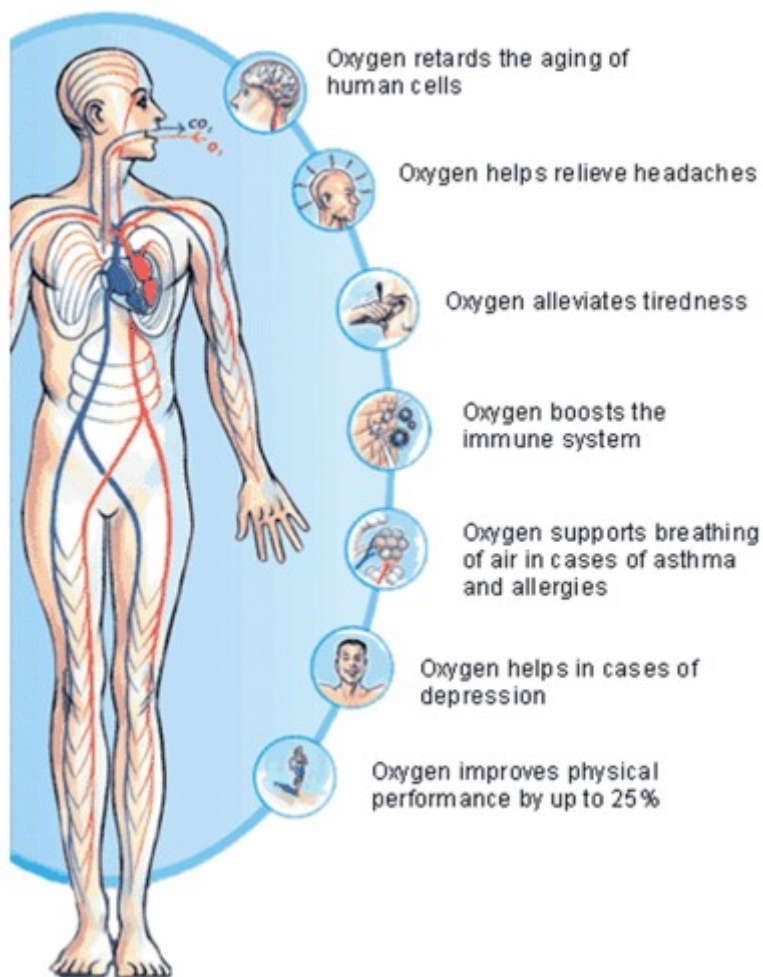


How is Oxygen useful to us?



Without oxygen there would have been no life on this earth. Without it no living being — trees, plants or animals can survive. Hence it will not be a misnomer to call it a life-giver. Do you know what is it and why is it absolutely essential for us?

Oxygen is a gaseous element. This was discovered by two scientists independently. Carl Scheele, a Swedish chemist, discovered oxygen in 1772 and Joseph Priestley, discovered it in 1774 in England. It is a colorless, tasteless and odorless gas. In the atmosphere the air contains 21% oxygen, 78% nitrogen and rest one percent other gases. In the earth's crust, it is found in the form of oxides of metals, the proportion being up to 50%. At -182.9°C under right pressure it can be liquefied. In the liquid state its color becomes light blue. At -218.4°C , it can be converted into solid state.

In the laboratory, this is obtained by heating the mixture of potassium chlorate and manganese dioxide. From the atmosphere, it is obtained by the fractional distillation

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of air. The air is compressed to two hundred times the normal atmospheric pressure and passed through a narrow hole into a chamber. As the pressure is suddenly dropped, the air is liquefied and collected in the chamber. The nitrogen gas is separated from this by a special method and oxygen is obtained in the liquid state.

All living beings need oxygen for breathing. Plants also 'breathe' oxygen. They absorb oxygen during the night. During the day they give off oxygen by photosynthesis.

By burning oxygen gas along with 'the acetylene gas, a high temperature flame is produced. This flame is used for welding and cutting metals. Liquid oxygen is also used as a fuel in space vehicles.

Oxygen cylinders are used by patients having breathing difficulty and also by mountaineers and divers in the sea. This helps in the oxidation of food in our body which ultimately gives us energy. Our fuel burns due to oxygen.

We cannot breathe in pure oxygen as pure oxygen is harmful for our body cells. Fresh air is essential for us because it contains oxygen and other gases in proper proportion, therefore breathing in fresh air makes us feel fresh and active. Therefore, we should keep the doors and windows of our rooms open for fresh air. We should not cover our face while sleeping as it stops fresh air from reaching in.

We feel suffocated amidst big crowds because the quantity of oxygen becomes less there. During winter, one should not sleep in a closed room where coal is burnt to give heat. The burning of coal converts oxygen into carbon dioxide and carbon monoxide. Carbon monoxide is a poisonous gas and very injurious to health.