CHHP
CENTRE FOR HEALTH & HUMAN PERFORMANCE

76 HARLEY STREET
LONDON W1G 7HH

EXERCISE AND WEIGHT MANAGEMENT

IT'S NOT ALL ABOUT THE FOOD!

by Professor Greg Whyte PhD FACSM

OBESITY IS A GROWING PROBLEM ...

in the western world with almost a quarter of men and women in the UK classed as clinically obese (BMI >30 Kg/m2). Obesity is associated with excessive weight and is defined in a number of different ways. The most commonly used method is that of body mass index [BMI (Kg/m2) = Body Weight (kg)/height2 (m)]. Unfortunately, this method and other commonly used methods fail to assess body composition, in other words what percentage of body weight is accounted for by fat and muscle. Distinguishing between fat mass and non-fat mass is important in identifying the potential risks of excessive weight (muscle mass is beneficial for health whereas excessive fat is detrimental). This concept is important when you are starting a new exercise programme. Be careful if you use body weight as your measure of success as muscle weighs more than fat and increasing your muscle mass whilst decreasing your fat mass can sometimes result in no change in body weight or even weight gain! Therefore, you can become downhearted having not lost weight when in reality you have made positive changes to your body composition leading to improved health and well-being.

WHY DO WE CARE ABOUT OBESITY? ...

Unfortunately, being overweight increases your chances of developing a range of disease all of which can lead to premature death. In addition, being overweight has a profound effect on your quality of life and often leads to loss of function and disability. The psychological impact of obesity should not be overlooked as there is a strong link between excess weight and impaired mental health.

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WHAT CAUSES OBESITY? ...

Obesity is simply a sign of an individual who is in positive energy balance. In other words, obesity is a sign of inactivity and excessive calorie consumption. Weight management is very easy to understand: If you eat more calories than you burn you will put weight on, if you eat less calories than you burn you will lose weight (this is termed a 'negative energy balance') and if you eat the same number of calories that you burn you will maintain your weight (this is termed 'energy balance') (see Figure 1). The amount of energy we burn is a combination of our resting metabolic rate (the amount of energy we burn at rest to support normal function) plus the amount of calories we burn during physical activity (ranging from house work to exercise). So it is really very simple, to reduce weight we can either reduce the number of calories we eat (diet), increase the number of calories we burn (exercise) or both. Importantly, it is the combination of dietary calorie restriction and increased physical activity that results in the most successful weight management programmes.

HAS THE DIET MESSAGE WORKED? ...

Unfortunately, despite this tidal wave of information and education about diet, obesity remains a major health problem in Western Society. The number of overweight and obese individuals in the population is growing steadily and continues to rise. We are a fatter nation now than we were 20 years ago! Evidence suggests that the average number of calories eaten by the British has reduced and yet we are getter fatter as a nation, how can that be? The simple answer is that we are becoming progressively less active (remember the energy balance), so while we are eating less calories we are also burning less energy. In fact, the reduction in physical activity is greater than the reduction in the amount of calories we eat. Unfortunately, driven by a multi-million pound diet industry and a media obsessed with diet, we continue to reinforce the message that dieting is the only way to control weight. Unfortunately, less than 10% of people are able to successfully manage weight in the long-term with diet alone. In reality diet is an important weapon in the fight against obesity however it remains relatively impotent without an increase in physical activity.

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WHAT IS THE MOST EFFECTIVE WAY TO MANAGE WEIGHT?...

The best way to lose weight and to maintain weight loss is by a combination of exercise and calorie restriction (diet). This approach will maximise weight loss in the form of fat mass whilst helping to maintain muscle mass.

All forms of exercise are beneficial for weight management. As well as increasing the number of calories you burn, strength exercises improve your ability to carry out tasks of daily living and maintain your muscle mass. Muscle mass is important as it is where the vast majority of calories are burned. Unfortunately, dieting alone leads to a loss of muscle mass and as a consequence reduces the number of calories you burn at rest, decreasing your resting metabolic rate. As a consequence you will need to further reduce the number of calories you eat to maintain the same amount of weight loss. This downward spiral will continue until you eat so little that it has significant negative health consequences. The prevalence of eating disorders, including bulimia and anorexia nervosa, is increasing in the UK, particularly among women. Eating disorders carry a significant health risk and must be addressed quickly and management sought from a specialist (psychiatrist) in the field. Furthermore, extremely low calorie intake caries a number of associated health problems including; disruption to or loss of the menstrual cycle that may have a negative impact on bone mineral density and fertility and diseases associated with malnutrition. Our obsession with weight loss through diet alone is leading to the development of equally problematic health issues as those associated with obesity in some individuals. Combining a well balanced, healthy diet with increased levels of physical activity will offer the safest and most effective strategy for weight management. With calorie restriction it may be difficult to maintain a sufficiently broad diet to ensure sufficient macro- and micronutrients intake. Nutritional supplements are important adjuncts to calorie restricting diet to ensure optimal health.

In addition to improving weight management, exercise is effective in reducing the development of chronic disease and improving mental health. There is a clear relationship between inactivity and disease prevalence (see figure 2) with a significant increase in the risk of developing a large number of chronic diseases in those that are sedentary (see Table 1.). Furthermore, exercise makes you feel good and improves your social life. Dieting alone rarely improves your mood, often increases your anxiety and has no positive impact on your social life! Dieting is never enjoyable. In contrast, exercise may seem like a chore in the beginning however; there are lots of ways to enhance your exercise experience and once it becomes part of your life you can enjoy it and even look forward to it!

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TABLE 1.

The Outcome of Physical Inactivity (modified from Handschin, C. & Speiglman, B. Nature 2008; 454:463-469.)

CATEGORY	DISEASES AND CONDITIONS
Metabolic Conditions	Obesity; type 2 diabetes; dysregulated lipid metabolism; metabolic syndrome; and gallstones.
Cardiovascular Diseases	Hypertension, coronary heart disease, myocardial infarction (heart attack), angina, stroke, platelet adhesion and aggregation, atherosclerosis, thrombosis, intermittent claudication.
Pulmonary Diseases	Asthma, chronic obstructive pulmonary disease (COPD).
Cancers	Breast, colon, endometrium, prostate, pancreas, melanoma.
Neurological	Learning and memory impairment, cognitive dysfunction, dementia, depression, mood and anxiety disorders, neurodegeneration (as in Alzheimer's), Huntington's and Parkinson's.
Musculo-skeletal disorders	Sarcopenia (age related muscle wasting), lower back pain, osteoporosis and related fractures, osteoarthritis and rheumatoid arthritis.
Gastro-Intestinal	Reduced intestinal motility, constipation.
Immune alterations	Immune dysfunction and chronic inflammation.
Reduced Quality of Life	Frailty, decreased psychological well-being, decreased functional independence, decreased mobility, increased susceptibility to psychological stress, impaired reaction skills, and impaired sense of balance, agility and flexibility.