

PART 1 of 3: In this first story, Shereen Ann Ali looks at what fat is, why it's both a good and a bad thing, and what medical experts say about the risks of being overweight.

Published Wednesday, July 3, 2019 in T&T Newsday newspaper. Online link:

<https://newsday.co.tt/2019/07/03/fat-more-to-love-or-more-to-fear/>



Information on fat and weight gain can be confusing. Some fat is good: but too much fat in the body can have serious health consequences. Illustration by Shereen Ann Ali.

Fat: More to love... or more to fear?

What science and doctors are saying about fat

**“When you have a fat friend,
there are no see-saws, only catapults.”**

– Comedian Demetri Martin.

Fat can shiver delicately, jiggle playfully, or hang in ominous, implacable folds around your belly, weighing down your life. Fat, in the right places, can be a tantalizing attraction; in the wrong places, fat can be a source of shame. Fat is an essential healthy part of our body flesh and our physical selves, without which none of us can survive; yet too much of a good thing can harm us. Like much in life, it’s all about the balance.

In Trinidad and Tobago, according to 2016 data from the World Health Organization, 48.1% of all TT adults (18 and over) are overweight. By gender, they found 38.7% of our men were too fat and 57.1% of our women were too fat. While TT did not make the WHO’s top 20 most overweight countries in the world list (which is topped by Oceania, where a whopping 75-88% of their people are overweight), our own high figures, with almost half of our population too fat, are worrying.

So what exactly is “too fat” or “overweight”? According to the Centers for Disease Control and Prevention (CDC), weight that is higher than what is considered as a healthy weight for a given height is described as overweight or obese. Body Mass Index, or BMI, is used as a screening tool to assess overweight or obesity in adults. Body Mass Index (BMI) is a person’s weight in kilograms divided by the square of height in meters. A high BMI can be an indicator of high body fatness. The CDC advises:

- If your BMI is less than 18.5, it falls within the underweight range.
- If your BMI is 18.5 to <25, it falls within the normal.
- If your BMI is 25.0 to <30, it falls within the overweight range.
- If your BMI is 30.0 or higher, it falls within the obese range.

Obesity is frequently subdivided into categories:

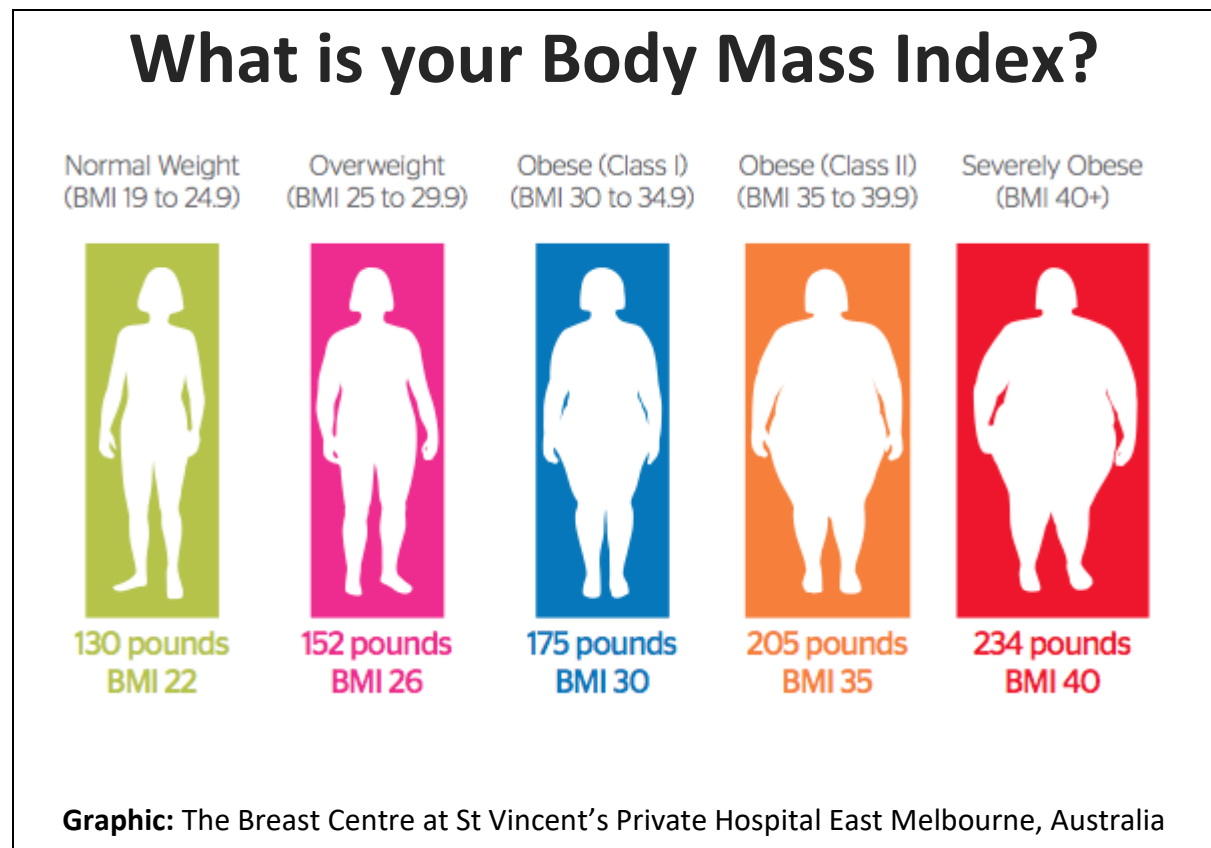
- Class 1: BMI of 30 to < 35
- Class 2: BMI of 35 to < 40
- Class 3: BMI of 40 or higher. Class 3 obesity is sometimes categorized as “extreme” or “morbid” obesity, with individuals 100 pounds or more over their ideal body weight.

What is fat?

So what exactly is fat? A 2013 report by the National Institute of General Medical Sciences (NIGMS) states that in human plasma alone, there are some 600 different types of fats or lipids relevant to our health.

According to a 2013 TED-Ed video by George Zaidan, the fat in our bodies is made up of molecules called triglycerides. Triglycerides are fats

(or lipids) in our blood which store unused calories and provide the body with energy.



Lipids come in many different forms. Some are saturated with hydrogen and are usually solid at room temperature, while unsaturated fats are often liquid at room temperature. Cholesterol is yet another kind of fat used to build cells and certain hormones.

“Many lipids are associated with diseases – diabetes, stroke, cancer, arthritis, Alzheimer's disease, to name a few. But our bodies also need a certain amount of fat to function, and we can't make it from scratch.”
(NIGMS report).

What fat cells look like

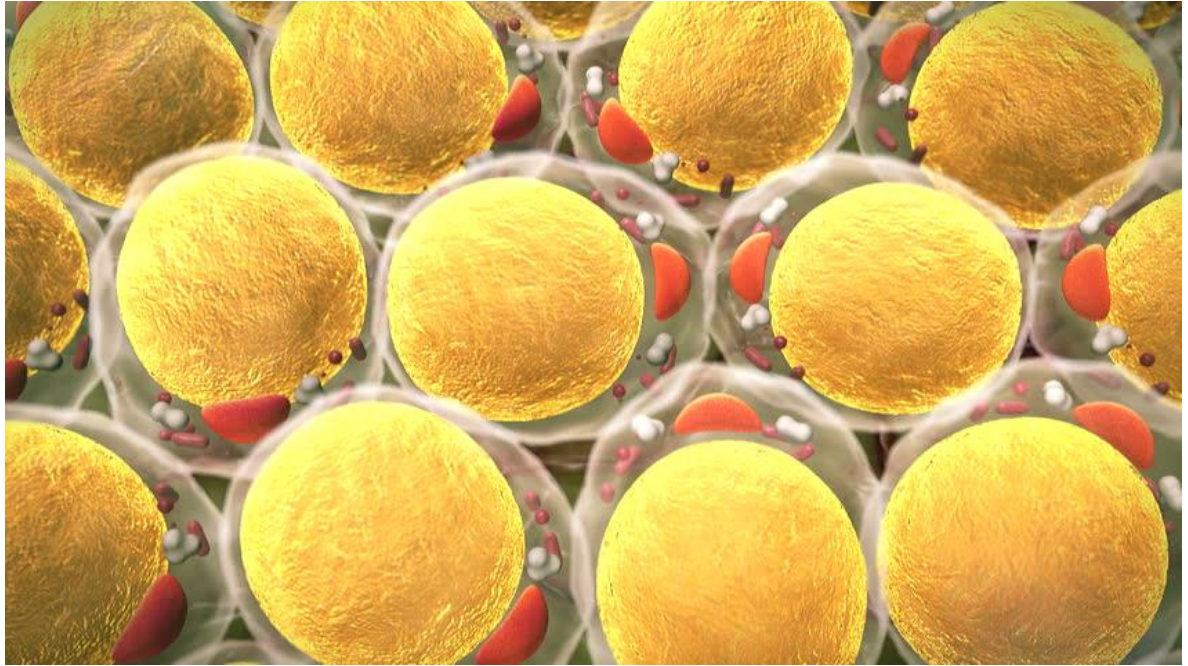


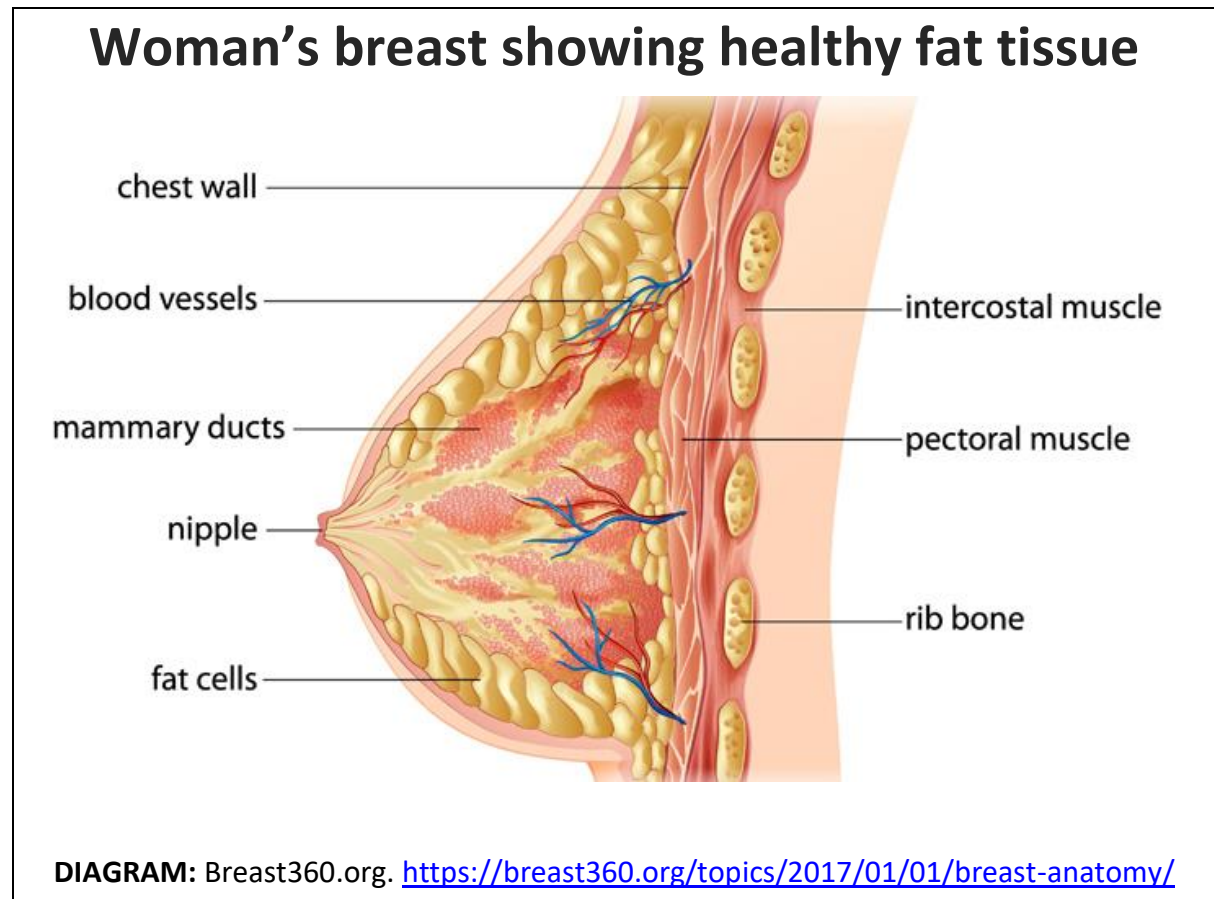
Photo: Shutterstock

Fat: Why it's good

Fat is important. The fat tissue in women's breasts ranges from 10% to 90%, and ovulation is tied to a woman's fat stores: women who are too thin may simply fail to menstruate. The Arc Fertility Clinic based in Cupertino, California, reports: "Sex hormones are fat soluble and they are stored in the body's fat layers. Women that have a low BMI produce a reduced amount of oestrogen which can lead to an abnormal menstrual cycle. Amenorrhea, or the lack of a menstrual cycle, is a result of a low BMI." Our bodies all need fat to be conceived in the first place, to function after we're born, and to help prevent disease throughout our lives.

Fat does many good things. It provides a cushion that helps protect our vital organs. It acts as an insulator, helping us to maintain a proper body

temperature. Fat also enables our bodies to process vitamins A, D, E and K, which are all fat soluble and vital to good health. We all need certain essential fatty acids which we must obtain from the food we eat because our bodies do not make them.



Fat, of course, also makes many foods taste so much better. Crispy fried chicken, mashed potatoes slathered in oceans of butter, sweet creamy desserts and puddings, piquant curry sauces rich with meat oils or fatty vegetarian cheeses, macaroni pie or lasagnas that melt in your mouth, and Christmas ham fragrant with clove-infused melted hog drippings would certainly not be as scrumptious without the unique special deliciousness of fat.

Fat: Why too much is bad

Some fat in our bodies is a very good thing. But many doctors say problems arise when we consume and store too much fat in our bodies. Many doctors agree that poor food choices over time, including eating too many “bad” fats of the wrong type, without using up most of that extra energy, are one sure way to ill health.

Fat is a concentrated source of energy; one gram of fat has nine calories, much more than a gram of protein or carbohydrate which each contain only four calories. So it is very easy to consume too many calories when eating fatty foods, especially as fatty goods often taste so good. The body will simply store the unused calories as fat.

Evolution to...fatness?

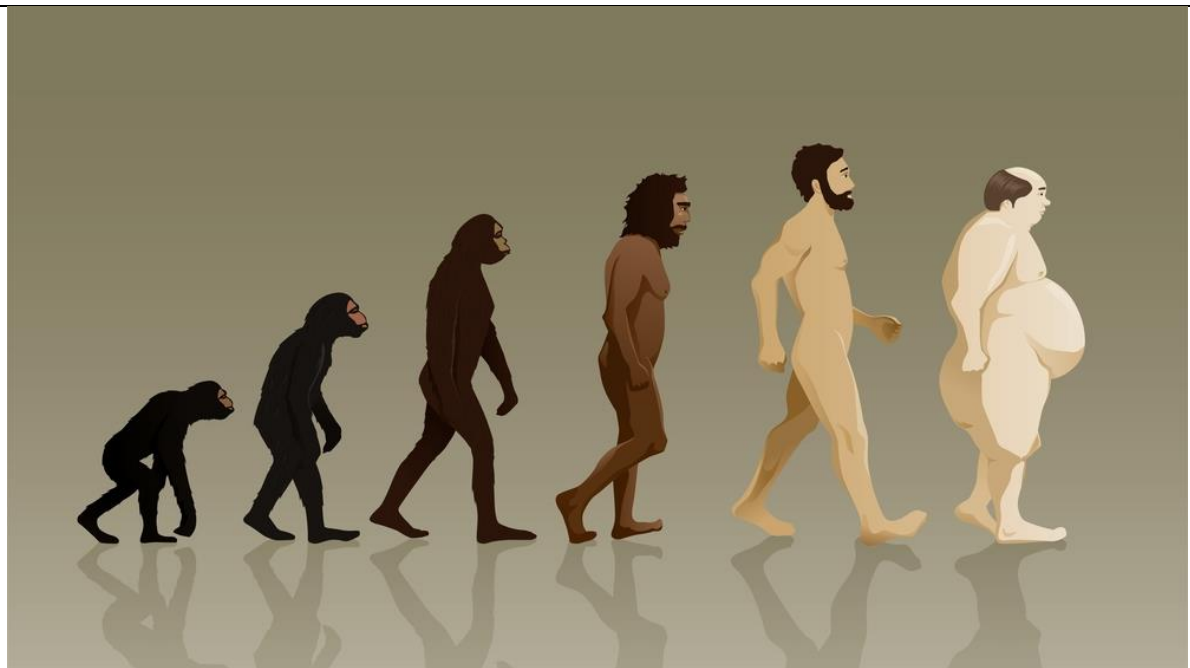


DIAGRAM: iStockphoto.com

While it is theorized that in ancient times, human bodies evolved to store fat in order to survive the leaner times when food would become scarce, in many parts of the modern world, seasonal famine is no longer so widespread. This means that, especially in sedentary urban cultures where people are not active or do not exercise, their bodies store fat all year round but never burn it off, leading to them becoming overweight or in extreme cases, obese.

“Obese” simply means fat that has become so voluminous and abundant on your body that it is unhealthy for you, putting you at higher risk for a host of ailments and fat-related diseases. When people have a Body Mass Index of 30 and above, they are considered obese.



**Prof Dilip Dan:
Too much fat makes you sick**

Prof Dilip Dan, head of the Department of Clinical Surgical Sciences at UWI, Caribbean pioneer in laparoscopic and bariatric surgery, and president of the Caribbean Obesity Society, in an interview with Newsday, said excessive fat is directly related to increased diseases and deaths from diabetes, hypertension, heart disease, and cancer. There is also a clear link between too much fat and conditions such as infertility, gastro-oesophageal reflux, obstructive sleep apnea, joint and back pain and many other conditions, he said.

“It is not only excessive amount of fat that matters but also the distribution of the fat,” noted Prof Dan. “The central or abdominal fat is

Fat vs healthy human



Body scan of a fat person compared to a normal person. Excess fat is associated with stroke, liver disease, Type 2 Diabetes, colon cancer, heart disease, and osteoarthritis. **Image:** PositiveMed site: <https://positivemed.com/2012/11/09/the-trouble-with-fat/the-trouble-with-fat-2/>

considered worse as it is strongly associated with metabolic disorders like diabetes and hypercholesterolemia. Though peripheral distribution of fat is not as bad with regards to metabolic disorders, it causes strain on the heart, joints and back and can lead to significant disabilities.”

He added: “Because the central distribution of weight is considered more dangerous, persons who may not appear very obese to the eye can be at very high risk for death due to metabolic diseases. This is very apparent in the

East Indian and Chinese population who develop diabetes and heart disease at a much lower Body Mass Index than the Caucasian and Afro-Trinidadian. It is for this reason the international bodies have lowered the weight classification on degree of obesity in this population.”

So can't some people be fat and healthy? Prof Dan said although there is indeed such a thing as "healthy obese", it only applies to "very well compensated, usually younger obese individuals who have not developed any health issues as yet." Given time, these individuals, too, will fall ill if their weight does not go down, he said.

What about slim people who have high cholesterol? Prof Dan said: "This is not just related to weight, but diet and also genetics. In the same way, obesity is strongly associated with diabetes, but one does not need to be obese to have diabetes."

Prof Dan also noted: "Increased weight can lead to poor self-esteem and depression and in addition to the many co-morbidities, directly affects the quality of one's life."

Fat can shrink brain volume

Excess fat can also affect your brain, especially if you are a man. A recent study from Leiden University Medical Centre in the Netherlands found that higher levels of body fat were tied to lower brain volumes in certain areas. Specifically, too much body fat was linked to reduced amounts of gray matter — the brain tissue that contains nerve cells — in structures in the centre of the brain. The link between body fat and brain volume was stronger among men compared with women, according to the study which was published on April 23, 2019 in the journal *Radiology*.

The Leiden University Medical Centre researchers also saw changes in the brain's white matter — long nerve fibres that allow areas of the brain to communicate — tied to body fat. (Reference: Dekkers, I. A., Jansen, P. R., & Lamb, H. J., 2019: **Obesity, Brain Volume, and White Matter**

Microstructure at MRI: A Cross-sectional UK Biobank Study.

Radiology, 181012. Link: <https://doi.org/10.1148/radiol.2019181012>)

It's not how much fat you eat, it's what kind

One thing most scientists agree on is that it's not so much the amount of fat we eat, but what kind of fat we eat that most affects our weight, our cholesterol or our risk of heart disease and other ailments. A February 2015 article by the Harvard Medical School, updated in 2018, noted:

“For long-term health, some fats are better than others. Good fats include monounsaturated and polyunsaturated fats. Bad ones include industrial-made trans fats. Saturated fats fall somewhere in the middle.”

The Harvard Medical School article says **trans fat** is the worst possible type of dietary fat: “It is a by-product of a process called

hydrogenation that is used to turn healthy oils into solids and to prevent them from becoming rancid. Trans fats have no known health benefits and there is no safe level of consumption.” (Source:

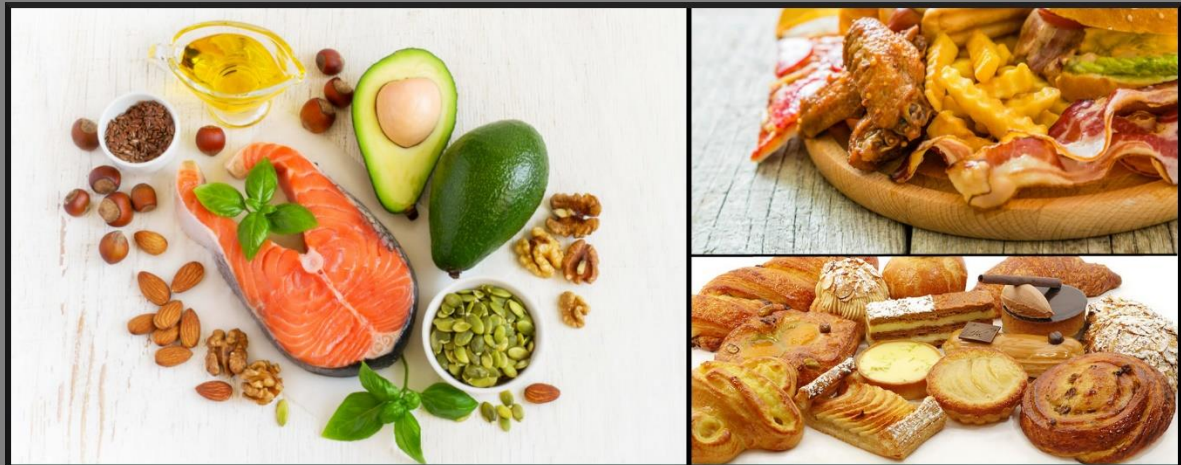
<https://www.health.harvard.edu/staying-healthy/the-truth-about-fats-bad-and-good>)

So which foods contain trans fats? Think: doughnuts, cookies, pies, cakes, coffee creamer, vegetable shortenings, refrigerated dough products, fried chicken, French fries and most fast foods, including frozen pizza. It's a good idea to always check the nutrition part of the label. If it contains partially hydrogenated oils, it has trans fat.

The Harvard Medical School article warns: “Eating foods rich in trans fats increases the amount of harmful LDL cholesterol in the bloodstream and reduces the amount of beneficial HDL cholesterol. Trans fats create inflammation, which is linked to heart disease, stroke, diabetes, and

other chronic conditions. They contribute to insulin resistance, which increases the risk of developing type 2 diabetes. Even small amounts of trans fats can harm health: **for every 2% of calories from trans fat consumed daily, the risk of heart disease rises by 23%.**”

Good fats versus bad fats



Sources of good fats (to be eaten in moderation) include sources of monounsaturated fat such as nuts, vegetable oils (e.g. olive or peanut oil), peanut or almond butter, and avocado. Good polyunsaturated fat sources include fatty fish like sardines, trout, salmon or herring; flaxseeds and other seeds (e.g. chia, sesame, pumpkin, sunflower). Whole eggs, cheese and full fat yogurt are also sources of good fats – in moderation.

Sources of bad fats include baked goods (cakes, pastries, cookies), lard, cream, butter, margarine, shortening, processed snack foods, fatty cuts of beef, pork or lamb, fried chicken, bacon, chips, pizza and fast foods which contain partially hydrogenated oils – any amount is bad for your body.

Some fats are good for you. Sugar may be the real villain.

There is good news in the trenches of fat warfare. So-called “good” fats (monounsaturated or polyunsaturated) come mainly from vegetables, nuts, seeds, and fish, and can be a healthy part of your regular food. And there are increasing views that fat in itself is not necessarily the real villain in our diets; a little butter or the occasional fried chicken leg won’t kill you. Much greater dangers may come from eating food with too many hidden added sugars and refined carbohydrates – which includes many processed food products in our groceries.



Eminent but controversial UK cardiologist Dr Aseem Malhotra is a passionate advocate against excess sugar consumption. He promotes a sugar-free, low-carb, moderately fatty diet as the path to good health. While he sees nothing wrong with the occasional treat, he says sugar should never be part of any recommended regular daily diet. Dr Malhotra believes all nations should regulate sugar in the same way they do tobacco, because we are all becoming too sugar-addicted, with bad health consequences.

(See his persuasive article here:

<https://www.menshealth.com/uk/nutrition/a755000/the-truth-about-fat-and-sugar-is-finally-explained/>)



So the message is: Be more aware of what you eat for your own long-term health. You can save yourselves thousands of dollars in medical bills if you learn to eat healthier as a routine part of your daily life. Healthy, nutritious whole food is indeed the most basic form of self-care and medicine – as the ancient Hindu Ayurvedic practitioners were keenly aware of and put into practice many thousands of years ago.

Next – Part 2: Why are we getting so roly-poly?

Reasons for our ballooning weight problems.



How do you calculate your BMI?

Body Mass Index is a person's weight divided by their height in units squared and is a quick way of estimating a person's body fat. The formula is $BMI = \frac{kg}{cm^2}$ where kg is a person's weight in kilograms and cm^2 is their height in centimetres squared. The World Health Organization defines being overweight as having a Body Mass Index of 25 or greater. Obesity is defined as a BMI of 30 or greater.

BMI is not a perfect test, nor is it a measure of health: it is simply a measure of size. BMI results can be thrown off by pregnancy or high muscle mass, and it may not be a good measure of health for children or the elderly. Critics of BMI say BMI does not distinguish between fat and muscle. Also, BMI does not reveal different types of fat: belly fat, which is known as visceral fat, is more harmful than fat that simply sits under the skin.



What are the world's fattest countries?

24/7 Wall St – a Delaware firm which runs a financial news and opinion company with content delivered over the Internet – reviewed **World Health Organization 2016 BMI data for adults in 195 countries**. They found the 20 countries with the largest percentages of adults (18 and over) who are overweight (defined as a BMI of 25 and over) are located almost entirely in **Oceania and the Middle East**. The 24/7 Wall St review ranked the top 20 fattest countries, based on 2016 data, as follows:

1. **Nauru**, Oceania – 88.5% overweight
2. **Palau**, Oceania – 85.1% overweight
3. **Cook Islands**, Oceania – 84.7% overweight
4. **Marshall Islands**, Oceania – 83.5% overweight
5. **Tuvalu**, Oceania – 81.9% overweight
6. **Niue**, Oceania – 80% overweight
7. **Kiribati**, Oceania – 78.7% overweight
8. **Tonga**, Oceania – 78.5% overweight
9. **Samoa**, Oceania – 77.6% overweight
10. **Micronesia**, Oceania – 75.9% overweight
11. **Kuwait**, West & Central Asia – 73.4% overweight
12. **Qatar**, West & Central Asia – 71.7% overweight
13. **Saudi Arabia**, West & Central Asia – 69.7% overweight
14. **Jordan**, West & Central Asia – 69.6% overweight
15. **Lebanon**, West & Central Asia – 67.9% overweight
16. **United States**, North America – 67.9% overweight
17. **United Arab Emirates**, West & Central Asia – 67.8% overweight
18. **Libya**, West & Central Asia – 66.8% overweight
19. **Turkey**, West & Central Asia – 66.8% overweight
20. **Malta**, Europe – 66.4% overweight

(Source: <https://247wallst.com/special-report/2018/07/11/the-worlds-most-overweight-countries/>)