

WEIGHT MANAGEMENT; A MUST FOR OPTIMAL HEALTH AND WELLNESS

BY

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ABSTRACT

In spite of the numerous side effects of overweight, many people do not take weight management as a serious public health issue. The purpose of this study was to highlight the importance of wellness and optimal health and the various factors that can influence weight management. Some of the basic concept of weight management like, body composition, energy balance, excess body fat and wellness, method for weight management, body fat distribution and health and factors contributing to excess fat were well examined and explained. The conclusion was that in order to check the negative effects associated with being fat or overweight we have to embrace the principles of good health and wellness and to be able to carry this out effectively we have to practice healthy behaviour such as exercising regularly, eating balanced and healthy meals and maintaining a healthy weight.

INTRODUCTION

Health is a major determinant of the socio-economic development of a people. This based on the fact that all human endeavours require sound mind in sound body, for full realization of aspirations. The health of an individual is the sum total of the number of factors ranging from environment, socio-cultural, political, genetics and behaviour or lifestyle (Olise, 2007). The World Health Organization (WHO) defined health as a state of physical, social and mental well being of an individual and not merely the absence of disease or injury.

According to Paul and Walton (2004) wellness is an expanded idea of health, many think of health as just the absence of physical disease, but wellness transcend this concept of health; wellness optimal health and vitality, encompassing physical, emotionally,

intellectual, spiritual, interpersonal, social and environmental wellbeing. Therefore we all have the option and responsibility to decide the kind of future we want, the one characterized by zestful living or the one marked by symptoms and declining energy. Wellness is what everyone can have. To achieve this you need knowledge, self awareness, motivation and efforts, but what you are going to benefit from it will last a life time. Optimal health can be derived from a healthy lifestyle, pattern of behaviour that can provide and support ones health now and as you get older.

Scientific research has shown that there are factor that can influence wellness, for example heart disease, the number one killer is associated with high cholesterol in the body, high level of stress, diet high in fat and low in fibre and a sedentary way of life. Exercising regularly can help to prevent high blood pressure, diabetes, high cholesterol, depression and may also reduce the risk of colon cancer, stroke and back injury. When we are aware of all these, then we can make informed choices for a healthful living. For instance if you have a family history of overweight, you can maintain a normal weight by being careful with what you eat and how you eat. You have to balance your calorie intake.

Weight management is achieving and maintaining a healthy body weight. This is a serious public health challenge. While some people struggle to lose weight, other fall into dangerous eating habits such as eating between meals, binge eating or self starvation. Weight management is a long term approach to a healthy lifestyle. It is a balance between healthy eating and doing physical exercises. That is energy expenditure must be equal to the energy intake. Using tips that can keep your stomach full is developing healthy eating habits that can serve as a useful tool in weight management knowing what your body needs, can help to control over consumption and under consumption of food. Weight management does not include fatty diets which promotes fast and temporary weight loss, it focuses on the long term results that are achieved through slow weight loss, followed by retention of an ideal body weight for every age, sex and height.

In Nigeria, rising overweight rates are a major concern and overweight is a risk factor for many chronic diseases such as type II diabetes, hypertension and cardiovascular

diseases (Klein, Sheard, Pi-sunyer, Daly, Whyte-Roselt, Kulcam, and Clark, 2004). Managing ones weight is one factor in preventing such chronic diseases through life style modification. For one to be healthy today, there are certain behaviour and habit that must be adopted;

- Having a sense of responsibility for your own health and taking an active rather than a passive stance towards your life.
- Learning to manage stress effectively.
- Maintaining high self esteem and healthy mentally in interacting with other people.
- Eating well, exercising and maintaining a healthy height and weight.
- Knowing the facts about cardiovascular diseases (Paul and Wallon, 2004).

When we are talking about weight loss or losing weight, we are referring to the fat stored in the body because what matters to the health of human beings is not the total body weight but the stored fat in the body.

Overweight is defined as the total body weight above the recommended range for good health and obesity is defined as a more serious degree of overweight. Many method are available for measuring and evaluating body weight.

Some of the basic concept of weight management are;

1. **Body Composition:** The human body can be divided into fat free mass and body fat. Fat free is composed of the body non-fat tissues, bone, water, muscles, connective tissues, organ tissues and teeth while body fat includes both essential and non-essential body fat. Essential fats are the lipids that are incorporated in the nerve and organs. These fat deposits are crucial for normal functioning of the body and this is made up of about 3 percent of the total body weight in men and 12 percent in women. This large percentage in women is due to the fat deposits in the breast, uterus and other sites specific to females (Paul and Wallon, 2004). Non essential (storage) fat exist primarily within the fat cells or adipose tissue, that is located below the skin and around the major organs of the human body. The amount of fat

stored in the body varies from person to person and they are based on the following factors, gender, age, heredity, metabolism, diet and activity level.

2. **Energy Balance:** Maintaining an energy balance is a key to keeping healthy. When you eat, you take in energy (calories) from the food and the uses the energy to maintain vital body functions (resting metabolism), to digest food and to fuel physical activities. Therefore when the energy you take in, is equal to the energy take out, your current weight is maintained. That is to change your weight and body composition, you must tip the energy balance equation in a particular direction. When you take in more calories daily than your body burns the excess calories will be stored as fat and weight would be gained over time. On the other hand if you eat less calories than you burn each day, you lose some of the storage fat and maybe lose weight.

Excess Body Fat and Wellness

The location of fat and the amount of fat in the body have effects on health. The health risks of excessive body fat can cause high mortality rate and also reduce life expectancy by 10 – 30 years (Paul and Wallon, 2004). Overweight is associated with unhealthy cholesterol and triglyceride levels, impaired heart function and death from cardiovascular diseases, hypertension, many kinds of cancer, impaired immune function, gall bladder and kidney diseases, skin problems, sleep disorders, arthritis and other bone and joint disorders. The strong association between excess body fat and diabetes mellitus, a disease that causes the disruption of the normal metabolism of the body is of great concern. The pancreas a long thin organ located behind the stomach normally secretes a hormone called insulin which stimulates the cells to take up glucose to produce energy. In the person with diabetes, this process is disrupted causing a build up of glucose in the bloodstream. And diabetes is associated with kidney failure, nerve damage, circulation problems, blindness and increased rate of heart attack, stroke and hypertension.

Methods of Weight Management

Increased intake of protein especially at breakfast is important because the satiating property of dietary protein is influenced by the time protein is consumed. According to Leidy, Bossingham, Maltes, and Campbell, (2009) protein intake at breakfast has a greater satiety effects than later meal time. Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness. There are several explanation as to why this is the case. For instance protein has a greater thermogenic effect than carbohydrates and fat which enables the body to burn more calories (Paddon, Westman, Maltes, Wolfe, Astrup, and Westerlerp-Plantenga, 2008), a high protein breakfast appear to slow gastric emptying which attributes to the fact that protein appear to be most satiating macronutrient (Blom, Lluch, Stofley, Vinoy, Hoist, Schoaafsma, and Hendriks, 2006). Finally a high protein breakfast increases the activity of glucagon which activates the pathways for the synthesis of glucose.

Use a Smaller Plate

According to Rolls, Morris and Roe, (2002), using smaller plates helps you to consume smaller portion of food, leading to the consumption of fewer calories. The size or portion of food affects energy intake in normal weight and overweight. Studies have shown that portion or size of food influences energy intake (Elio-martin, Ledikue, and Rolls, 2005). The influence of food portion or size and energy density on energy intake has implications for weight management. People who are presented with larger portion of food do not report to have a higher level of satiety which suggest that hunger and satiety signals are ignored when a large portion of food is placed in front of them. In a particular study, it showed that participant consumed 31% less calories with the small portion compared with the larger portion (Elio-martin, 2005). Large portion size can be one of the factors contributing to the increase in body weight.

Eat More of Soup

Soups have a significant satiety effects and studies according to Maltes (2005) demonstrated that compared to solid foods, soup ingestion decrease the amount of

energy intake. And compared to having no soup, it has been shown that eating soup reduces total energy intake of a meal (Flood and Rolls, 2007). When soup is consumed before a meal a decrease of 20 percent of energy is consumed in the meal (Floods et.al., 2007).

Choose Low Caloric Foods

A moderate decrease in caloric intake will lead to a slow weight loss, which may be more beneficial for long term weight management (Kelin, 2004). For instance going for a black coffee instead of a full fat latte will save calories that will add up in the long run. Low fat meals reduces the total amount of calories and cholesterol consumed (Chizzolini, Zamardi, Darigoni and Chodini, 1999). Caloric value and cholesterol content of normal and low fat meal and meat products are significant.

Eating more Dairy food can aid in fat loss

A diet high in dairy products decreases total body fat (Zemel, Richards, Milstead and Campbell, 2005). And this occurs because a high amount of dietary calcium increases the amount of energy and fat excreted from the body (Jacobsen, Lorenzen, Toubro, Krog – Mikkelsen and Astrup, 2005). Studies have shown that saturated, monounsaturated and polyunsaturated fats all have a higher excretion rate with a high calcium intake (Bendsen, Hother, Jensen, Lorengen, Astrup, 2008). In the study a high calcium intake is considered 2300mg and a low calcium intake is considered 700mg (Bendsen et. al., 2008). A possible explanation to this is that high intake of calcium, soap formation and or binding of bile acid in the intestine (Bendsen et. al., 2008). Other studies specifically show that daily source of calcium demonstrated greater weight loss than supplemented calcium intake (Zemel et. al., 2004). This may be due to the other bioactive components present in milk which may aid in metabolic efficiency and fat loss (Zemel, et.al., 2004).

Incorporate More Vegetables into your meal

Fruits and vegetables have been shown to increase satiety and decrease hunger (Rolls, et.al., 2004). These foods have a low energy density which is mainly due to the high water content and partly due to the fibre content. The energy reduction is to enhance

satiety. The water adds weights without adding calories and the fiber slows down gastro emptying. Both of these factors contribute to the satiating effect of vegetables and fruits. According to Rolls, et. al., (2008) fibre decreases hunger and also decreases total energy intake.

Fibre

Dietary fibre aids weight management by inducing satiety, decreasing absorption of macronutrients and promoting secretion of gut hormones (Starms, 2005). Dietary fibre consists of non-digestible carbohydrates and lignin which are a structural components of plants. Fibre recommendation range from 10 – 13 grams/1000 calories with slightly higher recommendation for men (Pilch, 1987). Due to the high volume of water content of fibre rich foods, fibre displaces available calories and nutrients from the diet (Savls, 2003). Fibre may have the added benefits of helping consumers decrease food intake throughout the day. Large intake of dietary fibre at breakfast are associated with less food intake at a lunch (Levine, Tallman, Grace, Parker, Billington and Levett, 1989).

Resistant starch

Resistant starch is a type of non-digestible, fermentable fibre that is resistant to the digestion of amylase in the small intestine and is broken down to short chain fatty acids by microfora in the large intestine. It is commonly found in cooked and cooled potatoes, green bananas, beans and legumes (Nugent, 2005). Resistant starch dilutes energy density of food intake, it has a bulking effect, so consumption of resistant starch can be an effective means of weight management.

Capsaicin

According to Kawada, Sakabe, Watanabe, Yamamoto, and Iwac, (1988) clinical research on capsaicin has showed that consumption of the spice during breakfast can increase energy expenditure by 23 percent immediately after the ingestion of food. Capsaicin, that is also known as hot pepper is primary ingredients in chills pepper and red hot pepper (Westerterp-Platenga, Smeets, and Lejeune, 2005). Hot peppers have been reported to

induce thermogenesis at the cellular level. Capsaicin induces satiety as a result of oral and gastro-intestinal conditions (Westerterip-platenga, et.al., 2005).

Lower energy and fat intake were observed under short term conditions, however the effects of the spice was over a prolong exposure and increased satiety was observed when oral contribution of capsaicin was measured in addition to the gastro-intestinal exposure indicating the sensory effect of hot pepper playing a significant role (Westerterip-platenga, et.al., 2005).

Caffeine

Caffeine and black coffee have been associated with increased energy expenditure and subsequent weight loss (Acheson, Zahorska-Markiewics, Pillet, Anantharaman, and Jequeri, 1980). Caffeine belongs to a class of compounds called methyl-xanthines and is present in coffee, tea, cocoa, chocolate and some cola drinks (Westerterip-platenga, Diepvensk, Joosen, Beribe-parent, and Tremblay, 2006). Caffeine induces a thermogenic effect in the body by increasing sympathetic nervous system activity which is an important regulator of energy expenditure (Dallo, 2002).

Body fat distribution and health

The distribution of fat in the human body is also an important indicator of health. The amount of fat in the body and its location can have profound effects on health (Paul and Wallon, 2004). Men and postmenopausal women tend to store fat in the upper region of their bodies particularly in the abdominal area. Premenopausal women store fat in hips, buttocks and thighs. Excess fat in the abdominal area increase the risk of high blood pressure, diabetes, heart disease and certain types of cancer. Abdominal fat is easily mobilized and sent into the blood stream thereby increasing disease related to blood fat level.

Body image

Body image consist of perceptions, images, thoughts, attitude and emotions. A negative body image is characterized by dissatisfaction with the body in general and this can cause

psychological distress. Somebody with defect in appearance will definitely have low self esteem.

Factors contributing to excess body fat

The factors contributing to excess body fat are;

1. Genetic factors
2. Metabolism
3. Lifestyle factors
4. Psychosocial factors

Genetic factors

The distribution of body fat and metabolic rate, body size and shape is influenced by genes. Genetic factors also affects the ease with which weight is gained as a result of overeating people believe that when both parents are overweight their children are likely to be overweight children, but hereditary influences must be balanced. Not all children of obese parents become obese and normal weight parents also have obese children, then the tendency to develop overweight maybe inherited.

Metabolism

Metabolism is the sum of all the vital processes by which food energy and nutrients are made available and used by the body. Hereditary, behaviour, weight loss and gain affects metabolism. When a person loses weight both the resting metabolic rate and the energy required to perform physical task will decrease. The reserve occurs when weight is gained. Exercise has positive effects on metabolism because the higher the energy expenditure, the more the person can eat without gaining weight.

Lifestyle factors

Lifestyle factors play a lot of role in weight gain or loss because while genes and metabolism may increase body fat they are not sufficient to explain the increasing high rate of overweight seen all over the world. Lifestyle factors like increased energy intake and decreased physical activities have negative effect on weight. Technology has reduced daily activities, such as elevator, escalator, and remote control. For instance instead of

climbing stairs, you can take the elevator or escalator and instead of walking around to do things you can use the remote control. Sitting all day, internet and play video game is also of great concern.

Psychological factors

People use food as a means of coping with stress and negative emotions. It can provide a powerful distraction from difficult feeling like loneliness, anger, boredom, anxiety, shame, sadness, inadequacy. When food and eating becomes the primary means of regulating emotions, binge eating or other disturbing eating pattern can develop.

In some families and culture, food is used as a symbol of love and caring therefore it maybe difficult to change the eating pattern of the people in these groups because they are linked to cultural and family values people also refer to overweight as evidence of good living.

Conclusion

The risk from overweight increase with its severity and they are more likely to occur in people who are more than twice their desirable body weight. Overweight can affect the psychological as well as physical well-being of the individual. Being called fat ("fatty bobo") can be a source of ridicule and sometimes discrimination from people. It can therefore result in psychological problems such as depression, anxiety and lowself esteem. And for some, the stigma associated with overweight can result to negative body image and eating disorders. According to Buckmaster and Brownell (1989) modification of eating behaviour and cognitive training would be considered as psychological factor in weight management. Good health is basic to everything in life, the physical, social and emotional parts of health are all connected. We must strive to achieve wellness by maintaining good health within our control by practising healthy behaviours, such as exercising regularly, eating three balanced and healthy meals daily, eating only healthy snacks, maintain a normal weight for your height and age.

Permanent weight loss is not something you start and stop, you need to adopt healthy behaviour that you can maintain throughout your life time.

Reference

- Acheson, K.J., Zahorska-Markiewics, B., Pillet, P., Anantharaman, K. and Jequeri, E. (1980). Caffeine and coffee, their influence on metabolic rate and substrate oxidation in normal weight and obese individual. *Amj.Clin.Nutria*. 33:989-997
- Bendsen, N.T., Hother, A.L., Jensen, S.K., Lovenzen, J.K. and Astrup, A., (2008). Effect of dietary calcium on fecal fat excretion, a randomized crossover trial. *International journal of obesity*, 32. 1816-1824
- Blom, W.A.M., Lluch, A, Stofley, A, Vinoy, S., Hoist, J.J, Schoaafsma, G. and Hendriks, A. J.J. (2006). Effects of a high protein breakfast on the post prandial ghrelin response *America Journal of Clinical Nutrition*, 83 (2) 211-220
- Chizzolini, R, Zamardi, E, Dorigoni, V and Chidini, S (1999). Calorific value and cholesterol content of normal and low fat meat and meat product: trends in food science and technology. 10 (2-5) 119-128
- Dallo, A.G. (2002). Biomedicine; a sympathetic defense against obesity. *Science* 297:780-781
- Elio-martin, J.A., Ledekwe, J.H. and Rolls, B.J. (2005). The influence of food portion size and energy density on energy intake. Implications for weight management. *American journal of clinical nutrition*. 82 (1) 236-241

- Flood, J.E. and Rolls, B.J. (2007). Soup preloads in a variety of forms, reduce meal, energy intake appetite, 49 (3): 626-634
- Higgins, J.A., (2004). Resistant starch: metabolic effects and potential health benefits, JADAL, Int. 87:761-768
- Jacobsen, R, Lovenzen, J.K., Joubro, S. Krog-Milkelsen, I. and Astrup, A. (2005). Effects of short – term high dietary calcium intake on 24-hour energy expenditure, fat oxidation and fecal fat excretion. International Journal of obesity. (29) 293-301.
- Kawada, T, Sakabe, S., Watanabe, T., Yamamoto, M. and Iwac, K. (1988). Some Pungent principles of spices cause the adrenal medulla to secrete catecholamine in anesthetized rats. Pro. Soc. Exp. Bio/Med. 188;229-233
- Klein, K, Sheard, N.F., Pi-sunyer, X, Daly, A., Whyte-Roselt, J., Kulcam, K. and Clark, N.G. (2004). Weight Management through lifestyle modification for the prevention and management of type 2 diabetes. Diabetes care 27(8) 2067-2073.
- Leidy, H.J., Bossingham, M.J., Maltes, R.D. and Campbell, W.W (2009) Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness during energy restriction compared to other meal time. British Journal of Nutrition 101:798-803.
- Levine, A.S., Tallman, J.R, Grace, M.K., Parker, S.A., Billington, C.J. and Levett, M.D. (1989). Effect of breakfast cereal on short term food intake. Am.J. Clin. Nutri. 50, 303-307.

Maltes, R. (2005). Soup and Satiety, *Physiology and Behaviour*. 83 (5) 739-747

Nugent, A. (2005). Health properties of resistant starch, *Nutri. Bull* 30:27-54

Olise, P. (2007). *Primary Health care for sustainable development*, ozege publishers, Abuja, Nigeria

Paddon, J.D., Westman, E., Maltes, R.D., Wolfe, R.R., Astrup, A. and Westerlerp-Plantenga, M. (2008). Protein weight management and satiety *AMJ CIN Nutri (Suppl)* 558-615

Paul, M.I and Walton, T. R. (2004), *Core concepts in Health*, 9th Edition, Stanford University.

Pilch, S. (1987). *Physiological effects and health consequences of dietary fiber*, life sciences research office, federation of American societies for experimental biology, Bethesda.

Rolls, B.J., Elio-Martin, J.A., and Tohill, B.C., (2004). What can intervention studies tell us about the relationship between fruits and vegetable consumption and weight management. *International life sciences institute*. 62 (1) 1-17

Rolls, B.J., Morris, E.L. and Roe, L.S. (2002). Portion size of food affects energy intake in normal weight and overweight men and women, *American Journal of Clinical Nutrition*, 76 (6) 1207 – 1300.

Saris, W.H.M., (2003). Glycemic carbohydrate and body weight regulations, *Nutri. Rev.* 61:10-16

Stavin, J.L., (2005). Dietary fiber and body weight *Nutrition*. 2 (3): 411-418

Westerterp-platenga, M., Diepvensk, I. Joosen, A.M.C.P., Beribe-parent, S. and Tremblay, A. (2006).Metabolic effects of spices, tea and caffeine.Physiology and beh. 89(1):85-91

Westerterp-Platenga, M.S., Smeets, A. and Lejeune, M. P. (2005). Sensory and gastrointestinal satiety effects of capsaicin on food intake. Int. J., Obese, 29:682-688

Zemel, M.B., Richards, J., Molstead, A., and Campbell, P. (2005). Effects of calcium and dairy on body composition and weight loss in African – American adults obesity research. 13:1218-1225

Zemel, M.B., Thompson, W., Milstead, A., Morris, K. and Campbell, P. (2004).Calcium and dairy acceleration of weight and fat loss during energy restriction in obese adult.Obese research (12) 582-590.