

Bulge of the belly

PTI Feature

Bulge of the belly has been a problem in all times. Charak Sutra written in 1000 BC says cardiac diseases of 'kapha' type are born by the intake of fatty meals, over eating and also by excessive indulgence in sleep, sedentary habits and carelessness.

The sutra conveys almost everything about obesity, that the modern physician may tell you.

Obesity is an accumulation of excess fat. Fat is chemically triglycerides, ester of fatty acids and glycerol. Fat is almost a store of surplus energy, measured in calories, the heat producing value of food.

When supply is sporadic, storage of energy as fat was of survival value for man. A 70 kilo person, also called a reference man normally possesses about 12 kgs of fat.

When he is completely deprived of food, with this stored fat he can survive as long as two months.

But fat mostly burns in the flame of carbohydrates and hence some supplement of the latter needs to be there. Besides being a source of energy adipose tissue also acts as a natural cushion at certain sites and conserves body heat.

Fat depots around pelvis and thigh of females are thought to be of some benefit in child bearing. Blanket of fatty tissue around internal organs provides protection and insulation. In spite of all this, once out of the limit it is viewed as the villain amongst the tissues.

The desirable weight for a particular height has been calculated on the basis of minimum life risk. Upto 10 per cent excess weight is acceptable. A weight 10 to 20 per cent above desirable is called overweight and when more than 20 per cent it is obesity.

Persons are called morbidly obese if their weight doubles. There appears to be no chilling to this suicidal saving. The heaviest person in record was Robert Earl Hughes who was 400 lbs when he was 10 and 700 lbs at 18. He continued gaining weight until he was 1069 lbs at the age of 32 and died.

Obesity is basically a food abuse. It is an imbalance between intake and output of energy. A reference man requires a daily average of 2500 calories. With increased activity the requirement goes higher. On the contrary if the intake increases in the absence of physical activity the surplus energy is stored as fat or adipose tissue.

About nine calories of energy is stored in one gm of fat while only four calories can be accommodated in one gm of glycogen. For economy of space probably body prefers storing energy as fat.

Multiple factors contribute to obesity. There seems to be a strong genetic predisposition. Studies show that if both the parents are lean, the risk of the child becoming obese is seven per cent, such risk increases to 40 per cent if one of them is obese and to 80 per cent, if both.

Eating habits, social customs, sedentary life styles are important acquired factors. At the first cry of the newborn it is asked how big is the baby? Over-enthusiastic parents overfeed the babies with all brands of baby foods. Mothers especially like to see their babies, as bulky as possible.

Kids are bribed with sweets, chocolates, ice creams, soft drinks and like. Added to that the audio visual friends rob of their physical activities, games and sports. Then comes the life of an executive. He travels on his car. Elevators lift him to his office. Social celebrations are the occasions for rich drinks and dinners.

The satiety and feeding centres are located in the brain. By mutual modulations

they control the urge for eating. The former dampens the desire for food while the latter stimulates. A little incoordination among them can lead to over-eating.

Like a thermostat, the body also has an adipostat that can regulate the deposition of adipose tissue. A shift of its set points towards a higher slot can lead to obesity.

There is sufficient evidence that fat cells increase their number in initial years of life and chronically overfed child can develop excess number of fat cells which in later years get loaded with fat.

How to suspect that the surplus is building up?

Sleeves and waist belts getting tighter are common early indications. With little arithmetic, certain indices can also be calculated. One such index is body mass index (BMI). This is one's body weight in kilograms divided by square of height in metres.

This was proposed by Quetelet as early as 1871 and is also known as Quetelet's index. A BMI upto 25 is normal. Garrow grades intensity of obesity into four. Upto 25 is grade O. From 25 to 29.5 is grade I, between 30 to 40 is grade II and exceeding 40 is grade III.

Sites to look for fat deposits are abdomen in man, and abdomen, buttock, thighs and arms in women. Pinch the skin by thumb and index fingers at the back of the arm or just below the scapula or shoulder blade. The skinfold thickness should not exceed one inch. Alternatively circumference at the waist divided by that at the buttock should not be more than 0.85 in man and 0.95 in women.

There is still a simpler method. The desirable weight for a five feet man is 105 pounds. Add six pounds for additional inch of height. For a five feet woman the corresponding weight are 105 pounds respectively. Watch that the weight does not go ahead of the height.

Obesity is not a disease. But it is known to have strong alliance with many. It is harmful to the heart in more than one ways. This was even known in the days of Charak.

For each kilogram of extra fat the heart has to pump an additional 20-30 millilitre of blood and to irrigate 35 kms of extra blood vessels.

Think of the joints. How can they carry

their masters' extra load?

They suffer early wear and tear and start grumbling with swelling and pain. Fat and flabbiness predispose to diabetes mellitus, gall stones, hypertension and atherosclerosis.

Weight control is not only an individual obsession but also a national nemesis. Prescription for the problem is simple. It is less calories in and more calories out.

A daily intake of 1200 to 1500 calories is ideal in a diet control regime. Oil and butter should not contribute more than 20 per cent of the total intake. The diet must be fibre rich.

Losing weight by dieting alone amounts to starvation. It burns about 50 per cent body's valuable lean mass, mostly the muscles.

Exercise burns more fat. The amount of sweat shed in physical exercise is the measure of energy spent.

Aerobic exercises, walking, jogging, swimming and yoga are media favourites of the day. They cater to the needs of both poor and rich. Jogging, cycling and brisk walks consume an average of seven calories a minute.

Do medicines help? Doctors say they are worth trying. Some like amphetamine and dexfenfluramine act by releasing serotonin, a powerful neurotransmitter. This depresses the feeding centre.

Also of some help is Ian Meclean Briad's 'New balloon 92' technique, tried out on 500 overweights. Briad, through a saline balloon created a feel-ful sensation in the stomach long before it would reach the point of calories overload. It is another way to reach satiety with less food.

Briad's patients lost an average of 7-12 kgs in five months.

The practice of lipo suction sucks out fat globules and sometimes tried to remove excessive fat from localised sites like breast or buttock. Liposurgery excises extra fat and skin.

Self help is the best help-holds true for obese. If the battery of will power is strong, switch on the self power. Starter for diet and exercise regime. Procrastination may be worse than obesity.