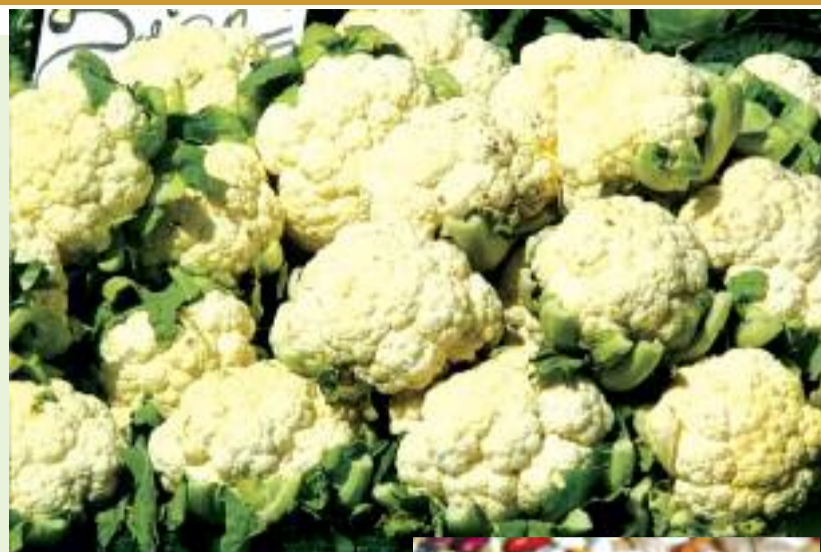


## BODY BASICS

# A Super-Nutrient

Termed as a “super nutrient”, Choline is a water-soluble element similar to the B-vitamins. It is basically a dietary component of many foods, vital for normal membrane structure and function. It's thus a dietary component essential for normal function of all cells. Choline is required to make certain phospholipids (certain organic compounds) which are essential components of all membranes.

is needed for the proper transmission of nerve impulse from the brain through the central nervous system. It enters the blood-brain barrier and directly reaches the brain cells to produce acetylcholine – a chemical that aids memory. Thus it helps in the treatment of Alzheimer's and other age-related memory loss, hormone production and controls the building of fat and cholesterol in the body.



### What are the benefits of Choline?

Choline is also an important neurotransmitter involved in memory storage and muscle control. It helps in building the structure of cell membranes and protects our liver from accumulating fat. Choline

### What are the sources of Choline?

Eggs, cauliflower, beef liver, chicken liver, beans, tofu, almonds, peanut butter, soy, wheat germ, etc. are excellent sources of Choline. The recommended intake of Choline is 125-150mg for infants and kids while in adults, it is 425-550mg.

### What happens due to deficiency of Choline?

Deficiency of Choline may result in Cirrhosis and fatty degeneration of the liver, hardening of the arteries, heart problems, high blood pressure, haemorrhaging kidneys, etc.



## EVERYDAY SCIENCE

# Oxidation

### What is Oxidation?

In simple terms, Oxidation is termed as a combination of a substance with oxygen. In scientific terms, it is an electrochemical process which involves the formal oxidation state of an atom or atoms (within a molecule) being increased by the removal of electrons.

- Complete oxidation of materials containing carbon produces carbon dioxide. This is also linked to global warming as it absorbs certain wavelengths of infrared light

- Substances or reactions having the capability to oxidise are said to be oxidative.

Earlier, oxidation simply meant a reaction of a specific material with oxygen.

### Some common forms of oxidation are:

- The tarnishing of silverware and the rusting of iron.
- Burning of hydrocarbons to produce water, carbon dioxide, some partially oxidised forms and heat energy.

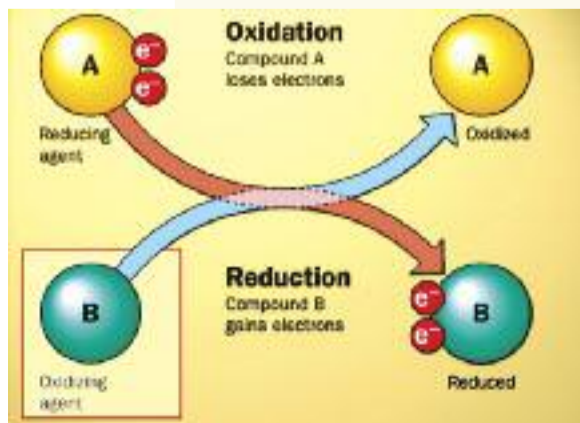
An important example of oxidation that we observe everyday is Apples turning brown when cut and kept in the open.

### Why and how does this happen?

Some foods contain an enzyme called polyphenoloxidase. When polyphenoloxidase is exposed to oxygen, a characteristic brown colour appears on the food. This is Oxidation.

### What counters the process of Oxidation?

The opposite of oxidation is reduction. A reaction involving both processes is called a redox reaction. Oxidation and reduction always occur together simultaneously and are really opposite sides of the same reaction, which is often called the redox reaction.



# Fog in a jar

## EXPERIMENT YOURSELF

### Things you will need

- A black paper
- A gallon jar
- Coloured warm water
- Matchsticks
- Gallon size bag of ice

### Procedure

- Tape the black paper on the back of the jar, so you can't see through the jar.
- Fill one third of the jar with coloured warm water.
- Light the match and hold it over the jar opening.
- After a few seconds, drop the match into the jar and cover the top of the jar with the bag of ice.

### What happens?

A cloud forms inside the jar, making the inside of the jar look foggy.

### Why does it happen?

The warm water heats the layer of air that it touches. Some of the water evaporates into the air forming water vapour. The warm air containing water vapour rises, and then cools, as it comes in contact with the air cooled by the ice. When the water molecules cool, they slow down and stick together more readily. The particles of smoke, act as nuclei for groups of water molecules to collect on. This process is called condensation.

