

National Nutrition Month 2018

Theme: “Right way to Reduce Abdominal Obesity”

Fact Sheet

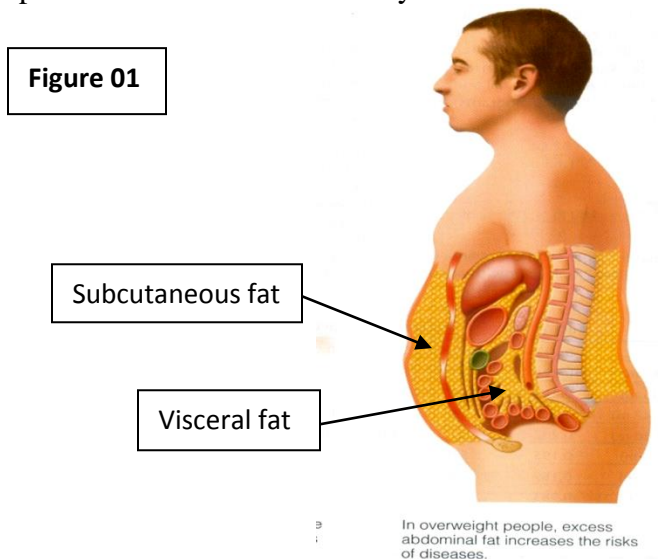
Obesity has emerged as a public health problem over the last few decades and will continue to be a major contributory factor for the national non communicable disease burden. Findings of National Prevalence surveys strongly indicate progressive rise of obesity. National Obesity, Overweight and Abdominal Obesity prevalence study 2010, shows prevalence of overweight, obesity and abdominal obesity 16.8%, 3.7%, and 26.2% respectively among adults over 18 years. In STEPS survey of 2015, overweight and obesity among 18-69 year olds was 23.9% and 5.9% respectively. Prevalence was higher in females and urban settings.

Waist circumference, which measures abdominal obesity, has also increased. In National Obesity, Overweight and Abdominal Obesity prevalence study 2010, mean waist circumference had been 78.1cm among males and 76.7 cm among females. These figures have risen to 82.3 cm in males and 82.1 cm in females according to the findings of STEP survey (2015).

In assessment of overweight and obesity lot of emphasis is put on assessment of Body Mass Index (BMI). Nevertheless, assessment and intervention to abdominal obesity is equally important, as research evidence has clearly indicated a strong association of abdominal obesity with many non communicable diseases.

What is abdominal obesity?

Obesity develops when energy intake exceeds energy expenditure over a period of time. An excess of 100 kcal/day leads to an increase of 5 kg of fat over 1 year. When energy intake is more than energy expenditure it is known as positive energy balance and it leads to deposition of excess energy as triglycerides (fat) in adiposities. This excess fat is mainly deposited around organs of the abdomen (liver, pancreas, intestines and kidneys) which is known as visceral fat and in the subcutaneous tissue beneath the skin which is known as subcutaneous fat. Visceral and subcutaneous fat jointly contribute to abdominal obesity. Figure 01 depicted the distribution of abdominal fat (visceral and subcutaneous fat) in a person with abdominal obesity.



Who is at risk for Abdominal Obesity?

Abdominal obesity is more apparent among individuals who regularly consume an energy dense diet with high amounts of refined carbohydrates, sugar, saturated fat and Trans fat and no or less physical activity. Increased availability and accessibility to fast foods, processed foods, calorie dense foods and rapid urbanization has led to unhealthy dietary patterns and sedentary life style of Sri Lankans in recent decades.

Abdominal Obesity is associated with major health risks. They are,

- Ischemic heart disease
- Type 2 diabetes
- Raised blood pressure
- Stroke
- Breast and colorectal cancer
- Alzheimer's disease (mental disorder)

Assessing abdominal obesity

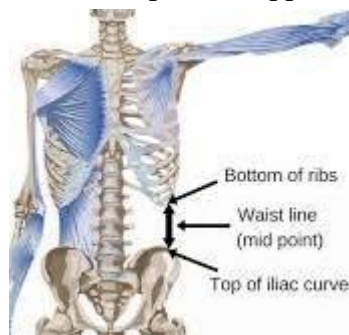
Waist Circumference (WC) is commonly used as a measure of abdominal obesity in population screening. WHO recommends use of waist circumference along with BMI, in planning intervention strategies especially in population with higher risk of abdominal obesity. The cut off values of waist circumference to define abdominal obesity has been laid by WHO.

Table 1: International cut-offs for WC

	Male	Female
Asian Cut Offs	≥90 cm (36 inches)	≥80 cm (32 inches)
Caucasian Cut-offs	≥102 cm (40.8 inches)	≥ 88 cm (35.2 inches)

Waist circumference measurement technique

WHO Stepwise Approach to Surveillance (STEPS) protocol provides a detailed guide for measurement of waist circumference.



Waist circumference should be measured at the midpoint between the lower margin of the least palpable rib and the top of the iliac crest, using a stretch-resistant tape to reduce differences in tightness. Tape should be parallel to the floor at the level at which the measurement is made. The subject should stand with feet close together, arms at the side and body weight evenly distributed, and should wear little clothing. The subject should be relaxed. This can be achieved by asking subject to take deep

natural breaths before taking measurements. Measurements should be taken at the end of a normal expiration as fullness of the lungs and position of diaphragm influences the accuracy of the measurement. Measurement should be repeated twice; if the two measurements are within 1 cm the average should be calculated. If the difference between the two measurements exceeds 1 cm, measurements should be repeated.

How to reduce Abdominal Fat

It is extremely difficult to reduce abdominal obesity once it is deposited, hence all possible attempts should be made to prevent/minimize deposition of abdominal fat. Since such fat deposition is mainly

a result of excessive calorie intake, in the form of carbohydrates, fat and low physical activity, those risk factors need to be addressed in preventive and control measures.

1. Cut down daily intake of carbohydrates

In Sri Lankan context main meals are mostly based on rice, rice flour, or wheat flour which is the main source of carbohydrates. Usually the portion of rice, rice flour, or wheat flour exceeds half of the food plate. It is essential to limit carbohydrates intake to less than half of the plate to overcome abdominal obesity. Also it is essential to replace foods with refined carbohydrates (such as polished rice, bread, string hoppers, noodles made of refined flour) with foods made of whole grains and roots/yams with complex carbohydrate.

2. Avoid sugary foods and Sugar Sweetened Beverages (SSBs)

Added sugars are sugars that are added to foods or beverages when they are processed or prepared. This does not include naturally occurring sugars such as those in milk and fruits. Major sources of added sugars are sugary foods and Sugar Sweetened Beverages (SSBs). Many sugary snacks available in the current food market are based on sugar, honey or jaggery (either mono-sacharides - glucose, fructose or disaccharides- sucrose).

Commonly consumed SSBs are soft drinks, cola drinks, sugar added juices, flavoured milk, sweetened tea and coffee, sports drinks and energy drinks. They are sweetened with either sucrose or high-fructose. Emerging evidence suggests that greater consumption as well as habitual/regular intake of SSBs is associated with fat accumulation in visceral adipose tissue, hence higher risk of abdominal obesity.

Liquid sugar is even worse in this regard. Liquid calories don't get "registered" by the brain in the same way as solid calories, so when you drink SSBs, you end up drinking more total calories. But this is not applied to whole fruits, which are extremely healthy and have plenty of fiber that mitigates the negative effects of fructose.

3. Avoid trans fats and limit saturated fats

Foods that are likely to contain Trans fats are: margarines, bakery products eg.(biscuits, crackers, cookies, cakes), potato chips, store bought popcorn and deep fried fast foods (fried chicken, fried fish, french fries, doughnuts, cutlets, patties, rolls). Sources of saturated fat are mainly from animal products: red meat, whole milk dairy products (cheese, ice cream, butter).

Trans fat has a very powerful association with weight gain, even more than other types of fat. Diets rich in trans fat cause a redistribution of fat tissue into abdomen and lead to abdominal obesity and higher body weight even when calories are controlled. Hence, trans fats should be limited to less than 1% of the total fat consumption.

Coconut oil is a plant based source of saturated fat. Nevertheless coconut oil is high in fatty acids of a Medium Chain Triglycerides (MCTs). These fatty acids have been shown to boost satiety compared

to other fats, as well as increase the amount of calories burned. Hence, replace your other cooking fats/oils with coconut oil and consider cooking your foods in coconut oil, but using small amounts.

4. Increase the portion of protein in meals

Increased intake of protein reduces hunger and improves feeling of fullness hence prevents overeating. It also increases metabolic rate and controls loss of muscle mass which can occur in weight loss in long run.

Sources of high-protein foods that can be added to daily diet are whole eggs, fish, dried fish, meat, legumes, nuts, and dairy products such as yoghurt, fresh milk. Contrast to previous myths against eggs (high in cholesterol), current understanding is that they don't adversely affect on blood cholesterol and recommends consumption of one egg per day for a healthy adult.

5. Increase the consumption of foods rich in fiber

Increased intake of food containing fiber has shown to slow down visceral fat accumulation by improving satiety/fullness, suppressing appetite and delaying gastric emptying. Foods that are high in fiber are whole grain bread, brown rice, unpolished grains like oats, kurakkan, corn; vegetables such as kohila, ladies fingers, carrot; and fruits such as wood apple, guava, mango, apple, orange, banana.

6. Drink plenty of water

Adults need 1-2 liters (6-8 cups of 200ml volume) of water daily. However, this number varies depending on activity level and age. **People with chronic diseases such as heart diseases and kidney diseases need to get medical advice on how much water they should drink per day.* It's important to always carry a water bottle to strengthen this as a habit. Further soft drinks and sweetened beverages should be replaced with water and more fresh fruits and non-starchy vegetables with high water content such as cucumbers can be included in diet.

7. Engage in regular exercise.

Regular aerobic exercise is important to reduce abdominal fat. Aerobic exercise like walking, running, swimming or playing for 30-60 minutes on most days of the week has been shown to cause major reductions in abdominal fat and help prevent visceral fat from accumulating.

8. Get Plenty of Sleep

The right amount of sleep is key in preventing visceral fat as well. People who averaged 6 to 7 hours a night of sleep have lowest levels of visceral fat. Less than six hours and above 7 hours are known to associate with more visceral fat.

9. Reduce Stress

If your days are full of stress, cortisol level in the body will increase. High cortisol levels associated with stressful life styles, contribute to accumulation of abdominal fat. Therefore, it is essential to engage in stress relieving activities such as listening to relaxation music, meditation, yoga exercises, and deep breathing exercises on regular basis. Adhering to coping mechanisms such as time management, skill development activities to prevent stressful life situations is also important.