

OBESITY MANAGEMENT

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Obesity:

Obesity is becoming more and more of a problem in the world. It is related to a number of diseases including diabetes, coronary heart disease, hypertension, stroke, liver ailments and mechanical difficulties [particularly back and front problem]. As a consequence life expectancy is significantly reduced among the obese population. 'Bustrirk' in addressing the question, "who is fat?" claims that obesity is difficult to define in quantitative terms. Obesity refers to the above average amount of fat contained in the body, this in turn being dependent upon liquid content of each fat cell and on the total number of fat cells.

Obesity often begins early in childhood and, if this occurs, the chances for adult obesity are three times greater compared to children of normal body mass. Until recently, the major cause of obesity was believed to be overeating. There are obviously other factors operative such as genetic, environmental, social and perhaps racial influences, eating patterns, food packaging, body image and biochemical differences related to resting metabolic rate, dietary induced thermo genesis, level of cellular adenosine tri phosphate [ATP], Lipoprotein lipase, and other enzymes and metabolically active brown adipose tissue.

It is difficult to portion the cause[s] of obesity into distinct categories because the cause[s] probably overlaps. There is some confusion as to whether being overweight without being over fat is related to excess risk for cardiovascular disease. Although it has been argued that a moderate excess in body fat is not, in itself, harmful, a report from the National Institutes of health, concluded that obesity should be viewed as a disease, because there are multiple biologic hazards at surprisingly, low levels of excess body fat that represents only 5 to 10 pounds above 'desirable body weight'.

The following are health related correlates of obesity:

1. Impairment of cardiac function, due to an increase in the hearts mechanical work, and to autonomic and left ventricular dysfunction.
2. Hypertension and stroke.
3. Diabetes, as about 80% of adult-onset diabetics is overweight.
4. Renal disease.
5. Gall bladder disease.
6. Pulmonary diseases and impaired function due to the effort to move the chest wall.
7. Problems in administration of anesthetics during surgery.
8. Osteoarthritis, generative joint disease, and gout.
9. Abnormal plasma liquid and lipoprotein concentrations.
10. Menstrual irregularities. and

11. An enormous psychological burden.

Another way to determine and classify obesity is to measure the size and number of fat cells. Adipose tissue increases in two ways: Existing fat cells are enlarged or filled with more fat—a process called “fat cell hypertrophy”, or the total number of fat cells is increased—a process called “fat cell hyperplastic”. Weight loss with accompanying fat reduction by either way often normalizes Serum cholesterol and triglyceride and has a beneficial effect on blood pressure.

When obese adults reduce body size, there is a decrease in fat cell size but no change in cell number. Cell number increases fairly rapidly during the first year of life. Although the precise causes for fat cell development are poorly understood, it does appear that certain practices can affect fat cellular.

An often-asked question concerning weight loss is, “where on the body do changes occur when weight is lost?” The answer is from all over the body, but if the intensity, volume of training is increased the ratio of trunk was found two times greater to extremities.

WEIGHT CONTROL:

The composition of the diet influences the efficiency at which the body converts and stores excess calories as fat. Only about 3% of the calories in ingested fat are required to convert these excess calories to stored body fat, whereas 25% of the calories in carbohydrate are ‘burned in the conversion process. Simply stated, it is easier for the body to make fat from dietary fat than from equivalent caloric excess in the form of carbohydrate. Consequently shifting the diet’s composition towards higher carbohydrates would result in less fat gain. To prevent an increase in body mass and fat because of a caloric disequilibrium, an effective program of weight control must establish a balance between energy input and energy output.

A review of the scientific literature dealing with body mass in obese persons reveals that initial success in modifying body composition has little relation to the long-term effects of maintaining desired body size and shape. The energy balance equation states that body mass remain constant when caloric intake equals caloric expenditure. Any caloric imbalance on the energy output or input side of the equation causes the body mass to change.

There are three ways to “unbalance” the energy balance equation:

- (1) Reduce caloric intake below daily energy requirements
- (2) Maintain regular food intake and increase energy expenditure through additional physical activity above daily energy expenditure and
- (3) Combine methods (1) and (2) by decreasing daily food intake and increasing energy expenditure.

When considering the sensitivity of the energy balance equation in regulating overall energy balance, we note that if caloric intake exceeds output by 100 kcal per day, the

surplus number of calories consumed in a year would be 365 days X 100 kcal or 36500 kcal. Because 0.45 kg of fat contains about 3500 kcal (each pound of adipose tissue is about 87% fat or 395 gm 9 kcal per gram= 3555 kcal per pound), this is equivalent to a gain of 4.7 kg of fat in one year. On the other hand, if daily food intake is reduced by just 100 kcal and energy expenditure is increased 100 kcal by jogging 1 mile each day, and then the caloric deficit is equivalent to a reduction of about 9.5 kg or 21 pound of fat in one year.

Dieting for weight loss creates disequilibria in the energy balance equation by reducing energy intake. A starvation diet or “therapeutic fast” may be recommended in cases of severe obesity where body fat exceeds 40 to 50 % of body mass. One can crash of large amounts of body mass in a relatively short time period by simply not eating, but this success, however, is short-lived and eventually the urge to eat out and body mass is regained. The reason for this failure lies in “set points”. The proponent of a “ set point-theory” argue that the body has an internal control mechanism, a set point, probably located deep within the brain’s lateral hypothalamus, that drives the body to maintain particular level of body fat. The futility of repeated cycles of weight loss and weight gain, the so-called yo-yo effect is shown in food efficiency studies in which efficiency evaluated by the ratio of body mass change to ingested calories. Although the set point theory may be unwelcome news for those who possess a set point that is tuned “too high” the good news, according to the set point advocates, is that sustained, vigorous exercise may lower the set point towards a more desirable level.

This view of obesity is overall simplistic as available evidence indicates that excess weight gain throughout life often closely parallels reduced physical activity rather than an increased caloric intake. To some extent, regular physical activity appears to contribute to the normal functioning of the brain’s feeding control mechanisms. Regular aerobic exercise, even without dietary restrictions, brings about favorable changes in body mass and body composition. When considering exercise for weight control, factors such as frequency, intensity and duration, as well as the specific form of exercise must be considered. Because of 0.45 kg of body fat contains approximately 3500 kcal, the exercise program must establish this negative caloric balance to bring about a 0.45 kg fat loss. Generally, the total energy expended is the most important for weight loss.

For moderately obese children adults, combinations of regular exercise and diet often considerably more flexibility in achieving a negative caloric balance and accompanying fat loss than either exercise alone or diet alone. Clearly physical activity can be used by itself, or in combination with mild dietary restriction, to create an effective loss of body fat. When caloric intake is below the daily energy requirement, the initial decrease in body mass occurs primarily from water loss and corresponding depletion of the body’s carbohydrate reserves; with further weight loss, a larger proportion of body fat and protein is metabolized to supply the caloric deficit created by restricting food intake or increasing physical activity.

The results of the prior studies that have evaluated various approaches to establish a caloric imbalance can be summarized as follows:

1. Exercise combined with dietary restriction is a more effective approach for achieving a long-term negative caloric balance as compared with exercise or diet alone.
2. During the first few days of weight reduction, the rapid weight loss is due primarily to a loss in body water and carbohydrates; larger periods of weight reduction are associated with a substantially greater loss of fat per unit of weight loss.
3. Water intake should not be restricted when beginning weight reduction because this can precipitate dehydration but no additional fat loss.
4. Undesirable psychological and medically related problems may occur with prolonged caloric restriction maintained below minimal energy requirements.
5. Weight loss by diet alone causes a significant loss of muscle mass. Exercise protects against lean tissue losses; thus, more of the weight lost is fat.

OBESITY AND WEIGHT CONTROL: TWO SIDES OF HEALTH COIN

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:ABSTRACT:

INTRODUCTION:

Obesity:

Obesity is becoming more and more of a problem in the world. It is related to a number of diseases including diabetes, coronary heart disease, hypertension, stroke, liver ailments and mechanical difficulties [particularly back and front problem]. As a consequence life expectancy is significantly reduced among the obese population

Obesity often begins early in childhood and, if this occurs, the chances for adult obesity are three times greater compared to children of normal body mass. Until recently, the major cause of obesity was believed to be overeating. There are obviously other factors operative such as genetic, environmental, social and perhaps racial influences, eating patterns, food packaging, body image and biochemical differences related to resting metabolic rate, dietary induced thermogenesis, level of cellular adenosine triphosphate [ATP], Lipoprotein lipase, and other enzymes and metabolically active brown adipose tissue.

METHODOLOGY:

I have conducted a survey on 46 obese men between the age group of 40 to 60 years of age. The weight, height, along with the chest girth, stomach girth and hip girth are measured. The medical history data is collected through the interrogation with each individual. Overall statistical findings are consolidated to give the interpretation.

FINDINGS:

The following are health related problems of obesity:

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