

# SUGAR AND HEALTH

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4/19/2014

# Sugar Sugar everywhere...what's the big deal ?

- ✓ INTRODUCTION
- ✓ TYPES OF SUGAR
- ✓ WHY IS SUGAR NEEDED?
- ✓ LACK OF SUGAR IN THE BODY
- ✓ PROS & CONS OF SUGAR?
- ✓ NATURAL SUGAR VS ARTIFICIAL SUGAR
- ✓ EFFECTS OF SUGAR ON HEALTH
- ✓ WAY FORWARD- 'SUGAR CAMPAIGN'



# Introduction

- ▶ From a 4pm chocolate pick-me-up to a sweet cup of tea, everyone has their sugary pleasure. Less tempting is the side of the guilt, as we're told esp these days how detrimental to health and well-being sugar is. But where has the notion come from, and is it really the case?

Sugar has been an important ingredient in people's diets for centuries.

- ▶ **The question still is “could the sweet stuff people have been eating forever really be so terrible”?**
  - ▶ We actually do need sugar; it's our body's main source of fuel.
    - ▶ **The key is to eat strategically.**

# What is sugar?

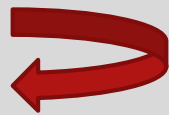
> The term "sugar" is commonly associated with sweet treats or a white crystalline powder you add to foods; however, sugar is also a classification of carbohydrates.

> The family of sugar includes;

**Monosaccharides** - single units

**Disaccharides**- double units

(e.g. milk, fruit, honey, juice, table sugar).



(SIMPLE SUGARS)

**Oligosaccharides** or **Polysaccharides**- multiple units (COMPLEX CARBOHYDRATES). (e.g. starchy vegetables, cereals, grains, fiber).



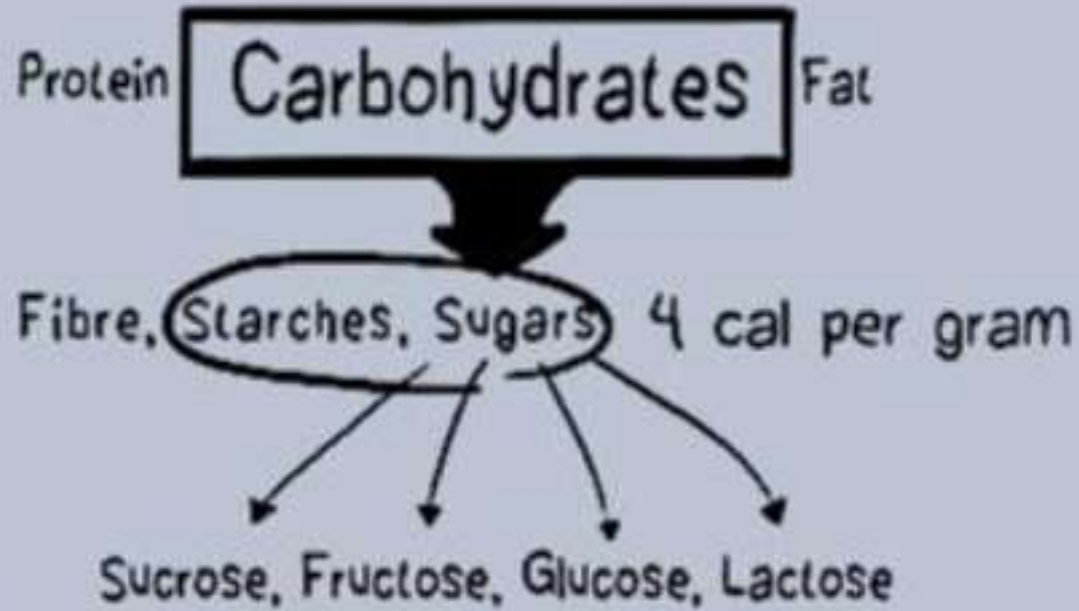
> All carbohydrates contain sugar, but depending on their chemical structure, simple or complex, they are processed differently in the body. The primary role of carbohydrates is to supply energy to all cells in the body.

# What is sugar?

- ▶ All digestible simple sugars and complex carbohydrates eventually get converted to glucose in our body.
- ▶ Although proteins & fats can provide energy to the body, sugars are the predominant source of energy our cells use as fuel. Carbohydrates provide energy of 4 Kcal/g, we consume, whether we eat them as simple sugars or complex.
- ▶ **After we eat simple sugars or complex carbohydrates , our blood glucose level rises. Insulin, a hormone is produced, which signals cells to take the glucose out of the bloodstream and use it for energy. Excess glucose will be stored as glycogen in our liver and muscle. If there is still excess glucose after maxing out glycogen storage, it will be converted and stored as body fat.**



# THE DIFFERENT TYPES OF SUGAR



# Why is sugar needed

- ▶ **The cell's ability to produce energy is critical.**

Human body is made up of trillions of cells which are the building blocks for the tissues and organs of our body.

Our cell health is critical to overall health and for a nourished body.

- ▶ Every minute of every day, cells must convert nutrients from the foods we eat into usable energy to power growth, repair, reproduction and movement.

- ▶ **And guess what?**

- **Our body's response to sugars does not depend on whether they are naturally present in a food or added to the food.**

- **It's the total calories consumed in whole which determines the health & nutrition of the body.**

- **Sugar, in the form of glucose, is the primary source of energy for every cell in the body.**

- **Our Brain being the most energy demanding organ uses only glucose as the source of fuel to perform its functions such as thinking, memory, learning & signaling the body for its various activities.**

# Why is sugar needed- contd.

- ▶ Sugar is an important natural preservative in foods. It provides taste & texture to food items.
- ▶ Hoard of energy: Sugars and starch supply energy to the body in the form of glucose.
- ▶ **Sugar helps increase the palatability of nutrient dense foods such as yogurt , whole grain & fiber-containing breads and cereals making it a key partner in NUTRIENT DELIVERY...**
- ▶ Supply of micro nutrients: Eating plenty of these foods, within a calorie-controlled diet promotes health and reduces chronic disease risk.
- ▶ Skin health – Sugar's glycolic acid can be very helpful in maintaining the health and look of your skin. Using it can help elimination blemishes and restoring the balance in the skin's oils.
- ▶ Medical uses of sugar: Medical uses of sugar can be used to make oral rehydration solution (ORS) which can help to prevent dehydration in children who have infantile diarrhea or vomiting.



# Lack of Sugar in the body..

- > When our cells don't have enough glucose to do their job ,they find alternative means to get their energy,
  - either Lipolysis (fat breakdown) or
  - Gluconeogenesis (new sugar creation from our own body tissue)
- > These processes require the release of adrenaline and cortisol, commonly known as stress hormones. The body in the long run is not designed to live off these stress hormones.
- > **The long term results are bad...**
  - ditching sugar can destroy metabolism and lead to a weakened immune system, poor digestion, impaired sexual/reproductive function, and accelerated aging.**
  - If we cut out all sugars, our body would soon begin to fail. our brain especially relies on sugar, or glucose, to function. If we don't have enough sugar in our bloodstream, we can become confused, forgetful, or even lapse into a coma.***

# Natural Sugar V/S Artificial Sugar

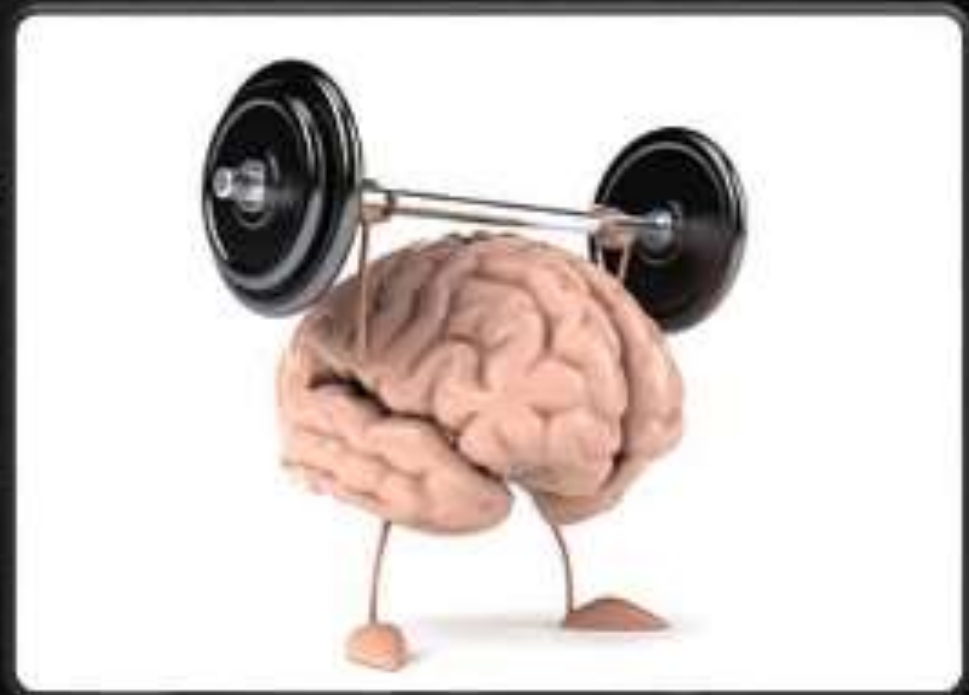
- ▶ Naturally occurring sugar is the sugar found in whole, unprocessed foods, such as milk, fruit, vegetables, and some grains. One of the most common natural sugars is fructose, which is found in fruit.
- ▶ Sugar gives a satiety value to the body in terms of calories.
- ▶ Artificial sugars trick your body thinking that its receiving sugars and starts producing huge amounts of insulin. This insulin produced becomes 'belly fat' when the sugar does not come and your brain continues to signal that it needs massive dose of sugar.
- ▶ Artificial sweeteners increase your carb craving & disrupt your intestinal micro flora.. thereby raising risk of both obesity & diabetes.



## What Does Our Body Do With Sugar?

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- It's absolutely necessary for our bodies to function!
- Brain fuel
- Immediate energy for the body
- Helps make insulin
- So...what's the problem?



# Effects of Sugar on Health...

> On some level, sugar makes us happy. Whether because it increases serotonin levels, which acts as an anti-depressant, & dopamine levels which triggers our experience of reward & pleasure, or simply because we know its indulgent and tastes good.

> **But sugar has received a bad reputation of late, being deemed as the 'new cocaine' in countless articles that claim its consumption, is responsible for ;**

- **obesity**
- **oral health**
- **diabetes**
- **depression**
- **other lifestyle diseases.**

# Causes Of Obesity:

Excess calorie intake



Genes play a role



Leading a sedentary lifestyle



Results from sudden quitting



Not taking enough sleep



Medicinal weight-gain





# Effects of Sugar on Health...

## SUGAR AND OBESITY

- As per 'The Sugar Association Inc' USA- Data from the past 40 years show obesity trends do not mirror trends in sugar consumption.  
Excess calorie consumption, combined with sedentary living, is a major contributing factor to the obesity epidemic, independent of any single food or nutrient consumed.  
It is the reduction in calories, regardless of macronutrient source, promoted long term weight loss.
- **Three Scientific Org, including the 'Institute of Medicine', 'European Food Safety Authority', & 'The United Kingdom Scientific Advisory Council on Nutrition', found obesity was more strongly associated with total energy intake than any individual macronutrient (fat, carbohydrate or protein), with fat being the biggest contributor to calorie intake & having the strongest association with obesity.**
- As per the article 'Sugar & Health'- 'Sugar isn't responsible for the obesity & cutting it out wont solve the problem. Reducing the portion sizes and taking stairs will'.

# THE WORLD IS GETTING FATTER



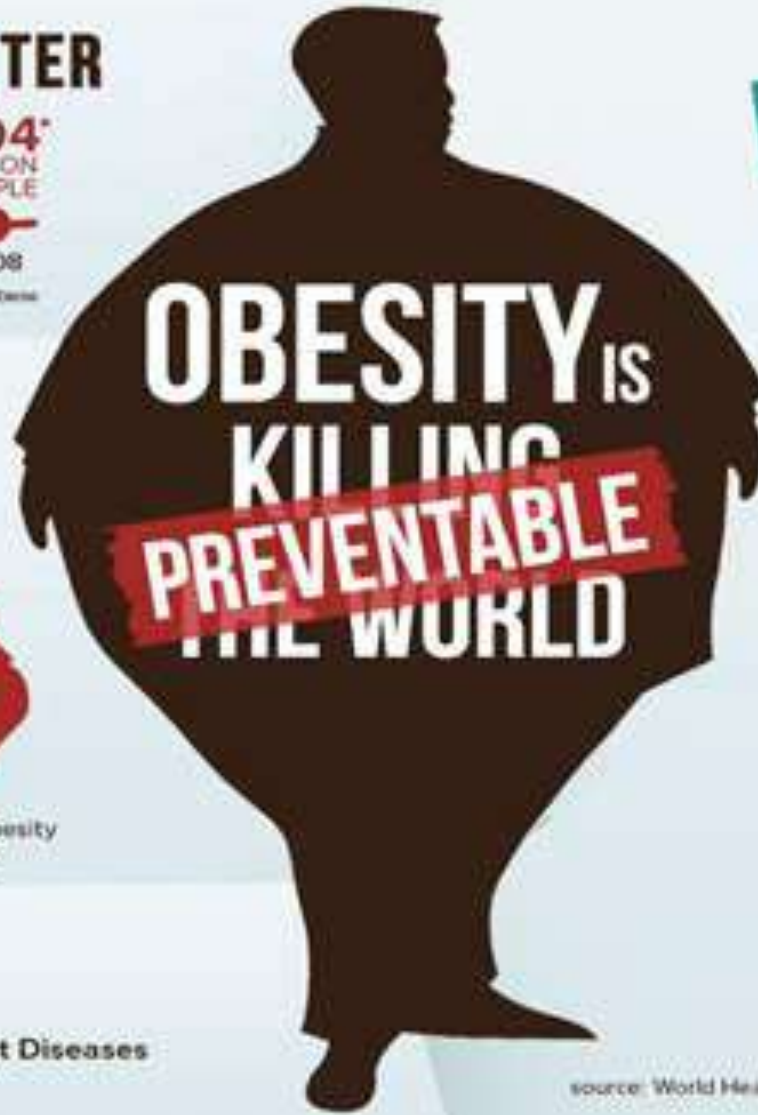
## HOW DO I KNOW WHETHER I AM OVERWEIGHT?

Calculate your body mass index (BMI) using this formula

$$BMI = \frac{\text{weight (kg)}}{\text{height}^2 \text{ (m}^2\text{)}}$$


## OBESITY KILLS!

- 7 common diseases due to obesity:
- Arthritis
  - Cancer
  - Infertility
  - Heart Diseases
  - Back Pain
  - Diabetes
  - Stroke



## A B C TO OBESITY PREVENTION

### SIMPLE RULES TO STAY IN SHAPE

#### A dopt New Healthy Habits

GOOD HABIT	Bike to Work	VS	Drive to Work	BAD HABIT
	Balanced Diet		Fast Food	
	Swim		Watch TV	

#### B alance Your Calorie Intake



#### C ontrol Your Weight Gain



source: World Health Org

# Solution is..

It's All...



A Balancing Act!

# Effects of Sugar on Health...

## SUGAR AND ORAL HEALTH

> Sucrose has been labeled the arch criminal of dental activities, besides many other factors leading to dental cavities like role of genetics, role of oral hygiene practices, etc. Time & again it has been said that , the more sugar you eat, the more plaque is created in your mouth leading to dental cavities.

> Bacteria in the mouth converts sugar into acid. The acid attacks the teeth resulting in tooth decay and ultimate loss of the teeth.

> Each time plaque comes into contact with sugar, acid is produced that attacks the teeth for about 20 mins. (so in a way spending 10 mins eating a small piece of cake is much better for teeth than chewing on sugary candies after small intervals).

> So, the solution is not giving up sugar entirely but the reduction in the frequency of sugar intake and practice good oral hygiene.



# How to avoid cavities:



Reduction in sugar intake.



Eating naturally sweet and nutritious foods.



Avoiding high calories deserts and snacks.



Avoiding sticky sugars, like candies.



Sugary beverages to be taken with meals, in few quantities.



# The Sugar Association Inc (USA).- excerpts....

- > **“Sugars consumed in nutrient-poor foods & beverages are the primary problem to be addressed not simply sugars themselves.**
- > **“Excess calorie consumption, combined with sedentary lifestyle, is a major contributing factor to the obesity epidemic, independent of any single food or nutrient consumed”.**
- > *“A positive emphasis on nutritional value, variety, appropriate portion & encouragement for a steady improvement in quality will be a more effective approach for improving nutrition & health -than simply advocating for the elimination of added sugars”.*
- > *‘Sugar-sweetened foods are one of life’s pleasures & contribute to the enjoyment of eating. Extreme restriction of a single nutrient such as sugar may lead to a whiplash between dietary extremes’.*

# Some sugar myths busted by ISO- Jan, 2017

> **MYTH-** *Table sugar is not natural.*

**TRUTH-** *Sucrose (table sugar) is made naturally by plants & it contains no artificial preservatives, colorings or any other additives.*

*(The sugar we add to our tea or coffee comes from the sugar cane which is a grass that contains large amounts of sucrose).*

> **MYTH-** *Sugar causes diabetes?*

**TRUTH-** *There is no evidence that sugar has unique qualities that result in the development of diabetes.*

*(like protein, starch, fat, sugar is a source of calories in the diet. Excess calories can lead to being overweight which can raise the risk of type 2 diabetes).*

> **MYTH-** *Sugar is Addictive.*

**TRUTH-** *Professor Benton of Swansea University in Wales concluded that current scientific evidence do not support the claim that sugar is addictive.*

*(According to him, if you are addictive to sugar then eating sugar straight out of the sugar jar would satisfy the craving...)*

# NIN(National Institute of Nutrition- Dietary Guidelines 2011...excerpts

**> According to NIN guidelines for Indian, 2011- 'A balanced diet should provide around 50-60% of total calories from carbohydrates, about 10-15% from proteins and 20-30% from fat'.**

> Carbohydrates, fats and proteins are macronutrients, which are needed in large amounts. Vitamins and minerals constitute the micronutrients and are required in small amounts. These nutrients are necessary for physiological and biochemical processes by which the human body acquires, assimilates and utilizes food for energy, maintain health and activity'.

> Excess of saturated fat and cholesterol rich intake in adults could lead to obesity, diabetes, cardiovascular disease and cancer.

> Use a combination of whole grains, grams and greens. Include sugar and cooking oils to bridge the calorie or energy gap. Develop healthy eating habits and exercise regularly and move as much as you can to avoid sedentary lifestyle to avoid any lifestyle diseases.

# Conclusion

## sugar- have your cake and eat it too!

- > Ultimately, we see that sugar is targeted worldwide for all the health problems. But, anything in excess is harmful to health.
- > **Eating Moderately & watching portion sizes would be ideal. Eating too much of anything, even no-carb foods like, eggs, or chicken will result in high blood sugars..**
- > **Sugar provides the energy required by the body to perform certain activities.> Poorly balanced diet and lack of physical exercise are the factors responsible for obesity and other lifestyle diseases..**
- > No scientific evidence to show that sugar in isolation is the sole culprit for such diseases...
- > "Rather than trying to isolate a single dietary culprit, we should focus on the whole picture."
- > Sugar is otherwise, essential for the human body.

**JUST REMEMBER TO BALANCE YOUR CALORIE INTAKE !**

Google

sugar makes|

x



sugar makes **you fat**  
sugar makes **you sleepy**  
sugar makes **me sick**  
sugar makes **me dizzy**

Press Enter to search.

Google

sugar lead|

x



sugar leads **to diabetes**  
sugar leads **to cancer**  
sugar leads **to obesity**  
sugar leads **to heart disease**

Press Enter to search.

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is sugar|



is sugar **bad**  
is sugar **toxic**  
is sugar **the new fat documentary**  
is sugar **addictive**  
is sugar **really bad**  
is sugar **bad for you**  
is sugar **good for you**  
is sugar **vegan**  
is sugar **toxic 60 minutes 1 april 2012**  
is sugar **a drug**

Subscriptions

ZOS'S  
10  
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*Even the search results forces you to hate sugar!*



# Way Forward- changing the public perception...

- > Every few years, there's a new food "bad guy" in town- and right now, its sugar. Some experts have even declared it a "poison" that's killing us, while few others are trying to compare it with tobacco.
- > **The perception and propaganda against sugar has become stronger and seems to have been spreading in India. Almost every week, one can see an article in the newspapers giving opinion or suggestions that sugar consumption is either leading to obesity or health hazards including diabetes.**
- > The virulent anti-sugar campaign has come at a time of extreme health awareness around food.
- > **The need of the hour is to change the perception of sugar not only amongst the policy makers, but also to the consumers across the country...**

# Way Forward -Sugar campaign

## **Key Business Objectives:**

- One of the top objective is to negate the negativity around sugar and insulate the industry from any adverse impacts in future.
- As a responsible industry representative, we would want to increase awareness about sugar, the benefits it holds, correct quantities of consumption and spread a health and wellness message to masses.
- Increase the reach and impact of ISMA and help the Indian sugar industry become global leaders.

# Way Forward –Sugar Campaign...contd.

**> To address the above challenges and achieve the key objectives , branding & marketing campaign to be run on social media and digital platforms, needs to be considered.**

Various Platforms- Facebook, LinkedIn, Twitter, Instagram

Activities - Infographics, Facts, Opinion Polls, Third Party Articles, Interviews, updates, blogs, healthy eating quiz, research updates..etc etc

Youtube- Expert Interviews (Doctors, Professors, subject matter experts), Industry Interviews, healthy eating tips videos,...etc etc

**THANK YOU !!**

**> SUGESSTIONS OPEN TO THE HOUSE.....**