

Water

Water is the medium through which all the cellular reactions occur. It functions in digestion, absorption, circulation and excretion. Water helps to manage electrolytic balance in the body and plays a role in the maintenance of body temperature. Water influences the appearance texture and flavor of food.

Dietary sources

Visible	Invisible
---------	-----------

Plain water

Water present in food stuffs like,

Beverages (coffee, tea, soft drinks, rice, wheat, leafy vegetables, juices) soups Curry's fruits etc.

Functions of water

1. As a medium of solvent:- water is the medium of all cell fluids, including digestive juices, blood, urine etc. all the reactions in the body are regulated by water. Water is a solvent for digestion. Water carries nutrients to the cells & removes waste products.
2. As lubricant:- water based fluids act as lubricants in various parts of the body.
3. As a temperature regulator:- plays an important role in the distribution of heat throughout the body & also in the regulation of body temperature.
4. Water as a source of dietary minerals:- except hydrogen and oxygen, water we drink contains some small amounts of calcium, magnesium, Zinc, copper etc.

Water Balance

In a normal individual the maintenance of water balance is achieved by adjusting water intake & output.

The amount of fluids that we consume as beverages, including water depends on climate conditions and habit. Foods are the second most important sources of water for the body. Most foods contain 50% water. Milk has the highest amount of water. Fruits and vegetables rank next to milk. While fats and oils do not contain any water. Some metabolism of foods also gives water.

1g starch yields \rightarrow 0.6g of water

1g protein yields \rightarrow 0.41g of water 1g fat yields \rightarrow 1.07g of water.

The water is lost from the body by four routes,

1. Kidneys
2. Skin
3. Lungs
4. Intestine

Normal adult kidneys excrete about 1-2 liters of urine daily.

The water loss through skin is variable, it depend on the surface area of the body, climate, physical activity etc.

A small quantity of water is normally lost in faeces, but this can exceed 5L in diarrhoeal conditions.

The air expired from the lungs also contains water.

Daily water balance

Source	Input(ml)	Source	Output(ml)
Food	800-1000	Insensible loss	800-1000
Oxidation of food	300-400	sweat	200
As water	1000-2000	Faeces	100-200
		urine	1000-2000
Total	2100-3400	Total	2100-3400



IHM NOTES