

“Obesity” A challenge of 21st century

Obesity is a leading preventable cause of death worldwide, with increasing prevalence in adults and children, one of the most serious public health problems of 21st century [1]. 2/3rd of the American adult are over weight and 1/3rd are obese. Number of over weight and obese is greater than underweight. There are three fold increase of obesity in the last two decades globally [2]. Silently and suddenly the peoples are killed by obesity.

Obesity is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health, leading to reduced life expectancy and increase health problems [3]. Primarily it occurs when intake of metabolic fuel is greater than the energy expenditure. Excess metabolic fuel is converted into fat by using different metabolic cycle involving the hormone and enzyme. Excess fat is deposited in the fat cells of the adipose tissue. When the fat cells reach its maximum size, further weight gain is continued by the proliferation of new pre-adipocytes. Fat cells once gained are never lost or die [4]. Body mass index (BMI) is the way to measure the fat content of the body. BMI which compares weight and height, defines people as over weight or Pre-obese if their BMI is between 25 and 30 Kg/m², and obese when it is greater than 30Kg/m² [5].

Obesity increases the likelihood of various diseases, particularly heart disease, hypertension, type-2 diabetes, stroke, renal failure, obstructive sleep apnea, certain types of cancer, and osteoarthritis. Obesity is most commonly caused by a combination of environmental overburden like excessive food energy intake, lack of physical activity, and genetic susceptibility. Although a few cases are caused

primarily by genes, endocrine disorders, medications or psychiatric illness. Evidence to support the view that some obese people eat little yet gain weight due to a slow metabolism [6].

Environmental burden complicate the obesity includes availability of food, cost of food, taste of food, snacking of food, energy density of food and the sedentary life styles which encourage the TV watching, increase media exposure. Energy saving appliances, sweeteners, potato chips, soft drinks, psychological response towards the food also enhances the obesity.

Dieting and physical exercise are the mainstays of treatment for obesity. Moreover, it is important to improve diet quality by reducing the consumption of energy dense-foods such as those high in fat and sugars and by increasing the intake the dietary fiber. To supplement this, or in case of failure, anti-obesity drugs may be taken to reduce appetite or inhibit fat absorption. In severe cases, surgery is performed or an intragastric balloon is placed to reduce stomach volume and /or bowl length, leading to earlier satiation and reduced ability to absorb nutrients from food [7].

Conclusion:

Fat cells once gained are never lost. So reduction in the size of the fat cells is the mainstays to control the obesity but not to the number of the cells. Once one started dieting and physical activity to control the obesity, subsequent maintenances of this is important to limit the body weight. The science of all the science; fill your stomach 1/3rd by air, 1/3rd by solid and 1/3rd by water(Al-Hadith). Limit your meal and walk more, be happy.

References

1. Barness LA, Opitz JM, Gilbert-Barness E. “Obesity: genetic, molecular, and environmental aspect”. Am. J. Med. Genet. A 143A (24): 3016-34.
2. Pamela C, Richard A, Denise R. “Obesity” Lipincott’s illustrated review of Biochemistry. 4th edition; Ch-26, p-249-56.
3. “Obesity”. Lancet 366(9492): 1197-209.
4. Pamela C, Richard A, Denise R. “Obesity” Lipincott’s illustrated review of Biochemistry. 4th edition; Ch-26, p-350.
5. WHO 2000 p.9
6. Kushner, Robert (2007). Treatment of the obesity patient p-158.
7. Imaz I, Martinez C, Garcia-Alvarez EE and et all.Safety and effectiveness of intragastric balloon for obesity. “A meta analysis”. Obes Surg **18** (7) 841-6

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