy, resources and expertise of all global stakeholders involved. "

This is all very true but unfortunately it keeps the problem circulating at a high level and does not reach the people on the ground. We can easily see from the graphs, detailing the steadily increasing percentage of population that is overweight or obese, that "initiatives" so far are ineffectual. I can see that it does not get to the point at which real action can be taken when I see a young mother buy a tin of a brand name fizzy drink and put it in her baby's milk bottle in order to pacify the child. What is lacking is a grass roots level of education and this is where complementary therapists can make a difference. Nutrition is the fundamental subject in which all complementary therapists need to be educated.

8. Conclusions

The more one studies the problem of overweight and obesity the clearer it becomes that action of more than one level is required.

At national level:

Any antiobesity campaign should focus on creating a social environment that encourages weight loss. This can be done by:

- Compulsory exercise for all children from primary school, through senior school
- Health-friendly food choices in cafeterias
- Active participation in sport as players

At the individual level:

- Include nutrition in the education of all complementary therapists
- Encourage therapists to take note of their patient's physical condition
- Encourage therapists to provide basic education and basic suggestions

If there are sound government initiatives then they can be reinforced on the personal education level by a veritable army of complementary practitioners.

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After retiring from a successful career as a Consulting Naval Architect and Structural Engineer, Tony Edwards devoted his energies to the study of

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Now retired from the active practice of complementary medicine, Tony maintains his therapy interests as the author and tutor of many of our Schools Internationally accredited training courses i.e. Clinical Holistic Nutrition, Clinical Hypnotherapy/Psychotherapy, Medical Hypnotherapy, Meridian Psychotherapy, Diabetes Risk Assessment and Meditation.

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