

BIOCHEMISTRY

Biochemistry - what's that? Biochemistry is all to do with the chemical processes that go on inside living organisms.

Here are just some of the ways in which **sodium** and **potassium** play a role in our everyday lives.

Maintenance of extracellular fluid volume - blood pressure

Perhaps the most widely publicised biochemical effect on the body, small changes in sodium concentrations can have extreme effects on arterial blood pressure. Similarly, small changes in potassium concentration can have a big impact on cardiac performance.

Extracellular osmolarity

Our cell membranes, as you may know, are permeable to water. Extreme cell dehydration leads to cell lysis - the death of a cell caused by the cellular membrane breaking. Extreme hydration, on the other hand, can lead to cells bursting. It's only the complex interaction of sodium and potassium as cations within our extracellular fluid that maintains the right cell osmotic pressure.

Cellular electrophysiology

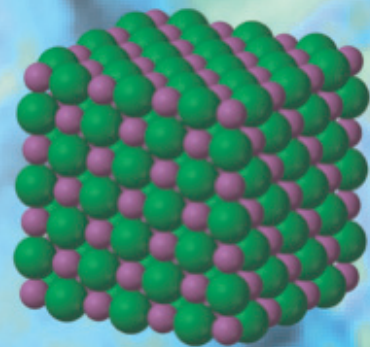
Osmotic pressure differences alone don't create the composition exchanges between intra- and extra- fluids. The interaction of sodium and potassium ions with the cell's internal and external environments creates an electrolytic differential that allows ions to be pumped across the cell's membrane. This action also controls membrane permeability to other fluid components.

Insulin secretion

Not having enough potassium in your body can prevent the pancreatic cells from secreting insulin properly.



sodium chloride salt crystal



sodium chloride molecular structure



potassium crystals