

## Effects of Sugar Crystals on Cerebrum

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## Abstract

Aim behind writing this article is to give powerful impact on the peoples mentality. Sugar is the generic name conferred to sweet tasting, a soluble carbohydrate.

**Keywords:** Monosaccharides; Disaccharides; Oligosaccharides

## Classification

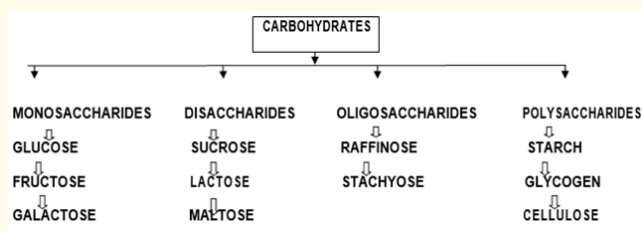


Figure 1

## Positive impacts

- Consumption of food like bread, rice, potato, pata leads to metabolism of complex carbohydrates which ultimately breaks down in monosaccharides, mainly glucose normally two third of the glucose consumed is utilised by our brain
- Proopiomelanocortin and agouti related peptide neurons in hypothalamus sense central levels of glucose and regulates its metabolism. it thus travels via bloodstream to reach the brain capillaries where it undergoes astrocyte neuron lactate hypothesis

- Glucose according to this hypothesis is taken up from capillaries into the neurons and astrocytes, where in the neuron glucose undergoes glycolysis and pentose pathway to produce lactate and further pyruvate, which undergoes oxidation to produce acetyl COA and further ATP.
- This ATP stimulates the release of neurotransmitter glutamate.
- This glutamate is taken up by astrocytes in the brain which converts it into glutamine and gets reup taken by neurons.
- Glutamate is a powerful neurotransmitter which enhances memory and learning.

## Negative impacts of sugar on cerebrum

- High blood glucose in the brain capillaries leading to over utilisation of glucose by astrocytes for a long time, causes activation of astrocytes.
- Activation of astrocytes leads to the production of pro inflammatory cytokines namely IL-1, IL-6 and tnf-alpha.
- Activation of such pro inflammatory cytokines over along period of tie leads to neuroinflammation and neuro degeneration.

- Resulting in loss of memory, depression, anxiety, fever, lethargy, anhedonia and it even leads to progression of diseases like Alzheimer and diabetic encephalopathy [1-6].

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