

Description

[Science](#), [Biology](#)



Carbon dioxide is in the blood in three ways. They include: Binding with proteins and plasma proteins Carbon dioxide can combine with hemoglobin in a reversible combination those results in the formation of carbaminohaemoglobin. The amount of CO₂ held in the carbamino form is small but accounts for a third difference in the carbon dioxide content in veins and arteries. When blood reaches the lungs, it freely dissociates from the haemoglobin and is expelled from the body.

Dissolving in blood plasma

Carbon dioxide dissolves in blood plasma; it is more soluble than oxygen. This form of transport accounts for about 10 percent of CO₂ transport. The carbon dioxide is in its unchanged state to the lungs where it is expelled through exhalation.

Bicarbonate buffer system

It is the most common mode of CO₂ transport in the body. The majority of carbon dioxide content of the body is this way. The process takes place the blood capillaries where carbon dioxide enters the red blood cell. It combines with water in the presence of carbonic anhydrase to produce carbonic acid. A process of dissociation takes place where carbonic acid forms hydrogen ions and bicarbonate ions. This reaction allows for the continuous uptake of carbon dioxide into the blood down its concentration gradient as more of it is converted to bicarbonate ions. The body PH does not vary as haemoglobin readily combines with hydrogen ions. In the lungs, bicarbonate ions are taken back to the red blood cells and converted to carbonic acid that is to carbon dioxide through the enzymatic action of carbonic anhydrase. CO₂ is from the body through exhalation.

Works cited.

Arthurs, G. J., and M. Sudhakar. " Carbon dioxide transport." Continuing Education in Anaesthesia, Critical Care & Pain 5. 6 (2005): 207-210.