Hydrating Well with Healthy Water

Holistic Natural Health Experts

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Introduction

Water is a very small molecule consisting of 3 atoms. It is vital to life on earth. Without it, there would be no animals, no humans, no plants, no trees, there would be nothing but rocks.

It is an indispensable companion in our daily lives and yet, what do we know about it?

Without it, we would die in a few days, but thanks to it, complex ecosystems, necessary to life, can prosper.

Water has fascinating properties, yet we still haven't unlocked its secrets.

> "Nothing in the world is softer or weaker than water, but for removing that which is hard and strong nothing surpasses it. No one can defeat it yet it is easy to conquer." LaoZi

Water covers about 70% of the earth's surface and makes up about 70% of our bodies.

It is our most precious asset, however, by considering it as an unlimited and commonplace resource, humans have continued to exploit and pollute it without restraint.

Today, the world is upside down, contaminated water is the rule and naturally pure water is the exception, so that the majority of the human population drinks contaminated water when they should have access to pure water.

If we want to have a chance to save what is left, it is urgent to put the most critical elements of our lives back at the center, starting with water.

Water is life

Water is probably the molecule that marked the beginning of life on our planet. Covering about 70% of the planet, it is essential to all forms of life on earth.

Water is crucial to the functions and functioning of life. It is probably the most important of all nutrients on this planet.

All ecosystems need water even if some microbes, plants or animals have developed strategies to survive for some time without water. On earth, water is essential for the existence of all life forms.

Water has unique properties that, for the most part, are still not understood to this day.

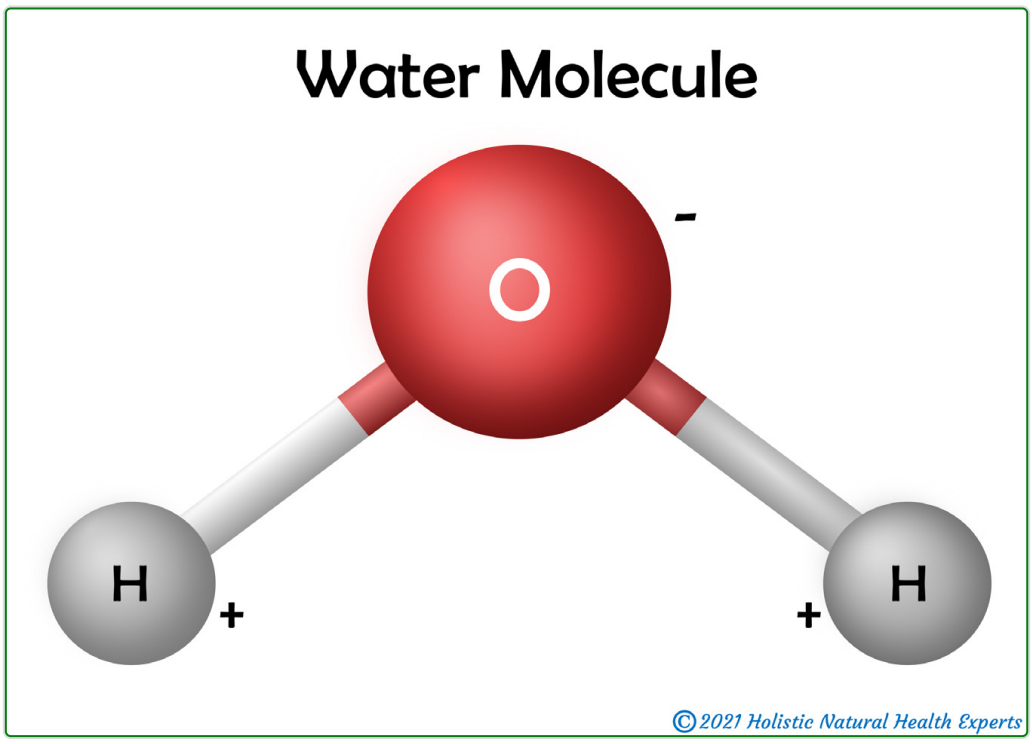
It is the only substance capable of occurring naturally on earth in 3 different states: solid, liquid and gas.

Among these 3 states, the liquid state, the one we commonly call "water" and that we come across every day, remains the most mysterious.

However, it is this liquid state of water that is recognized as the main criterion of habitability of a planet!

Despite all the progress made by science and technology, the mysteries surrounding this molecule are still numerous.

Each water molecule is made up of two hydrogen atoms linked to an oxygen atom, hence its name: H2O.



This extremely simple chemical formula gives water unique and mysterious properties that are still not explained to this day.

Water and the planet

Found in our ecosystem in gaseous, liquid and solid form, water is found in both the living and inert worlds.

Constantly circulating and transforming, seeping into the earth to form groundwater, emerging as springs, flowing into streams, rivers and oceans, evaporating and falling as rain, snow or hail, water forms the most incredible, complex and indispensable biological cycle.

Everywhere on earth, whatever the climate, water shapes vegetation which grows more or less abundantly depending on the amount of water available.

The triangle of life is represented by water, earth and the sun. All plant and animal life forms depend on these 3 essential components to sustain life.

As far as water and earth are concerned, we have already polluted them extensively, and today chemical substances are poured into the air that filter the sun's rays.

Nothing is spared in the race for profit that some people are engaged in against the fundamental resources that belong to all the inhabitants of the planet.

It is therefore urgent to change our behavior to take care of the most precious goods at the origin of all life because we all share the same planet.

From microbes to elephants, from phytoplankton to whales, from earthworms to humans, we are all dependent on clean water.

Water and the human body

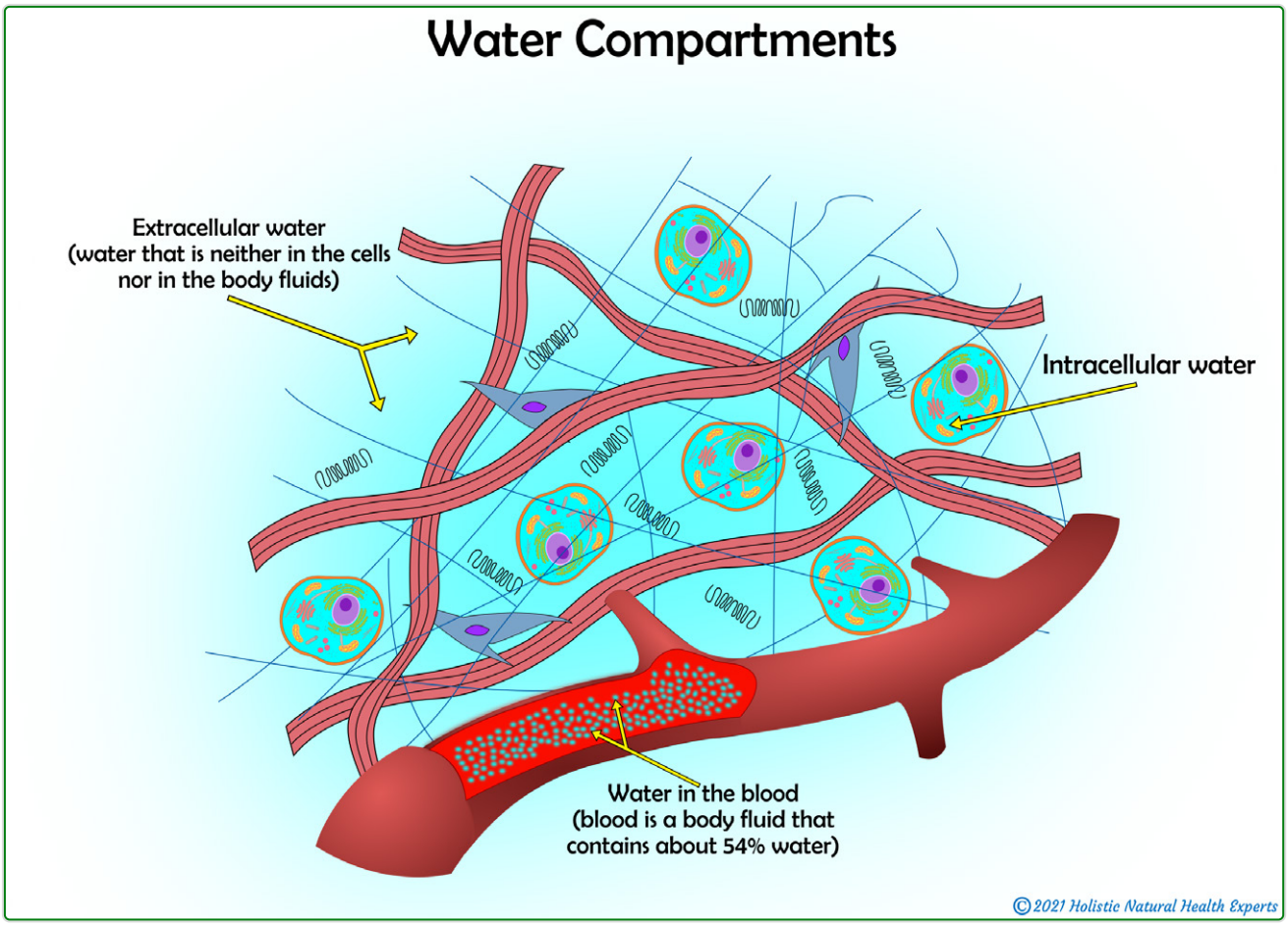
Our body is made up of 60 to 70% water.

The chemistry and physiology of our body is tied to the presence of water. There is not a single compartment in our body that is free of it.

We can survive for weeks without eating, but without drinking we would be dead in 3 days.

If we lose even 1 to 2% of our body weight in water, our physical and mental capacities are considerably diminished.

In our body, water is distributed inside our cells (intracellular water), outside our cells (extracellular water) and in the composition of all the liquids of our body (organic liquids).



Intracellular water

Intracellular water is essential for the proper functioning of the cell.

A cell that lacks water will lose the ability to properly carry out its primary functions, namely :

- its metabolism (and its hundreds of chemical reactions)
- its movement and its membrane integrity
- its reproduction (cell renewal is essential)
- its growth

Even red blood cells transport oxygen-less well if they are dehydrated!

As we will see, when we start to become dehydrated, 66% of the missing water is taken from the water contained within the cells. You can imagine the seriousness of the repercussions on our health.

Extracellular water

Extra cell water is found between the cells and is essential for the proper functioning of our tissues and organs.

By extracellular water, we mean only the water found between the cells and not the body fluids, defined by a compartment.

A good example of tissue rich in extracellular water is the connective tissue of our skin.

If we are chronically deprived of water, we can all see that our skin atrophies and becomes fragile.

Our body fluids

Although our body fluids are different from each other, they all contain a high percentage of water in their composition.

They are secreted and renewed daily.

In the chapter "Water is Health", we will briefly cover each of these body fluids so that you can better understand their roles and importance.

Water at the heart of human birth

The first stages of human development are carried out in water.

As a fetus, in our mother's womb, we are bathed in amniotic fluid, called the "water sac". It will be our home for nine months.

The only contact with our mother's blood will be through the umbilical cord, which connects us to the placenta, where the passage of nutrients and the exchange with the mother's blood take place.

We will only leave this aquatic environment at birth where we will be fed by our mother's milk, made of water and nutrients extracted from the mother's blood.

As a baby, our food will be exclusively liquid during our first months of development. Then, throughout our lives, we will continue to be dependent on a large quantity of water to sustain life.

Water molecule

As water is omnipresent in our daily lives, it is considered as commonplace in our modern societies, so much so that most of us do not realize its complexity, both from a chemical and physical point of view.

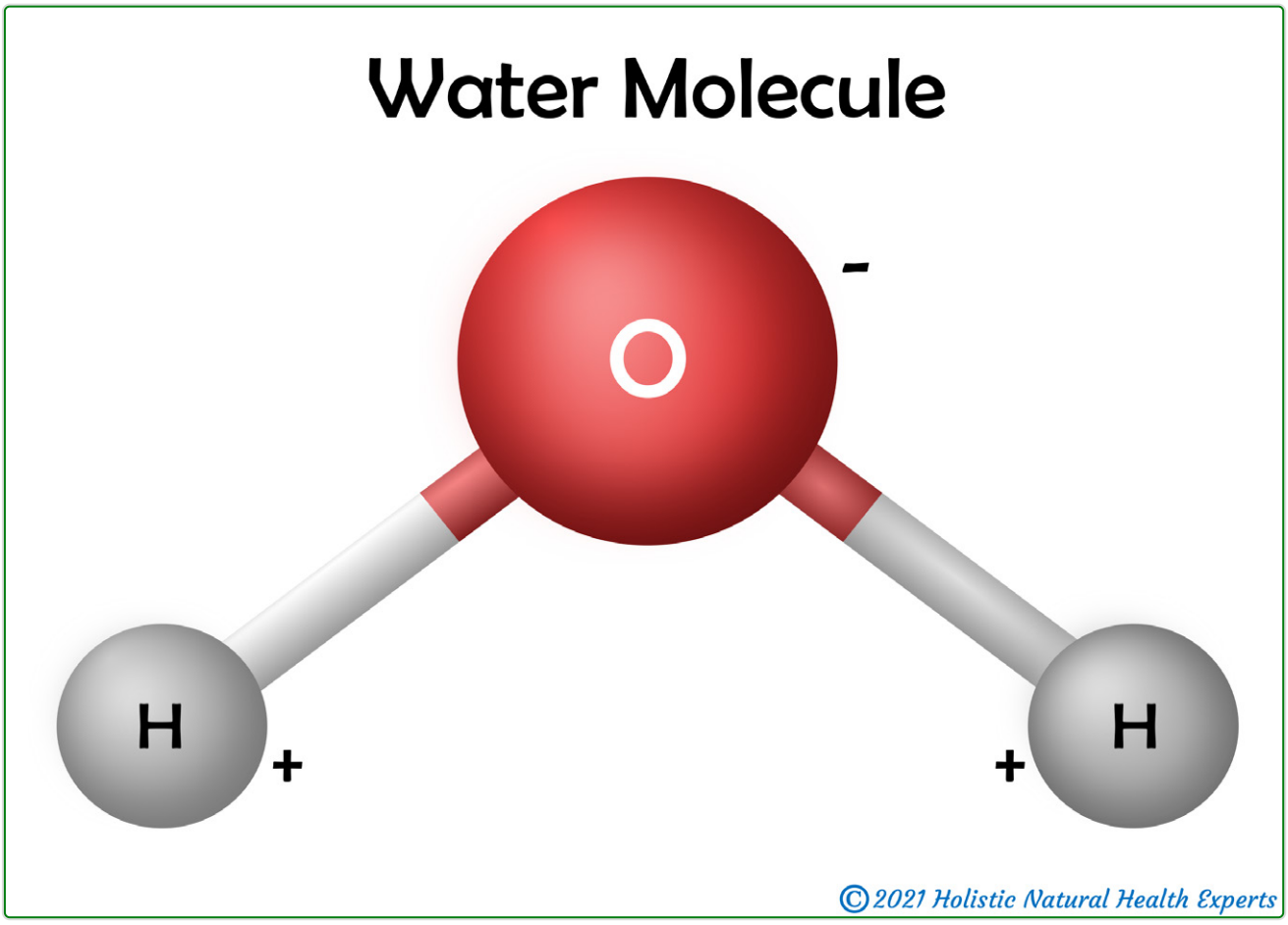
This leads to a deleterious ignorance about water and its incredible functions.

Without going into too many physico-chemical details, we are going to provide you with the essential basics to better understand the unique characteristics of water.

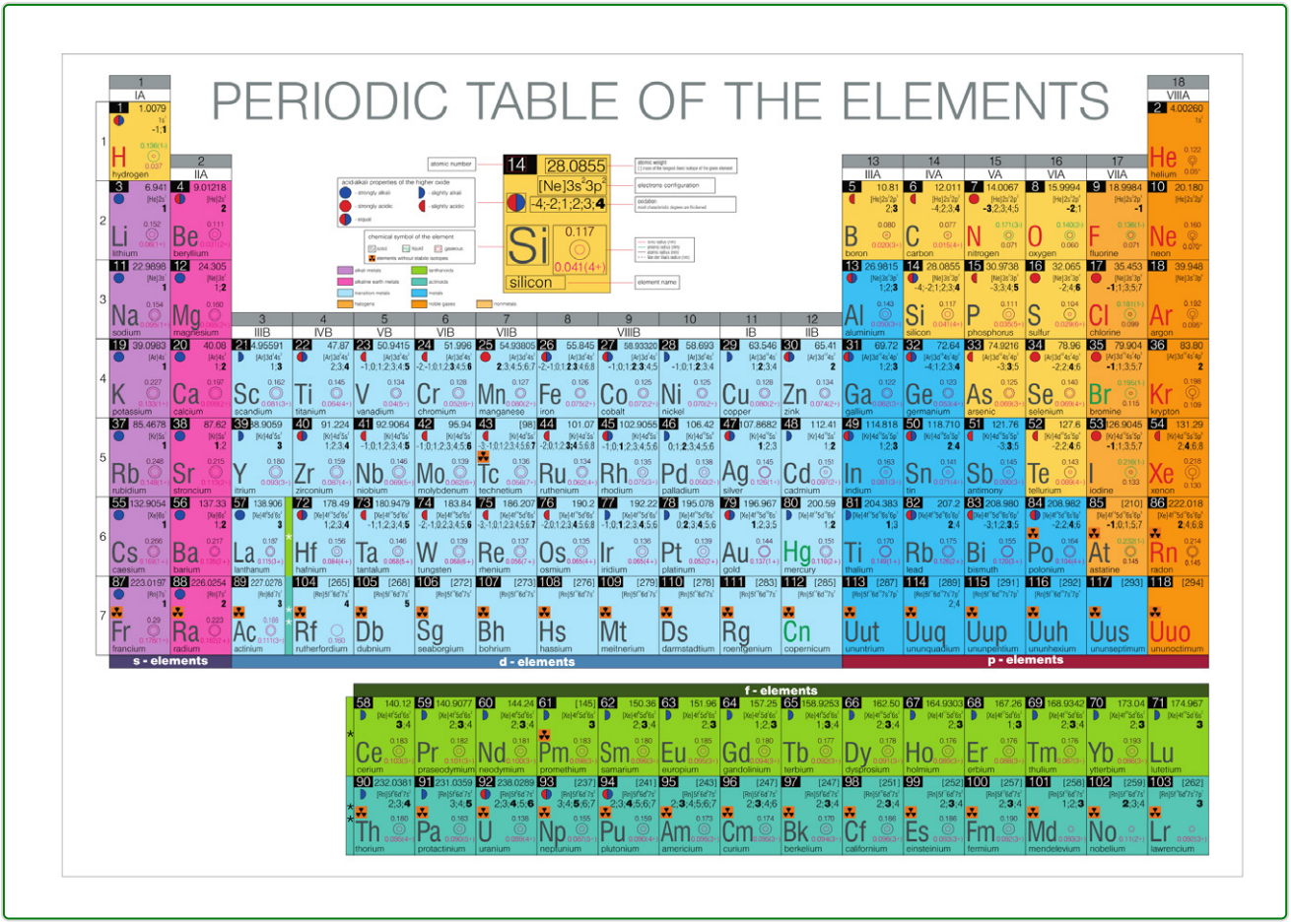
Water molecules

Water is both the simplest and the most complex natural molecule.

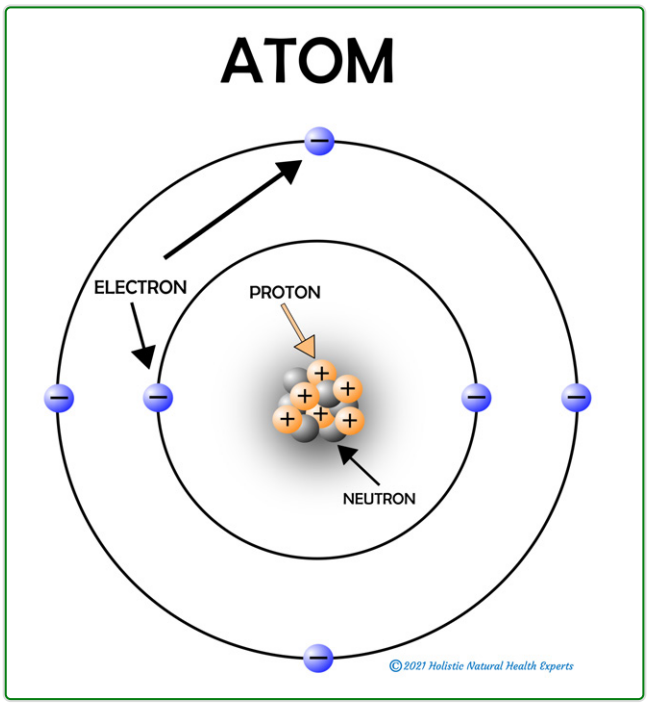
As we have seen, it consists of only 3 atoms: two hydrogen atoms and one oxygen atom (H2O).



For reference, atoms are the unitary representatives of the elements in Mendeleev's periodic table.

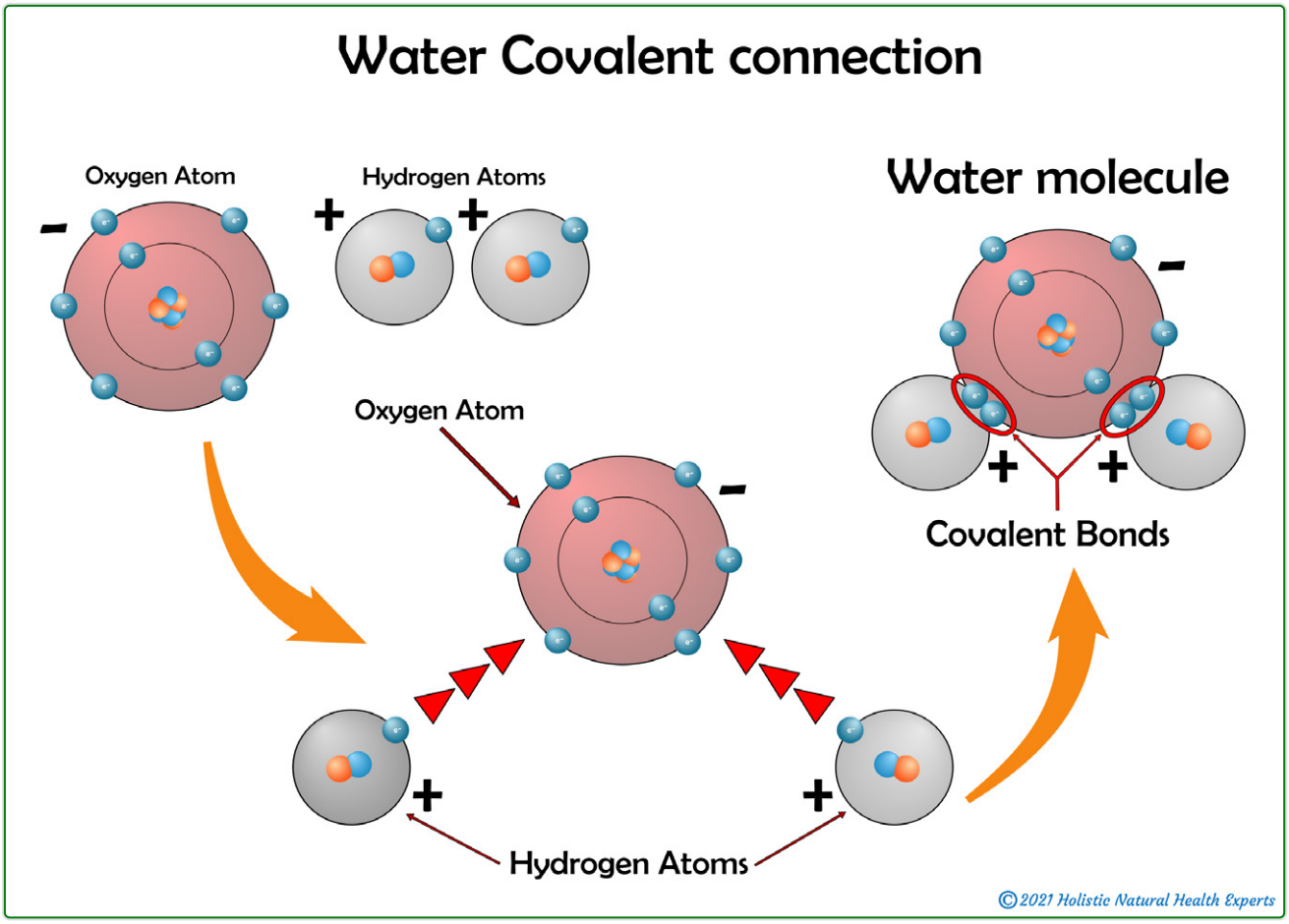


An atom has a nucleus and electrons that it will use to bond with other atoms, in order to obtain more equilibrium (we can imagine it that way) than by remaining alone.



There are two main types of atomic bonds: ionic and covalent.

In the case of the water molecule, the two hydrogen atoms bind to the oxygen atom by sharing their single electron by covalent bond, giving rise to a geometric shape specific to the water molecule, including an angle, between the two hydrogen atoms, of 104.5 degrees, which is a unique feature of water.

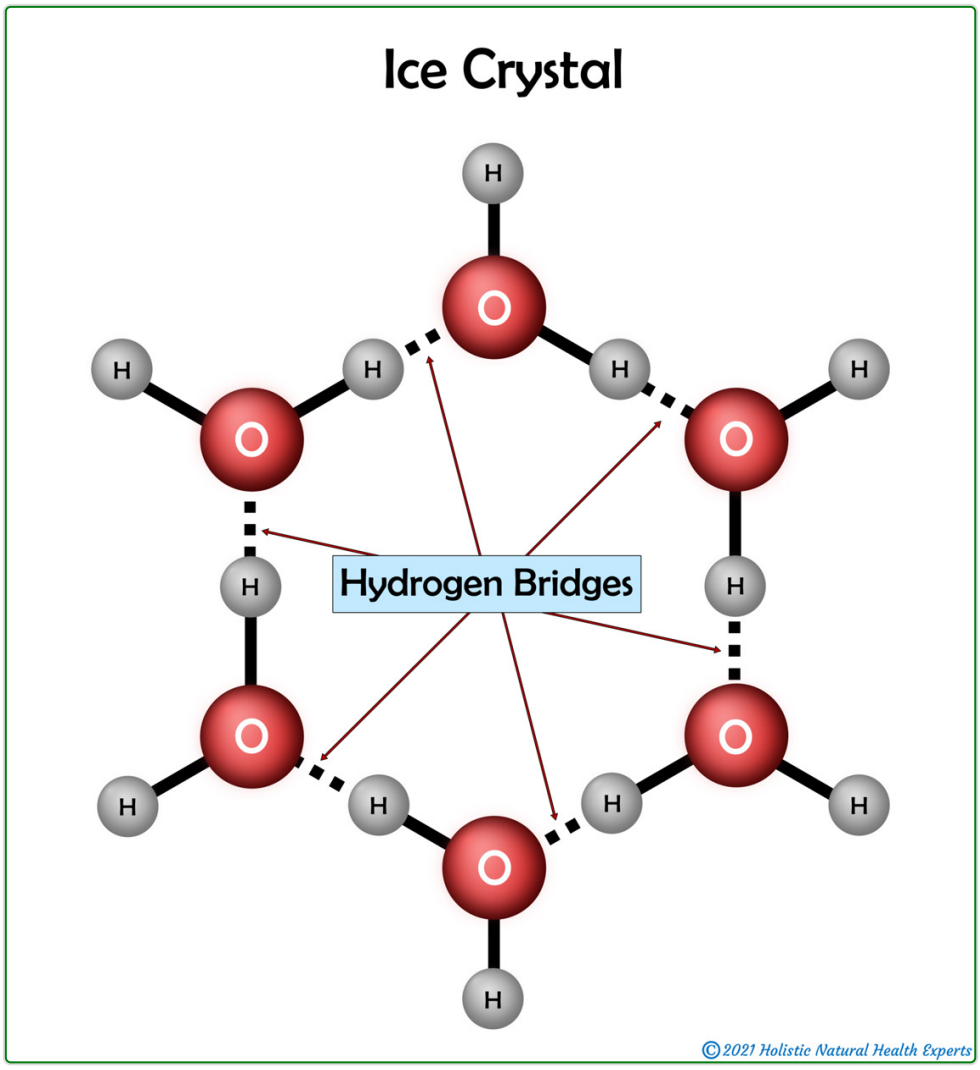


This shape is supposed to be fixed, even if some theories tend to suggest that the water molecule can "deform" in its liquid and gaseous state.

Another peculiarity of water is that the difference in electronegativity between oxygen and hydrogen is sufficiently important to create an electrical polarization.

Without going into chemical details, this dipole character allows water molecules to link together thanks to what is called "hydrogen bridges" to form aggregates of molecules also called "clusters".

Although in the solid state (ice) this phenomenon of bonding of water molecules is well established, allowing the construction of the unique "ice crystals" of hexagonal shape, in the liquid state this phenomenon is still much debated.



The main reason for this is that it is impossible today, with the technological means available, to visualize these connections correctly, because they are too "ephemeral".

To give you an idea, these connections of liquid water would be made and unmade every 200 femtoseconds, that is to say 0,000 000 000 000 200 seconds!

> «It is impossible to represent geometrically the structure of liquid water, because the molecules are both in perpetual agitation while remaining permanently stuck to each other, conferring a certain structure at short range (less than 1 nanometer) which is absent in the gaseous state" Professor Marc Henry of the University of Strasbourg, researcher specialized in water.
>
> *https://marchenry.org/profile/marc-henry/?v=11aedd0e4327*

It is interesting to note that water is the combination of oxygen, a powerful oxidizer, and hydrogen, a powerful reducer; thus two elements of opposite natures are beautifully combined to form a unique unity.

The mysteries of water

In many ways, we can consider water as an exceptional molecule. From its molecular composition to its properties, water behaves in a very peculiar way.

For a very long time, the singularities of water have intrigued humans.

Thus, it is not surprising to note the key role played by water throughout civilizations, conferring on this simple H2O molecule sometimes magical powers, sometimes divine powers.

In religions, water plays an important role, starting with Christianity and the famous holy water.

Nowadays, these singularities are still not all clearly elucidated by science, but only explained by more or less convincing theories.

It is difficult to say if we will ever be able to unravel all the mysteries of water, but one thing is certain: water is not done surprising us.

Singularities and properties

Many people have devoted their lives to the study of water and its characteristics. Entire books could be written on the subject.

We are going to mention here only a few concrete examples of the peculiarities of water in order to encourage you to think about the subject, because without necessarily becoming experts on the subject, we believe that everyone should know a little more about this incredible molecule that composes more than 60% of our bodies!

Exceptional natural solvent

Water is the most formidable natural solvent.

It is commonly referred to as a universal solvent because it is able to dissolve more substances than any other solvent.

However, water only dissolves polar (electrically charged) molecules. It does not dissolve non-polar molecules, including organic compounds such as fats and oils.

Thanks to its physical-chemical characteristics, as we saw in the previous chapter, water dissolves many solids as well as some gases. The most classic example is the bottle of carbonated water which contains CO2 dissolved in water.

Although there are other solvents, such as ammonia, water has the particularity of being healthy for our organism, allowing us to assimilate many dissolved substances essential to our metabolism.

Without this incredible capacity of water, life simply could not develop.

Dilatometric anomaly

The dilatometric anomaly is simply the ability of water (as well as some other chemical elements) to decrease in density when solidifying.

While normally, the opposite happens!

Indeed, the logic of the organization of the states of matter dictates that a matter which passes from the gaseous state to the liquid state, then to the solid state, becomes denser.

To understand this, we must imagine the following idea:

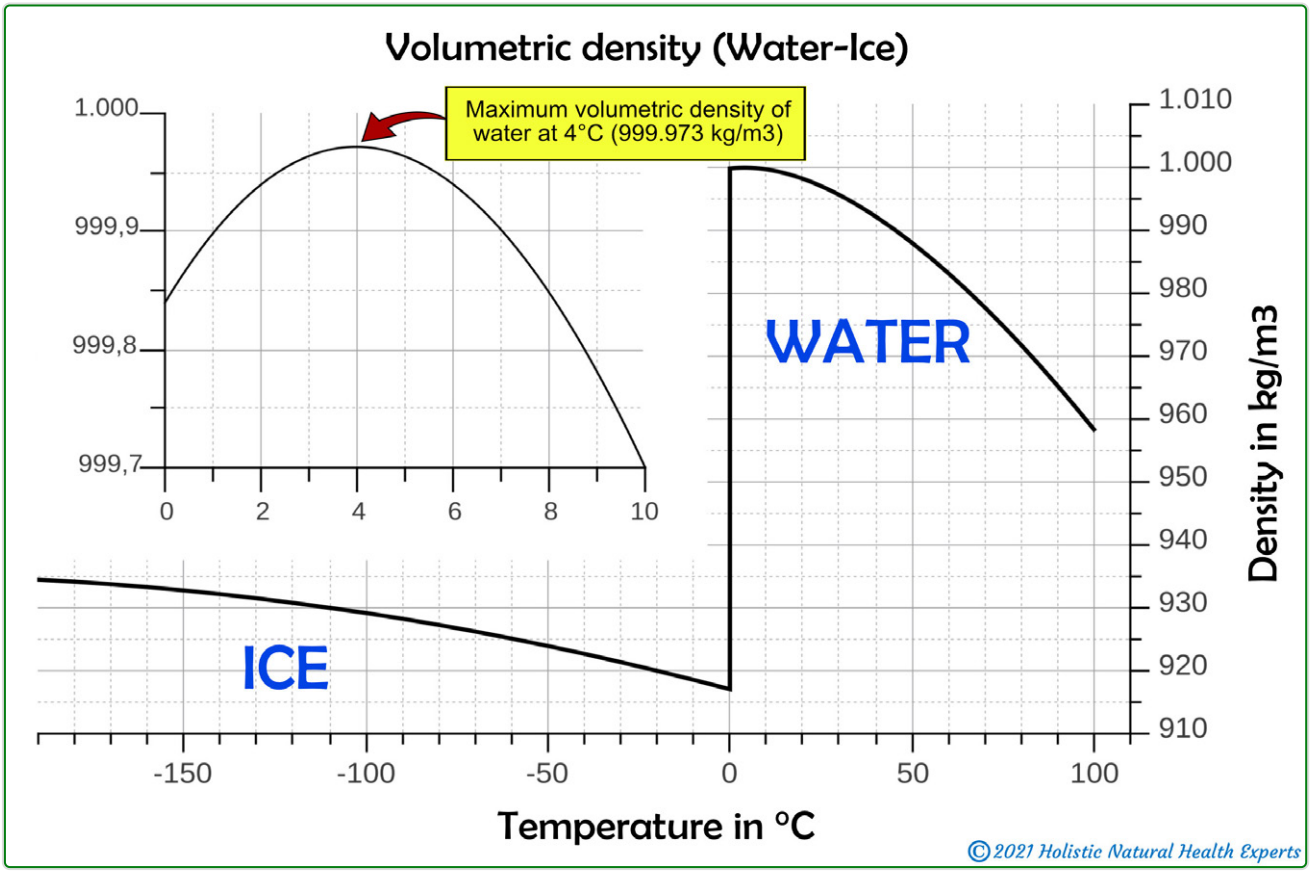
In a gas, the molecules are quite far from each other, they do not touch each other except in case of collision between them. This is why gases are easily compressible, because it is possible with force (pressure) to bring these molecules closer together. Gases therefore have a low density.

In a liquid, the molecules are linked to each other but in a way that is moving and disorganized. This allows the liquid to be fluid, i.e. to follow the shape of its container. Liquids have very little compression, so they have a higher density than gases.

In a solid, the molecules are linked to each other in a fixed and orderly manner forming a crystal-like organization. As a result, solids, with the same weight, take up less volume than liquids. Solids therefore have a higher density than liquids and gases.

Except that in the case of water, during the passage from its liquid state to its solid state, it does not densify, it expands and not just a little!

As incredible as it may seem, the difference in density between water and ice is about 10%.

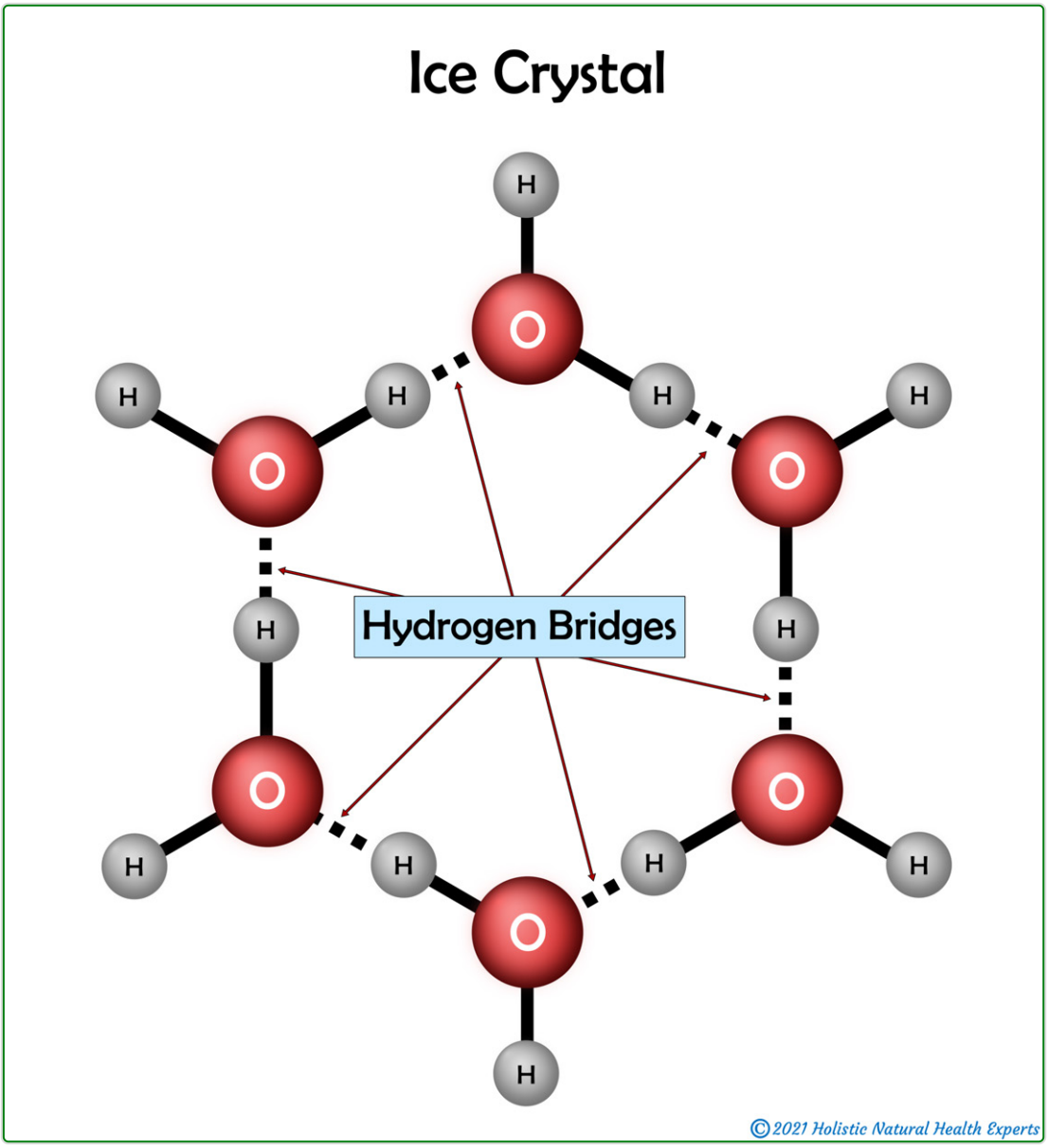


This means that for the same amount of water, ice occupies 10% more volume than water.

But why does water behave this way?

As we have seen, the molecules of a solid are ordered and linked by a crystal organization.

However, in the case of water, this crystal takes a hexagonal shape which leaves a large central part unoccupied, contrary to the disorganized shape of the liquid state.



This is due to the hydrogen bridge type bonds of water.

What are the consequences of this on our daily life?

Although this dilatometric anomaly is remarkable, we can rightly ask ourselves if it has any impact on our daily life.

The answer is yes, and much more significantly than most people think.

Indeed, without this singularity of water, the ice cubes in our glass of water would not float on the surface but would fall to the bottom of the glass, and in the same way, ice would not float on water.

This means that there would be no ice floes, no icebergs and no marine life in lakes exposed to freezing, because the ice floating on the surface of a lake prevents it from freezing completely, thus allowing animals to survive.

Furthermore, it is very likely that marine life would simply not have been able to develop if ice could not float on water.

Boiling point

Although the liquid state of water is considered normal at room temperature, it is in fact an anomaly specific to water.

In fact, the boiling point of water, that is to say the temperature for a given pressure at which a substance passes from the liquid state to the gaseous state, is abnormally high compared to its low molecular weight.

At sea level, water boils at 100°C, at the top of Mount Everest, at 72°C.

As for the dilatometric anomaly, this is due to the hydrogen bonds of water which are difficult to break. It takes a lot of energy (and therefore heat) for water to turn into gas.

It is actually fortunate that this is the case, because otherwise we would not be here to talk about it!

Supercooling phenomenon

Supercooling is the ability of water to remain liquid below its solidification point.

Thus, under the right conditions, water can remain in liquid form, even at temperatures as low as -40°C!

For this to happen, the water must be pure and not be subject to any external disturbance (vibration, shock, agitation).

As anecdotal as it may seem, this phenomenon of water supercooling is responsible for ice on the roads, and participates in the formation of snow in the sky.

Surface tension and capillarity

Water has the highest surface tension of all liquids. This can be easily observed on the surface of water where a kind of film (water skin) can be seen.

This force makes it possible, for example, for bodies to float on the surface of the water, even if they are denser than it.

It also allows water to flow down the sides of a rock without falling vertically, thus partially resisting the force of gravity.

More importantly, in addition to the phenomenon of capillarity that allows water to adhere to a solid surface, water can rise several meters, directly counteracting the force of gravity.

This partially explains how the sap rises inside the tree.

Incredible pressure

In spite of appearances, water can develop, depending on the situation, an incredible pressure.

For example, this pressure allows cargo ships weighing several thousand tons to float, thanks to Archimedes' principle.

It also allows hydraulic pumps, hydraulic presses or hydraulic braking systems to operate, all of which use water pressure to function, thanks to Pascal's principle.

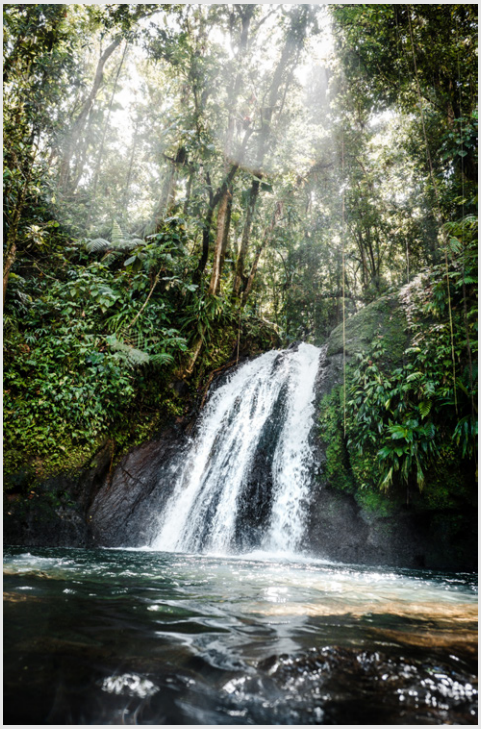
It is also the pressure of water that allows plants to make their way through hard surfaces such as stone or asphalt.

Water throughout history

Humanity has lived for hundreds of thousands of years by drinking water directly from springs, streams, rivers and lakes since it was safe, free and abundant.

The management of access to water

Little by little, humanity colonized places less favorable to life, drier, hotter, colder, more mountainous. We have multiplied and gathered in ever larger groups and inevitably conflicts over water have arisen.



Agriculture and animal husbandry were among the first problems related to access to water. Without water, there is no survival, so creativity was needed.

It is not clear when man began to build canals to manage the flow of water and eventually its storage.

During the Roman Empire, extremely ingenious and complex systems (aqueducts) were created to collect water and transport it over tens of kilometers.

The aberration of wastewater

Contrary to the most elementary common sense, we have developed the singular practice of dumping our waste in the water.

While no other animal on earth does this, we humans have seen fit to defile our most precious possession.

Of course, we are not talking about biodegradable horse manure, but about various types of waste, which have not stopped increasing since the industrial era.

This is how we pollute the water with:

- inert materials: rubble, metals, plastics, electrical and electronic equipment, batteries, paper, etc.
- biological materials: body fluids, feces, blood, slaughterhouse waste, fishing waste, and other corpses.
- toxic products of all kinds: radioactive waste (it has been 10 years since the radioactive water from Fukushima was dumped in the ocean), industrial sludge, paints, detergents, dyes, agricultural waste, manure, pesticides, fertilizers, etc.

Obviously, many countries have set up waste recycling and destruction by incineration, but the efficiency of these systems remains very variable.

Moreover, many mafias in the world have taken over the recycling taxes and finally bury these wastes which will end up releasing their toxic components into the water.

Urbanization and crowding of people into apartments have pushed us to use water toilets, literally meaning we poop in the same water that will come back to our kitchen faucet.

The water treatment plant will treat this water without being able to remove micropollutants, such as medicines (including pills), drugs, pesticides and other industrial products, and of course will add chlorine to the water in order to eliminate many pathogenic bacteria.

From then to now

Living with sewage is a man-made plague. Very early on, man understood that dirty water could be a source of disease.

Logically, it was necessary to evacuate this water far from the houses, even if the concept of purification of this soiled water evolved very differently from one society to another.

One of the first traces of wastewater management can be found in the Indus Valley (today's Pakistan) more than 2500 BC.

The Egyptians and of course the Romans developed systems for draining wastewater into sewers with varying degrees of success. In fact, the word cloaca, to designate a sewer, found its origin in the nauseating odor that emanated from it.

In the Middle Ages, in most European countries, sewage disposal systems (a definite advance during antiquity) were abandoned.

Thinking of common infrastructures was too expensive and required too much maintenance, while it was enough to crowd people into unsanitary dwellings and let the street become an open sewer.

Logically, the dirty water became the breeding ground for many endemic diseases and epidemics of plague, cholera and typhus, until the industrial revolution.

As the situation was no longer tenable and cities were growing in population year after year, the safety of water, but also of air and food, became a public concern.

The twentieth century saw the largest sewerage works developed in urban areas, taking on an unprecedented scale in London, Paris and Hamburg.

The first notions of public health and hygiene thus developed around the issue of water.

However, there was still a long way to go before two fundamental needs related to water were met

- access to drinking water at home
- evacuation and treatment of wastewater

It was not until the 1960's that the installation of wastewater treatment plants began to be democratized.

Just 50 years ago, in our beautiful civilized countries, our wastewater was still ending up in rivers, seas and oceans!

But this concern has a cost that the community is not always ready to pay. Thus, in many countries, the progression of these notions of collective hygiene has stopped, or even regressed.

Today, we are in an almost hopeless situation.

We have accelerated the degradation of the quality of groundwater, springs and rivers and we have clearly made an aberrant choice, that of polluting the water with all our waste, as toxic as it is, and drinking this same more or less "cleaned" water.

Water is health

Of course, you will never find pure water, i.e. only H2O. In reality, water is always bound to other molecules.

Natural water always has a certain mineral composition at a given temperature. Thus, the conductivity and the pH of the water vary.

All these parameters influence its behavior and properties.

As we have seen, water is the most powerful solvent and allows many molecules to dissolve.

Let's take sugar, sucrose, for example, which dissolves when mixed with water. This means that the sucrose molecules separate and surround themselves with water molecules.

This phenomenon allows us to dissolve, in all the liquids of our organism composed mainly of water, all the molecules necessary to maintain us alive at precise concentrations.

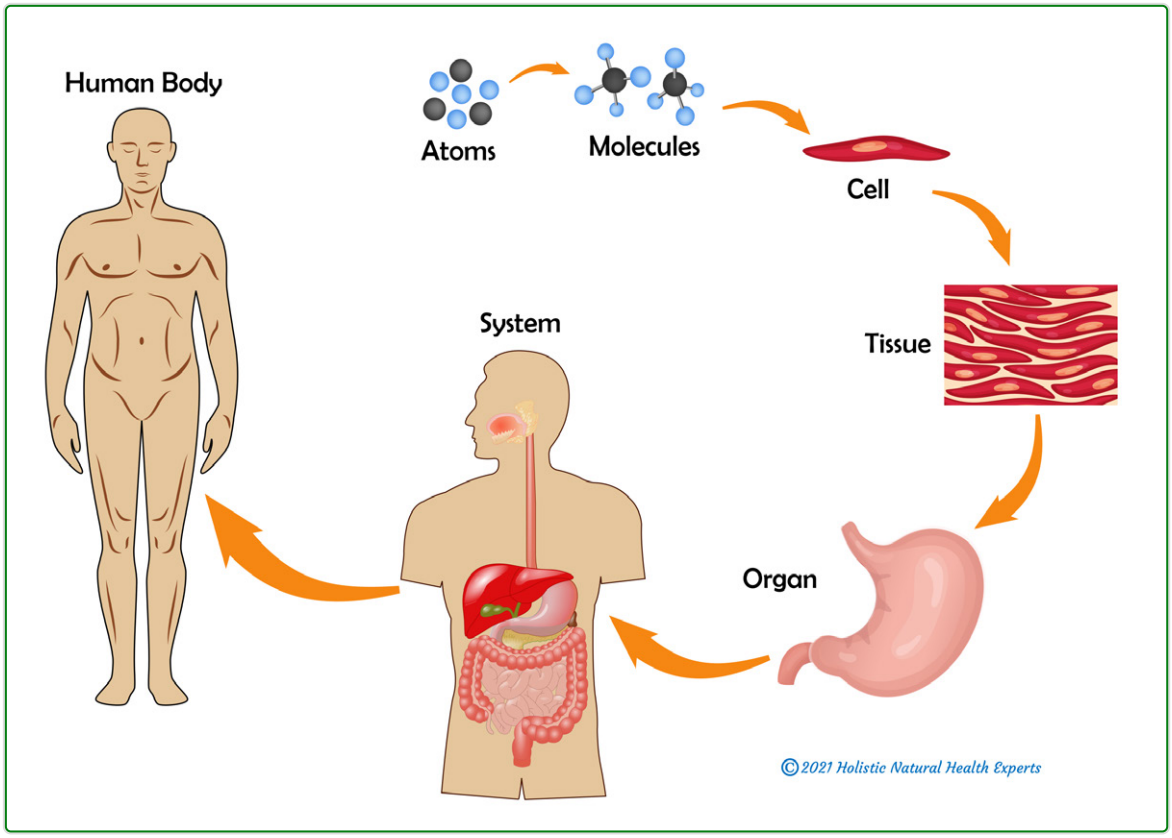
Thanks to the physical and chemical properties of water, the entire chemistry of our body can function properly. The distribution and circulation of millions of molecules from one compartment to another can only be done by the magic of water.

Our body has solved the problem of compartments thanks to the cell membranes.

Functioning as gates that allow only certain molecules to pass through and not others depending on their size, electrical charge or solubility, cell membranes allow the creation of very different liquid media such as blood, lymph, saliva, milk and even urine!

How does our body use water?

Our body is made up of atoms forming molecules that organize themselves into cells, then into tissues, then into organs, then into systems, and finally into our entire organism.



Each of our cells is a chemical reaction factory requiring optimum hydration. Each of our extracellular spaces also requires optimum hydration.

Thus, drinking enough water is vital for our metabolism, without which we will die in a few days.

Water, absorbed by our digestive system, is used to produce all the body fluids our body needs to rehydrate our cells, organs and tissues.

Let's take a look at the role and function of the body fluids in our body.

Body fluids

The body fluids in our body are vital. Contrary to what many people think, they are all composed of a significant amount of water.

If we don't have enough water, they can't maintain their physical, chemical and physiological characteristics that are essential to our health.

Did you know, for example, that on average, 1 liter of blood contains about 400 ml of red blood cells (including white blood cells) and about 600 ml of plasma? And that 90% of plasma is water?

It also contains proteins, fats, vitamins, minerals, hormones and all the other nutrients to be transported in our body.

Thus, water is the main component of our blood!

Body fluids are numerous and omnipresent in our body. Their functions are very complex.

We will briefly review them here to explain their major functions.

We will discuss them in more detail in the topic Anatomy-Physiology-Pathology.

The digestive system

Every day, our body produces 7 to 10 liters of digestive juices. This impressive quantity meets the physiological needs of our digestion.

Here is how they are distributed:

- 1-1.5 liters of saliva
- 2-3 liters of gastric juice
- 1 liter of bile
- 1 liter of pancreatic juice
- 2- 3 liters of intestinal juices

In order to produce so many digestive juices, we must be sufficiently hydrated. Any decrease in our body's ability to produce the necessary digestive juices will lead to digestive problems.

We need enough saliva to chew and swallow properly. Food passes into the stomach, which secretes 2 to 3 liters of gastric juice every day. The gastric juice, together with the action of enzymes and the movements of the stomach, allows us to transform our food into mush.

At the exit of the stomach, other absolutely essential juices such as bile (1 liter/24 h) and pancreatic juice (1 liter/24 h) are added where most of the digestion takes place. The 7-meter long journey through the small intestine begins.

Our food bolus must be liquid enough to pass through our 7 meters of intestine properly and allow the absorption of nutrients.

Most of the water that makes up the digestive juices will be reabsorbed along the 1.5 meters of our colon. In the end, only 100 ml to 200 ml will be lost with the stool.

Constipation is an extremely common problem and affects one in two people; lack of water is almost always a concomitant cause.

We realize the extreme importance of providing our body with enough water every day, if only to ensure our digestion!

Our digestion depends on the water that we drink and that is contained in our food. When we accompany our meals with alcohol or sodas, this cannot be counted as hydration, quite the contrary.

When we drink industrial, overly sweetened or alcoholic beverages, we are damaging our entire digestive process and this can create or accentuate all sorts of disorders.

Special attention must be paid to our liver, a major organ of synthesis and detoxification functions of our body.

Without water, it cannot perform its functions properly and an endless number of disorders can occur. It therefore seems logical that all detoxification cures recommend drinking a lot of water.

The majority of these liquids are reabsorbed in the colon and finally, only 50 to 150 ml are lost in the stool.

The eyes

Our eyes are mostly made of water. The vitreous, which is the white part of the eye, is made up of more than 90% water, although it has a relatively rigid gelatinous consistency.

The aqueous humor is transparent and is located in the front part of the eye. It is composed of more than 99% water and is constantly renewed.

It determines the intraocular pressure, generating a well-known disease if the renewal cannot be done properly: glaucoma.

Tears, constantly produced, hydrate the cornea and our conjunctiva. The health of the eyes is eminently related to its hydration.

The ear and the vestibule

The final step in the transmission of sound takes place in the cochlea by setting in motion the cilia of the hair cells, which will transform this movement into an electrical signal.

Similarly, our balance depends on the proper functioning of the endolymph, a liquid in the ducts of the vestibule, a part of the inner ear.

Our hearing and our balance in space thus depend on two liquid media.

The joints

Our joints are for the most part enveloped in a membrane, the synovial membrane, which contains synovial fluid.

The cartilage that covers the articular surfaces of the bones does not contain blood vessels. It is nourished by diffusion of the synovial fluid.

The quantity and quality of the synovial fluid are therefore essential to the health of our joints, and these two parameters depend on good hydration.

Therefore, for our joints' longevity, a sufficient supply of water is imperative.

Cerebrospinal fluid

As for the cartilage, there are no blood vessels in our gray or white matter. Our brain, resembling a nut, is covered by a membrane, the pie-mother, which carries all the vessels.

This membrane is glued in such a way that it follows all the convolutions of the brain. However, there are still areas that are too far away from this nourishment due to the diffusion of the blood vessels of the pie-mother.

This is why nature has endowed us with cavities, the ventricles, covered on their internal face with vascular structures, the choroid plexuses, which will produce the cerebrospinal fluid from the blood.

This fluid fills the ventricles and circulates around the brain and spinal cord. Its role is manifold, notably to participate in the cerebral nourishment and to serve as a shock absorber between the brain and the cranium.

Lymph and the lymphatic system

The nourishment of our tissues and organs is dependent on the outflow of nutrients and oxygen from the blood capillaries, always accompanied by water.

In return, 90% of this water is reabsorbed with metabolic waste into the blood capillaries. The remaining 10% is recovered by a special system of vessels: the lymphatic vessels. They carry the lymph and originate in the tissues and organs of our body.

Through the lymph, a part of the waste produced by our cells is recovered by a circuit which crosses many lymphatic ganglia, very rich in white blood cells.

The more we drink qualitative water in sufficient quantity, the better the circulation of the lymph becomes.

The blood

Our cardiovascular system depends on our blood volume.

As we said before, more than half of our blood is plasma (the part without cells).

Plasma is 90% water and also contains minerals, proteins, lipids, hormones, antibodies and all the clotting factors.

Blood circulation depends on the maintenance of blood volume, which in turn depends on sufficient hydration.

Mucous membranes

Mucous membranes are the membranes that cover all the cavities of our body, whether it is the digestive tract or the respiratory, urinary and genital tracts.

On the surface of the mucous membranes, there is always a layer of mucus to protect the cavity and the mucous membranes themselves. The mucus needs a sufficient amount of water to ensure its fluidity and renewal.

The formation of urine

The kidney filters our blood, removing most of the waste products; the primary urine is formed.

Then, through a complex system of concentration differences, it completes its filtration work. In the final urine, it secretes other substances to be eliminated and reabsorbs other substances into the blood to be retained.

Thus, this unique work of the kidney makes it possible to form urine, which will be stored in the bladder and eliminated when we feel the need for it.

In the process of eliminating waste, the kidney needs water; if we do not drink enough, we will urinate little because the kidney will preserve water as a priority and will not be able to eliminate waste efficiently.

In case of cystitis, drinking a lot reduces the risk of bacterial colonization of the urinary tract because the urine cleans it.

Pregnancy, childbirth and breastfeeding

Pregnancy puts a lot of extra fluid demands on a woman's body. In the third trimester, she has to produce 30% more blood volume.

In addition, throughout gestation, the fetus is bathed in amniotic fluid (the water sac). This fluid is 99% water and is sterile.

It contains the mother's nutrients which are diffused through the membranes of the water pouch, although nourishment through the umbilical cord remains the main source.

Constantly renewed, the amniotic fluid ensures protection and a stable body temperature.

After delivery, breastfeeding begins, and once again the mother is under great stress, as the fluid intake is greater than ever to produce about 1/2 liter of milk per day.

The skin

Hydration of the skin is the number one selling point for mineral water.

Water is necessary for the middle and deep layers of the skin to ensure the organization of the various elements that make it up, such as collagen.

It is obvious that a lack of water weakens the skin, which loses its firmness and whose hydrolipidic film on the surface becomes less effective in protecting us from climatic aggressions and infectious diseases.

Moreover, the skin is the major organ for the regulation of our body temperature.

When it is hot, the vascularization of the skin increases and the pores of the skin open. This induces perspiration and helps to lower the body temperature.

Conversely, when it is cold, the vascularization of the skin decreases and the pores of the skin close. This blocks perspiration and prevents heat loss.

The water lost through perspiration must be replaced, especially when it is hot and during sports.

As you can see, there is not a single cell in our body that does not suffer from a lack of water.

Cellular activities

At the microscopic level, all cellular activities take place in an aqueous environment:

- intracellular and extracellular chemical reactions
- the maintenance of a voltage gradient (hydro-electric energy) across the cell membrane. Indeed, thanks to an imbalance in the concentration of mineral salts between the inside and the outside of the cell, the inside of the cell is at -70 mV (millivolts), which allows, among other things, nerve cells to transmit nerve impulses and muscle cells to contract, thus ensuring cerebral and peripheral neurological activity.
- the movement of organelles in the cells, the interior of the cell is a liquid medium where the organelles float
- the maintenance of the shape of red blood cells, thus allowing their oxygen transport function
- the transmembrane transport of nutrients and the removal of waste products from all cells of the body
- the movement of the cilia of the cells of the respiratory system

Finally, our overall health depends on the health of our cells, from the microscopic to the macroscopic level, everything circulates and lives thanks to water.

Water intake and loss

Our bodies receive and lose water in different forms and through different organs and systems on a daily basis. In order for us to stay well hydrated, it is necessary that the losses and intakes are continuously balanced.

Quantity

We must provide our body with the amount of water needed to compensate for our losses. Depending on these losses, the amount of water we need to drink daily, in addition to the water in our food, can vary from 1 to 4 liters.

Of course, this is an approximate figure, as water losses can fluctuate greatly depending on various criteria, including sports activity and ambient temperature.

Losses

Our body loses water through various body fluids. These losses vary mainly according to physical activity, metabolism and climate.

Here are the 5 types of losses:

- urine
- sweat/transpiration
- breathing
- stool
- skin evaporation

Urine

As a rule, this is the most important loss outside of any sporting activity. The volume of urine is controlled by the kidneys and serves as a means of regulating the body's water balance.

The more you drink, the greater the volume of urine, however, a minimum volume is necessary for the kidney to eliminate waste and undesirable elements from the blood.

Drinking enough is therefore essential for kidney function.

Sweat/transpiration

Sweating has a very important function, maintaining body temperature. The more heat you generate through physical exercise, the more you sweat. The higher the outside temperature, the more you sweat.

This may seem like a triviality, yet far too many people don't hydrate enough under these conditions.

Sweating can generate up to several liters of sweat to keep your body temperature stable.

Breathing

Water loss through breathing is much more discreet, yet every day we eliminate about 300 ml of water through pulmonary evaporation.

This amount can double with physical activity, but as a general rule of thumb, the amount eliminated from the lungs corresponds to the water produced by our metabolism (the production of energy by oxidation of nutrients produces water as a "waste product").

It is therefore obvious that special attention should be paid to the ventilation of living and working areas.

Stools

A small amount of water is eliminated with the stools (about 200 ml/day).

In cases of normal transit, there is therefore nothing to report.

The situation can become complicated if severe diarrhea lasts several days/weeks, especially among infants and elderly people.

Imagine that an infectious disease like cholera can cause a loss of more than 20 liters of water per day, which is enormous and eventually causes the death of the patient.

Skin evaporation

Much more discreet than perspiration is skin evaporation, which is barely perceptible and is due to the diffusion of water in the epidermis, which is necessary for the hydration of the skin.

Every day, we lose almost half a liter of water, depending of course on the climatic conditions that surround us.

Intake

Our body receives water in different forms.

Here are our 3 sources of water:

- drinks
- food
- metabolic water

Drinks

We must distinguish between direct water intake, when you drink water and only water, and indirect water intake, when you drink any other drink than water.

The effect on your body is not the same. You need direct water intake and you can't consider tea or coffee or worse, soda, to be equivalent to drinking water.

Too many people, especially children, hardly ever drink water but always drink beverages, most of which are sodas and fruit juices. Unfortunately, beverages are not equivalent to the hydration provided by water.

Food

The water contained in food is precious because it is linked to the phytonutrients in the food.

This water, found mainly in fruits and vegetables, can meet more than 30% of our daily needs!

This is one more reason why we need a plant-based diet for our health.

In fact, many people underestimate the amount of water contained in a food. For example, a cucumber contains up to 96% water and an apple more than 85%, like most fruits and vegetables.

Note that most fruits have about the same percentage of water as a drink. Soups represent the category with the second highest water content, with values ranging from 82 to 95% depending on the recipe.

In contrast, dry foods such as breakfast cereals, cookies or chocolate often have a water content of less than 5%.

Metabolic water

Metabolic water is produced by the oxidation of sugar, fat and protein to form ATP, our energy source.

The amount of water produced by metabolism is roughly equal to the amount of water lost through pulmonary evaporation.

Dehydration

Generally speaking, dehydration is a rather unclear concept to most people.

While everyone has the cliché of the person lost in the desert dying of thirst, few people identify dehydration on a daily basis.

Today, unfortunately, there are more people who are dehydrated than those who are adequately hydrated.

In order for you to really understand what dehydration is, we will distinguish between acute and chronic dehydration.

Acute dehydration

Acute dehydration can be thought of as a person lost in the middle of the desert, dying of thirst.

It is a serious situation, usually combining heavy exertion and/or exposure to excessive heat without being able to hydrate.

Apart from infectious causes and serious illnesses, the causes of acute dehydration are obvious.

It is important to note that the notion of excessive heat is influenced by several parameters:

- the environment: locked in a car, in the city and surrounded by concrete, in nature, in the mountains, at sea, etc.
- the percentage of humidity
- the wind
- the length of time you are exposed to it

According to these parameters, when the temperature exceeds 28 degrees, it can already be too hot for some people.

The symptoms

Before reaching serious symptoms such as coma, the symptoms of acute dehydration are mostly non-specific and variable, such as:

- increased breathing and heart rate
- sudden fatigue
- headaches
- irritability
- confusion
- cramps
- abdominal pain
- vomiting and diarrhea
- etc.

Risk situations

Let's look at the most common risk situations for acute dehydration.

Sports activities

Practicing a sport or making a major effort in hot weather is always dangerous. Only people who are perfectly trained for such conditions can do so.

Sunstroke

Although it has always been known, sunstroke still kills people. Indeed, too many people underestimate the danger of prolonged exposure to the sun, especially when it peaks in the sky.

That's when you run the risk of sunstroke, i.e. heat stroke with possible sunburns.

Beware, this situation is even more risky on water or in the mountains, because the fresh air or water will prevent you from feeling the first signs of sunstroke.

Confinement

Staying too long in confined and overheated spaces such as apartments, waiting lines, elevators or even worse, vehicles, can be very dangerous.

Indeed, these can generate a vague feeling of discomfort that you will not be able to identify as acute dehydration.

Alcohol

This is probably the most common risk situation of all. Too many people still think that alcohol quenches their thirst. This is not true, alcohol dehydrates!

This false belief is largely the result of misleading advertising by the alcohol lobby, especially with the famous "thirst-quenching beer".

Moreover, alcohol has a hepatotoxic and neurotoxic action that seriously harms the liver and the brain.

The toxic effects of alcohol are even worse if you are exposed to hot weather. Alcohol disrupts the production of vasopressin, an antidiuretic hormone, and interferes with the body's ability to regulate temperature.

Vasopressin is essential since, in the event of dehydration, it protects us from losing too much fluid through the kidneys by stimulating them to reabsorb as much water as possible.

Therefore, instead of saving your remaining fluids, you urinate more and lose more fluid, even in hot weather.

Drugs

All drugs and chemical medications can alter your state of consciousness. They put you at risk because of their neurotoxicity and the reduced alertness they induce.

People at risk of acute dehydration

Those are mainly:

- sick people

Their sickness usually weakens their resistance to heat and therefore to dehydration. This is the case for renal or hepatic insufficiency, immunodepression, cancer, cardiovascular diseases, etc.

Moreover, the side effects of their medication worsen with heat and dehydration, which can lead to physical and psychological decompensation.

- people with disabilities

Disabled people can have the same fragility as sick people, to which is added their dependence, even to drink, due to their disability.

- the elderly (>80)

If they are sick or on medication, they face the same problems as sick people but their age makes them even more fragile.

Even if they are not sick, the hydration of their tissues, the functioning of their organs and their muscle mass are much lower than those of a 40 year old person. They will not have the same resistance to high heat and lack of water as younger people.

- Infants

Infants are fragile because they have not fully acquired the mechanisms to regulate their body temperature when exposed to extreme conditions.

In addition, their organs are not mature, they have few metabolic reserves (water, fat, nutrients, etc.) and they do not have the autonomy to hydrate themselves or to express their discomfort.

- young children

They are often very active and do not yet know their limits, which leads them to play too long in hot weather or in the sun.

Moreover, if they hydrate themselves, they tend to drink sodas instead of water, drinks that are unfortunately widely distributed by adults.

- our animal friends

Animals are very sensitive to heat stroke. Unfortunately, they are too often the first victims of these.

We are not talking here about animals in farms or captivity who endure unimaginable suffering when it is hot, nor about their transport conditions, which are an absolute disgrace.

No, we are talking about pets, which are an integral part of the "human" family.

The car is undoubtedly the most frequent place of heat stroke, often fatal for our animal friends. Unfortunately, pets are too often prohibited in stores, restaurants, beaches, workplaces, etc.

Inevitably, leaving your pet in the car becomes tempting.

We are not talking about criminals who voluntarily leave their dog to die of heat in their car in the sun.

However, anyone can in good faith not realize how quickly the car turns into a death trap for its occupants.

That's why the rule is simple:

Never leave your pets in the car

The risks are multiple:

- malicious individuals can steal the animal or harm it in some way
- the temperature inside the car can rise very quickly
- even if parked in the shade, remember that the sun is rotating and the car can be in direct sunlight quickly
- even if the car is parked in the shade or in a parking lot, the car accumulates heat very easily which can quickly become suffocating.

This is why we advise you to organize your travels according to the well-being of your pet (as well as to avoid bringing it in noisy, dangerous and crowded places).

All animals need access to clean water at all times, especially in hot weather.

Our large pets, such as horses, can also suffer greatly from heat and dehydration.

From personal experience, we know that many of them live in unacceptable conditions, exposed to heat and lack of water.

In summary

Every year, thousands of people die from acute dehydration outdoors, but also in their homes and in transportation.

It is more vital than ever to inform as many people as possible about these situations that put them at risk of acute dehydration.

Our advice

- As soon as it gets hot, drink very regularly throughout the day, even if you are sitting in your chair! The lack of physical effort can make you forget your thirst!
- Avoid physical exertion in hot weather and be especially careful in the mountains or on water.
- Protect people at risk and animals in particular
- Avoid extreme situations as much as possible
- Never leave a child or an animal in a car when it is hot, even with the windows ajar and in the shade
- Do not drink alcoholic beverages or poisonous beverages

- If you leave your home, always take enough water and a head cover.

Chronic dehydration

Much more subtle than acute dehydration, chronic dehydration is widespread in the population.

We estimate that approximately 70% of the population suffers from chronic dehydration.

Chronic dehydration is mainly caused by a lack of regular water intake and mechanisms that deceive and distort our sense of thirst.

It can lead to many health problems.

At the macroscopic level, the liver and kidney functions can no longer take place normally, causing, for example, the kidneys to have difficulty diluting waste sufficiently to eliminate it.

At the microscopic level, intracellular particles can no longer move and transform normally, transport through cell membranes is disrupted and the recovery of metabolic waste by the lymph is diminished. Our fluids thicken, our blood becomes more viscous because its water content decreases.

Chronic dehydration also impacts our entire body through the complex mechanism of dryness management.

> When the body is dehydrated, not only is a system established to suppress all water outflow, but in accordance with a predetermined priority program, a system of rationing and distribution of the available water is triggered, ensuring true drought management. *Dr. F. Batmanghelidj VOTRE CORPS RÉCLAME DE L'EAU Effets méconnus de la déshydratation, French edition, 1994*

Over time, chronic dehydration affects all of our body functions, making it a major health problem.

Symptoms and effects

The following symptoms are not usually identified by the patient as related to dehydration.

This is because these symptoms are not specific to a single cause, as is too often the case with most symptoms and health problems.

However, improvement is regularly seen when the person hydrates more, which is perfectly logical and consistent with our body's physiology.

The symptoms of chronic dehydration can be diverse and varied:

- constipation
- headaches
- dry mouth
- dry skin and hair
- dry and irritated eyes
- dry and irritated lungs
- chronic fatigue
- premature aging
- digestive problems
- irritability and lack of concentration
- circulatory disorders
- sleep disorders
- muscular and articular disorders
- gynecological disorders and infertility
- etc.

Metabolic consequences

In case of dehydration, our body takes the missing water in this way:

66% taken from the water contained by the cells

26% from the extracellular volume (the water between the cells)

8% from the blood volume

You won't feel anything when your cells lose water, and that's the problem, chronic dehydration is all too often silent and progressive!

Thus, too many people suffer from dehydration without even realizing it.

Our advice

Motivate yourself to drink more!

To do so, imagine what your body has to endure because of dehydration.

8% less water in your blood volume makes your blood more viscous, imagine your blood like a half dried river whose water tends to stagnate, how do you want the fish (your cells) to survive and move easily?

1/3 less extracellular water (between your cells) and it is all the capacity of your tissues to get rid of their waste that is hindered, as if you were doing the laundry by hand and you had no more water to rinse your clothes.

For our athletic friends, imagine that for every 1% of dehydration, the loss of performance is estimated to be about 10%.

So, are you motivated to stay well hydrated?

We also advise you, as part of a plant-based diet, to limit your consumption of dehydrated or low-water content foods, such as dried fruits, crackers, oilseeds and cooked flours like bread.

These foods, consumed in too large quantities, will unbalance our water intake.

Thirst

The first thing that comes to mind when talking about acute or chronic dehydration is thirst.

Indeed, as we have seen in acute dehydration, thirst is the natural alert that our body uses to tell us that dehydration is occurring.

So naturally, our thirst drives us to drink until we quench it.

But should we wait until we are thirsty to drink?

Thirst, a good and bad thing

There has long been a controversy about thirst, with some claiming that by the time we are thirsty, it is already too late, we are dehydrated. Following this logic, we should drink without waiting to be thirsty.

Indeed, thirst appears when we are dehydrated, so it is a sign of physiological stress that prompts us to drink in order to avoid a situation of injury to our body.

Thus, drinking only when we are thirsty would be a mistake, because we would be putting our body in a state of stress too often.

However, being occasionally thirsty is not a problem.

To understand where the difference lies, let's clarify these 4 concepts:

- a light and diffuse thirst (more or less permanent)
- thirst that is present but not urgent
- intense and urgent thirst
- occasional thirst

Light and diffuse thirst

Slight and diffuse thirst, more or less permanent, is a clear sign of chronic dehydration. As we will see below, it can, with time, be masked.

It is often accompanied by a more or less strong state of general malaise with non-specific symptoms. Many people tolerate it very well, to the point of believing that they are not thirsty.

Thirst that is present but not urgent

Present but not urgent thirst can be a sign of acute or chronic dehydration.

It is a typical example of someone who does not have access to good daily hydration or who often has to wait for a drink.

Let's take this opportunity to point out that this is the case for many children in school who are forbidden to drink during class! A true disgrace.

Intense and urgent thirst

Intense and urgent thirst is undoubtedly a sign of acute dehydration.

There is no doubt that this thirst is not healthy for our body as it makes us suffer. Instinctively, we do everything to avoid it.

Occasional thirst

Occasional thirst can appear occasionally in certain situations.

It is not harmful to our body, because the situations that generate it are not necessarily related to severe acute or chronic dehydration.

For example:

- you have eaten food that is too dry or too salty
- the outside temperature has warmed up considerably during the day and you have not drunk enough since the morning
- you went for a walk and did not take water
- you are on a new medication and it makes you thirsty
- you are in a closed environment and the air is stale

Is thirst a reliable sign?

In the case of acute dehydration, there is no doubt that thirst is a strong and reliable sign.

But in the case of chronic dehydration, when you are used to drinking only when you are thirsty, thirst is not a reliable sign.

If you are chronically low on water, thirst will adapt to your level of dehydration and only become noticeable as your condition worsens, keeping you in a permanent state of dehydration.

Ignoring or deceiving your thirst is a common practice in our lifestyles. It starts with confusing drinking with drinking water.

As we have seen above, sugary or alcoholic beverages will deceive our bodies and quench the sensation of thirst without hydrating us.

Moreover, they easily accompany an industrial, sweet, salty and fatty diet that also dehydrates us!

Same problem with coffee, which will stimulate us and dehydrate us at the same time. This is especially true for people who drink several cups of coffee a day.

Our body thinks it is drinking and therefore hydrating itself, when in fact it is drinking and dehydrating itself.

It is also possible to cheat thirst by eating instead of drinking, which many people do unconsciously. Eating relieves stress, fatigue, boredom and thirst.

True hydration

We have opted to call it "true hydration" rather than "optimal hydration" because far too many people are simply falsely hydrated.

As we have just seen, we cannot take the absence of thirst as a sign of good hydration.

In order to be properly hydrated, we need to maintain a minimum of 65% hydration in our body to ensure proper metabolic function.

While it is very easy to weigh yourself to monitor your weight, calculating your hydration remains approximate, even with the new scales that evaluate weight, muscle mass, body water, body fat and bone mass by bio-impedance (passage of an electric current).

Furthermore, these scales are not very accurate and will not tell you the intracellular water content, which is the most affected in case of dehydration.

Although we must compensate for our daily losses by hydrating, it is not enough to drink anything to be properly hydrated.

True hydration is complex and depends on many parameters.

We can classify them into two broad categories:

- our state of health
- our water intake

Our state of health

The state of health of our body plays an important role in its hydration.

Without going into technical concepts of anatomy, physiology and pathology, we can draw a very evocative parallel between the hydration of our body and that of the earth.

An earth without humus, dry, stony, does not retain water. If you water it, the water slides or penetrates with difficulty and evaporates easily.

On the contrary, a healthy soil, rich in humus and organic matter, loose and aerated, alive with millions of micro-organisms and invertebrates, retains water and limits losses.

It is exactly the same with the tissues and organs of our body. If they are healthy, they will properly absorb healthy water and stay well hydrated.

But as for the healthy earth, many parameters will impact the quality of our tissues and organs.

For example, our hormonal, mineral or nervous balance will influence the quality of our tissues and organs, their physiological state and therefore, ultimately, our proper hydration.

Therefore, we can say that true hydration is intimately linked to our diet, our lifestyle and our state of health.

We can also say that a sick body is always a dehydrated body.

Our water intake

In the next chapter, we will elaborate on the water pyramid, which, like the food pyramid, will help you understand how and what to drink on a daily basis.

As we've seen in water throughout history, it's hard to believe that our most basic and precious commodity is the most difficult to obtain today.

Still too few people deign to pay attention to the quality of their water, when, let's re-iterate:

Our bodies are 60-70% water!

Moreover, our intake of quality water depends directly on our ability to filter our water properly or to still have the rare privilege of having access to unpolluted natural water.

Our water intake will therefore depend not only on our daily organization, but also on the means we use to have healthy water available at all times.

Pathologies and metabolic disorders

There are many pathologies and metabolic disorders that can disturb our water metabolism.

For example, a common case is that of people suffering from edema and dry skin at the same time.

For these people, it is very often incomprehensible, not knowing if they should drink more water or not.

Although it seems totally paradoxical, these two pathological situations are not in fact incompatible.

To understand this, imagine different compartments in your body: skin, blood, organs, etc.

Under normal circumstances, water should be distributed harmoniously and pass through these different compartments according to their needs.

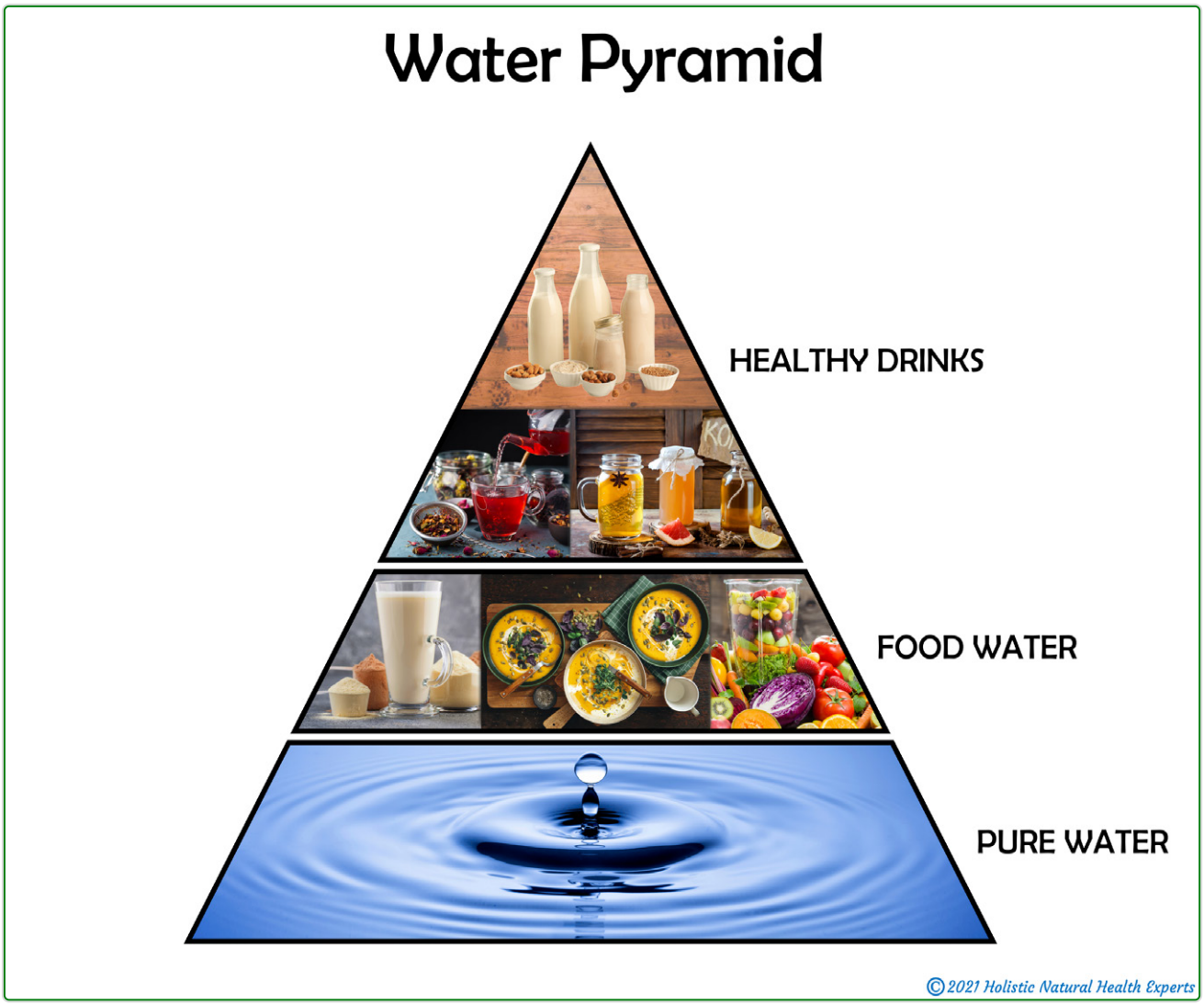
In case of dysfunction, water can be in excess in some compartments and insufficient in others.

It is as if in a house, there were rooms that were too wet and others that were too dry.

Of course, this explanation is very simplistic, the reality being much more complex.

An individual treatment is necessary in any pathological situation, by an expert in natural medicines and by "conventional" medicine if necessary.

The water pyramid



Pure water

We are the only creatures on earth that consume thousands of beverages other than pure water, and inevitably we no longer drink pure water in sufficient quantities.

Yet pure water should be our primary source of liquid. This water, as we will see in the types and sources of water, must be as qualitative as possible.

Unfortunately, nowadays, it is very rare to have access to naturally pure water, so most of us are forced to filter it efficiently.

Please note that by "pure water" we mean water that is free of contaminants.

Natural water is never pure in the sense that it contains other elements, such as minerals.

It is the best water to ensure optimum hydration and therefore to really quench our thirst.

As we have seen, in case of dehydration, 66% of the water missing from our body is taken from the water contained by the cells (intracellular water).

This is huge and... painless; thus, without realizing it and little by little, our cells function less well.

Pure water is the best water for our cells. We must get into the habit of drinking it before any other drink.

Let's not confuse the temporary sensation of being quenched by drinking ice-cold sodas or energy drinks with water which is truly hydrating.

Too few people, including children, drink pure water, and that is a shame!

The daily consumption of pure water should be between 1 and 4 liters depending on your needs.

Water from food

A healthy diet consisting of 1 kg of fresh fruit and vegetables per day provides you with about 800 ml of water.

This water is irreplaceable because it contains unique phytonutrients specific to the type of fruit and vegetables you eat. It transports and solubilizes nutrients, such as vitamins, minerals and antioxidants from the plant, making them highly absorbable for your body.

The rawer fruits and vegetables you consume, the more intact and living nutrients you will get from this water.

Soups

Raw or cooked soups are also an important source of water. Invigorating, hot, spicy or neutral, thick or very liquid, they are part of all culinary cultures and have been known since the beginning of time.

Most vegetables are perfectly suited to be eaten in soup.

Miso soup, a Japanese tradition, is excellent for bringing back proteins, carbohydrates and lipids as well as minerals and vitamins to the body.

Shakes (powders + liquids)

Shakes can replace a meal or serve as a highly nutritious and hydrating snack.

Popular with active people, they can be consumed all year round, and all foods and superfoods are suitable, such as maca, spirulina, chlorella, acai, berries, reishi, shitake, hemp, wheatgrass, cocoa, moringa, matcha, etc.

Smoothies

Smoothies should not be confused with fruit juices. In fact, smoothies are made from whole foods that are simply blended in a blender.

Smoothie recipes can contain fruits, vegetables and superfoods.

For children, smoothies are the ideal snack because they are easy to prepare, guaranteed raw and without loss of vitamins!

Liquid food, our advice

Although soups, shakes and smoothies are part of a healthy diet, they should not systematically replace solid and whole foods.

Let's not forget that digestion begins in the mouth with chewing and salivary impregnation. However, when food is very liquid, we tend to drink it, thus bypassing this first essential step.

Moreover, liquid food, although rich in water, does not replace the intake of pure water, essential for the hydration of our body.

Some people, feeling sufficiently satisfied with the amount of liquid food ingested throughout the day, may simply not feel thirsty and forget to drink pure water.

Healthy beverages

We call healthy beverages:

- herbal teas (including black, green and white tea)
- fruity waters
- liquid, fresh or powdered plant milks
- cereal coffees and other similar preparations
- hot or cold chocolate (with plant milk of course)
- fresh lemon juice
- fermented drinks such as kombucha or kefir

Herbal teas

Herbal teas have the advantage of being drunk hot or cold. They can be made from one plant or a mixture of several plants.

They can be consumed at will, all year long, just one key word to keep in mind: variety!

With meals, prefer hot herbal teas to help digestion.

You can vary the pleasures according to your tastes, here are some examples:

- lemon-ginger
- mint
- verbena
- basil
- tarragon
- cardamom
- thyme
- cinnamon
- orange blossom
- rosemary
- fennel
- angelica
- sage
- liquorice
- lemon balm
- dandelion
- artichoke
- yarrow
- calendula
- chamomile

Do not consume herbal teas that you do not like under the pretext that they are good for digestion.

Drinking herbal tea with a meal should be a pleasure,
drink only the ones you like!

Children do not like bitter or strong herbal teas, suggest herbal teas such as mint, verbena, orange blossom, lemon balm or lemongrass.

Fruit waters

Fruit waters allow you to prepare drinks to be consumed fresh or at room temperature with delicious and varied tastes, with fruits and aromatic plants.

Without alcohol, without added sugar, they contain the natural sugar of fruits. You can therefore very easily measure the quantity.

Here is an example of an easy recipe to prepare for 1 liter of water:

- 2 lemon or orange peels
- 2-3 slices of ginger or 1 cinnamon stick
- 1 stalk of lemongrass or 1 star anise
- 1/2 slice of dried pineapple

Instead of pineapple, you can use apples, bananas, figs, strawberries and many other fruits depending on the taste you want.

The most used plants are mint, hibiscus, lemon balm and basil, but the combinations are very numerous.

They are prepared like a tea, by pouring hot water, and after infusion, you add water at room temperature.

These drinks are a good alternative to the sugary drinks usually offered to children.

Plant milks

Plant milks can be prepared fresh in a few minutes.

They are pleasant drinks rich in water (80% - 90%), moderately nutritious and can be consumed at will by the whole family.

They can be drunk as is or mixed in shakes, smoothies, cereal coffee, matcha, cocoa, etc.

There are many vegetable milks, here are some examples:

- soy milk
- rice milk
- oat milk
- spelt milk
- millet milk
- quinoa milk
- hazelnut milk
- almond milk
- chestnut milk
- tiger nut milk
- buckwheat milk
- hemp milk
- etc.

Moreover, nowadays, you have the possibility to make your own vegetable milks in a few minutes and to have an unpasteurized drink!

Pasteurization partially denatures the proteins and destroys the phytonutrients sensitive to heat; if you can avoid it, it is a definite benefit for the quality of your plant milk!

Moreover, making your own plant milks will save you money.

Here is a very easy to use system:

https://www.laitvegetal.fr/lait-vegetaux/

https://www.plantmilk.org/shedding-some-light-on-vegan-milkers-new-filter/

Baby milk

Homemade or store-bought plant milks are not a substitute for breast milk.

Vegetable milks for infants must be "mothered", which means that their content must meet specific nutritional needs.

This is the case for example for:

premiriz (0 to 6 months)

Corn maltodextrin*, vegetable oils* (sunflower*, coconut*, rapeseed*), hydrolyzed rice proteins*, fructo-oligosaccharides* (prebiotic vegetable fibers*), oil extracted from the microalgae Schizochytrium sp.[2]. Minerals: calcium phosphate, potassium chloride, magnesium oxide, iron lactate, zinc sulfate, copper sulfate, manganese sulfate, sodium selenite, potassium iodide. Vitamins: A (retinol acetate), D2 (ergocalciferol), E (α-tocopherol), K1 (phylloquinone), C (sodium ascorbate), B1 (thiamine hydrochloride), B2 (riboflavin), B6 (pyridoxine), B12 (cobalamin), B5 (calcium pantothenate), B3 (niacin), B9 (folic acid), B8 (biotin) Choline, inositol, L-carnitine, L-tryptophan, L-lysine.

https://www.premibio.fr/premiriz/

bébé M (0 à 6 months)

Corn maltodextrin* (EU origin), vegetable oils* (coconut extract*, sweet almond*, rapeseed*), hydrolyzed rice protein* 15%, corn starch*, EPA/DHA, minerals (calcium phosphate, calcium carbonate, potassium phosphate, potassium chloride magnesium phosphate, zinc oxide, copper sulfate, iron sulfate, manganese sulfate, potassium iodide, sodium selenite), vitamins (C, PP, B5, E, B2, A, B1, B6, B9, K, B8, D, B12), L-Lysine, L-Tryptophan, Choline Bitratrate, Inositol, L-Carnitine, L-Tartrate.* From organic farming.

https://www.greenweez.com/bebe-mandorle-m12112

Cereal coffees

Cereal coffees can be an alternative to decaffeinated coffee. Indeed, decaffeination is often a toxic process.

Amongst cereal coffees, some, such as Yannoh instant, do not contain gluten since it is eliminated during the manufacturing process.

The roasting is done at low temperature, which has the advantage of denaturing as little as possible the cereals, chicory and acorns. They are suitable for the whole family and can be diluted in various vegetable milks.

Hot or cold chocolates

These drinks are made from raw cocoa and superfoods, without any roasting or cooking.

This is the case, for example, for the Maccacino of the Iswari brand.

https://iswari.ch/fr/macaccinos/58-43-macaccino-original-fairtrade-bio-250g-1000g-iswari.html#/1-poids-250
https://www.iswari.com/en/shop/macaccino-original-reishi-bio-250gr

Other brands exist and you can also make your own by mixing raw cocoa, a superfood (e.g. maca) and a low glycemic index sugar like coconut sugar (or a natural sweetener).

Raw cocoa beans are sun-dried, fermenting naturally at room temperature. The slow process and avoidance of high temperatures preserves all vitamins, enzymes and other phytonutrients.

Raw cocoa can be replaced by matcha (ground green tea).

Fresh lemon juice

While we don't recommend fruit juices as drinks, fresh lemon juice is definitely the exception that proves the rule.

Thirst-quenching, aromatic, digestive, tonic, anti-inflammatory, rich in vitamins and antioxidants, lemons contain very little sugar, so their juice poses no problem and provides many benefits.

Although it can be consumed pure, fresh lemon juice is commonly added to pure water.

In addition to the juice, you can use the whole lemon (organic only) by slicing it into the water jug.

Beware of the lemon slices served in restaurants: they are, unless otherwise indicated, industrial and chemical.

Fermented drinks

Fermented drinks are good for our body. In recent years, they have come back into fashion thanks to the probiotics they contain and their low sugar content.

At one time, a majority of the population regularly drank fermented drinks such as mead, kefir, kvass, ginger beer, kanji, etc.

Unfortunately, sodas and syrups have gradually replaced these fermented beverages, so much so that today the majority of people do not even know how to ferment a drink.

However, fermentation is a natural process that occurs by itself in nature.

In concrete terms, fermentation is the transformation of certain sugars contained in organic substances, such as fruits and vegetables, under the action of enzymes (also called "ferments") produced by micro-organisms.

The micro-organisms involved in fermentation are of two types: bacteria and yeasts (fungi).

These micro-organisms are naturally present on the surface of organic fruits and vegetables, which are not treated with pesticides or irradiated.

As long as the fruit or vegetable is protected by its skin, these micro-organisms are not in direct contact with the sugars necessary for fermentation. As soon as this barrier is broken by crushing, grating or cutting the food, and that the environment is mainly anaerobic (without oxygen), the fermentation process starts.

Attention, here we are talking about fermented beverages with a low alcohol content (less than 3%).

Beer and wine are also fermented drinks, but they contain too much alcohol and are classified as toxic drinks.

Little to not recommended drinks

Sugary drinks, tea and coffee

These are the most widely consumed beverages almost everywhere in the world. These drinks do not really hydrate and for some of them, their effect is quite the opposite.

It is important to distinguish between industrial drinks and organic drinks, be it those that are bought or homemade. Here, we are only talking about organic drinks, industrial drinks being automatically toxic.

These drinks can be consumed in small quantities but are not recommended for two major reasons:

- their high sugar content, even when organic.
- the treatment they have undergone such as roasting (tea, coffee)

Sugary drinks

Cold teas, lemonades or syrups, even organic ones, all contain too much sugar.

Of course, occasionally, you can make yourself delicious cold teas that are much less sweet or sweetened exclusively with natural sweeteners.

If you want to learn more about these natural sweeteners, check out our topic on healthy eating.

Sugary drinks do not hydrate or quench your thirst. They only serve to make you consume sugar diluted in water with a pleasant taste.

This sugar quickly passes into your bloodstream and causes a strong release of insulin.

As a result, it makes you gain weight, increases your appetite and does not hydrate you.

In general, avoid all sugary drinks.

Black tea

Black tea is oxidized and fermented. When heated, it loses some of its antioxidants, which is why green tea is preferred.

Black tea is consumed for its taste, aroma and stimulating effect, because it contains alkaloids such as caffeine, theobromine and theophylline.

These psychostimulant alkaloids are also contained in coffee, cocoa, guarana, mate and kola nut. Black tea is not without interest for its polyphenols, such as flavonoids, which are important antioxidants.

It also contains, in varying quantities depending on the tea, vitamins and minerals, but also tannins that can reduce their absorption.

For black tea, it's all a question of quality and reasonable quantity.

Coffee

Coffee, along with black tea, is one of the most consumed drinks in the world. The real problem with coffee is its roasting, which leads to the formation of undesirable molecules that are harmful to our body.

Among other things, this leads to the formation of AGEs (Advanced Glycation End products), which we have already discussed in the topic on healthy eating, and acrylamide (found in roasted foods, including French fries).

Coffee can therefore quickly become problematic and strongly acidify the body.

Avoid it as much as possible, and if not, consume a 100% Arabica organic coffee with a soft roast from time to time. Coffee does not quench thirst, on the contrary, it dehydrates and cuts off the sensation of thirst.

Unfortunately, it is not uncommon to see people whose only beverage of the day is... cups of coffee.

Fruit juices

If you prepare a fruit juice in a juicer, add vegetables such as celery, carrots or cabbage to minimize the total sugar content.

If consumed in moderation, they can be considered healthy drinks.

In contrast, industrial and pasteurized fruit juices often made from fruit concentrates are clearly toxic drinks.

Freshly squeezed fruit juice

Fruits contain different sugars, but fructose is the main sugar, followed by glucose.

For fresh fruit, the fructose content varies, depending on the fruit, from 0.3 gr to 7 gr per 100 gr, the average being 3 gr per 100 gr.

If you eat 600 g of fresh fruit per day, you ingest about 18 g of fructose and about 12 g of glucose.

When fruit is eaten whole, the fructose is metabolized naturally by the liver as it is digested and passed into the bloodstream.

A freshly squeezed orange juice of 2 dl (one glass), without added sugar, requires 2 oranges and brings you, according to the weight of the oranges, about 6 gr of fructose and 6 gr of glucose, obviously, the same rate as if you ate the whole fruit.

On the other hand, the passage in the blood of fructose and glucose will be much faster. As a result, the glucose will cause a faster release of insulin and the fructose will reach the liver more quickly and will be a greater burden on the liver.

Moreover, consuming fruit juices makes you lose all the nutritional benefits brought by the flesh of the fruit and buying organic fruit to throw away the essential is really a shame.

Therefore, strongly limit fresh fruit juices. If you use an extractor, always mix them with vegetables and again, limit their consumption.

Do not consume organic fruit juice in pasteurized bottles, even with a flash pasteurization (80° for 20 seconds), your fruit juice is altered and you lose important nutrients. Moreover, the taste changes immediately as soon as the fruit juice is no longer fresh.

Toxic drinks

Sodas and syrups

They are the most consumed drinks in the world. Unfortunately, young people are its biggest consumers.

These drinks do not hydrate, they stimulate the appetite and provoke strong releases of insulin. They are largely responsible for the explosion of obesity and diabetes that we have been experiencing for the past 30 years.

In order to be marketed, these sweetened drinks must always meet 2 criteria: be sweet and cheap.

Some can exceed 30 gr of refined sugar for 250 ml. Which is insane!

Industrial or home-made, these drinks are real toxic bombs with their flavors, colorings and other additives.

Although their consumption is commonplace, do not underestimate the damage that such drinks can do to your body!

Synthetic sweeteners

A trend developed in the 1980s: the use of synthetic sweeteners in food and industrial drinks.

Preferred by the multinationals of the food industry to replace sugar and thus reduce the number of calories, the synthetic sweeteners are all toxic for our body.

Here are 3 examples of their numerous harmful effects:

- disruption of the intestinal flora
- weight gain
- disruption of neurotransmitters

Non-caloric artificial sweeteners (NAS) are among the most widely used food additives worldwide, regularly consumed by lean and obese individuals alike. NAS consumption is considered safe and beneficial owing to their low caloric content, yet supporting scientific data remain sparse and controversial. Here we demonstrate that consumption of commonly used NAS formulations drives the development of glucose intolerance through induction of compositional and functional alterations to the intestinal microbiota.

These NAS-mediated deleterious metabolic effects are abrogated by antibiotic treatment, and are fully transferrable to germ-free mice upon faecal transplantation of microbiota configurations from NAS-consuming mice, or of microbiota anaerobically incubated in the presence of NAS. We identify NAS-altered microbial metabolic pathways that are linked to host susceptibility to metabolic disease, and demonstrate similar NAS-induced dysbiosis and glucose intolerance in healthy human subjects. Collectively, our results link NAS consumption, dysbiosis and metabolic abnormalities, thereby calling for a reassessment of massive NAS usage. *“Artificial sweeteners induce glucose intolerance by altering the gut microbiota”*

https://www.nature.com/articles/nature13793

Drinks with synthetic sweeteners deceive your body. The latter perceives the sweet taste in the mouth but does not receive the calories of sugar. Thus, you will want to eat even more to satisfy this craving.

....You drink a can of diet soda, and your brain thinks you just stumbled across a wild blueberry bush or something—and sends urgent signals to consume, consume, before someone else gets wind of our bounty.
Now, your body's not stupid. It knows if you eat too many calories of any food, you might get fat, and not be able to outrun some sabertooth tiger. So, there are signals that come up from our gut when we absorb calories into our system—telling us eventually to, okay, slow down, we've had enough.But, with noncaloric sweeteners, we have a disconnect.

We just have the appetite-boosting effects on our brain of the sweet nerve sensations from our tongue, but without the appetite-suppressing effects of the calories coming into our system. And so, this revved-up appetite may lead us to overeat—more than we would have without the diet soda—and end up gaining weight. *Neurobiology of Artificial Sweeteners Michael Greger M.D. FACLM December 6th, 2012 Volume 11*

https://nutritionfacts.org/video/neurobiology-of-artificial-sweeteners/

No matter how you look at the effects of artificial sweeteners, the result is negative.

Aspartame, for example, one of the best-known synthetic sweeteners, interferes with brain metabolism and impacts our mental health.

Imagine the consequences on the brain of children, much more sensitive to the toxicity of sweeteners.

The NIH-AARP study of hundreds of thousands of Americans followed for years, found that frequent consumption of sweetened beverages, especially diet drinks, may increase depression risk among older adults, whereas coffee consumption may lower the risk. Whether soda, fruit-flavored drinks, or iced tea, those artificially sweetened drinks appeared to carry higher risk. Same with hot tea or coffee. .....Various effects of artificial sweeteners, including neurological effects, have been suspected. For example, aspartame—the chemical in Equal and Nutrasweet—may modulate brain neurotransmitters such as dopamine and serotonin, although data have been controversial and inconsistent. .....

In a review of the direct and indirect cellular effects of aspartame on the brain, it was noted that there are reports of aspartame causing "neurological and behavioral disturbances in sensitive individuals," such as headaches, insomnia, and seizures, but they go further and propose that "excessive aspartame ingestion might be involved in the [development] of certain mental disorders and also in compromised learning and emotional functioning." ..... *Aspartame & the Brain Michael Greger M.D. FACLM December 17th, 2014 Volume 22*

https://nutritionfacts.org/video/Aspartame-and-the-Brain/

Industrial or pasteurized fruit juices

All fruit juices are toxic drinks, except for freshly squeezed organic fruit juices mixed with vegetables such as celery, carrots, cabbage, etc.

Industrial juices made from real fruit with no added sugar are still harmful to our bodies because of the poor quality of the fruit used, their contamination by pesticides and their heating for preservation.

As for reconstituted fruit juices based on fruit concentrates, they are simply made of a fruit pulp obtained by heating and other industrial manipulations and water. All mixed with more or less additives.

Moreover, industrialists add vitamin C to their fruit juices, but this is only a marketing argument and has no interest for your health.

It is really regrettable that these drinks are served to children, who need water above all!

Alcoholic drinks

The consumption of alcohol is a worldwide recognized scourge, but the different lobbies impose their rules and alcoholic beverages are not going anywhere anytime soon.

> Globally, Europe is the part of the world where alcohol is consumed the most, with 10.3 liters of pure alcohol per person per year, compared to 4 liters in Southeast Asia, 6 liters in Africa and 8.2 liters in America. It tends to increase with economic development, especially in China and India. However, when the majority of the population in a region is Muslim, consumption remains low. According to the World Health Statistics 2017 (WHO), Lithuanians are the biggest drinkers with 18.2 liters of pure alcohol per person per year.
>
> This is followed by Belarus (16.4), Moldova (15.9), Russia (13.9), Romania and the Czech Republic (13.7). In Eastern European countries, since the early 2000s, all of these countries have seen an increase in the amount of pure alcohol consumed. Preferred beverages vary greatly from one country to another. For example, in many European and African countries, the preference is for beer, while in European wine-producing countries, the latter will be consumed more. As for spirits, they are more appreciated in Eastern Europe, Asia and in some island states.
>
> The trend in preference is changing, as more and more consumers are interested in beverages other than those produced in their own country. It is not possible to accurately report actual alcohol consumption data worldwide, as many alcohol products (e.g., from individuals and unreported trade) escape national records and surveys. Therefore, this is only an approximate representation of the current situation of global alcohol consumption.
>
> https://www.stop-alcool.ch/fr/l-alcool-en-general-2/statistiques-sur-la-consommation/en-suisse-en-europe-et-dans-le-monde

Needless to say, the consumption of alcohol is always toxic for the body as soon as it exceeds the very small quantities that can be found naturally in drinks or fermented fruits.

For those who drink organic wine or beer, the problem is obviously the amount of alcohol they consume: a single glass of wine, a glass of champagne or a beer already represents 10 grams of pure alcohol. However, the liver can already be severely impaired with 1g of alcohol...

Let's remember that the liver has more than 500 metabolic functions and that the detoxification of alcohol is limited and interferes with other essential functions that the liver must perform.

Social alcohol, even in moderation, is therefore toxic for our body.

We will develop the subject of alcohol in more detail in a subject dedicated to drugs.

Types and sources of water

You might think that drinking water is enough to keep you hydrated, but the biochemical and physiological actions of water are complex. They depend on its nature and composition.

In order to make it easier for you to understand, we have classified the different waters into 5 types:

- non-drinking water
- drinking water
- pure water
- perfect water
- therapeutic water

Non-drinking water

Non-drinking water is perhaps the one that everyone agrees on. It is water that can make you sick quickly or kill you because it contains one or more of these contaminants:

- disease-causing microbes (bacteria, fungi, viruses, etc.)
- heavy metals
- chemical poisons (pesticides, industrial waste, etc.)
- radioactive waste

Depending on the contaminants, the doses at which water is considered undrinkable can range from zero to maximum thresholds that must not be exceeded.

Many diseases can be transmitted through non-drinking water, for example: cholera, hepatitis A and gastro-enteritis. The list is long and obviously varies from one country to another.

https://www.who.int/water_sanitation_health/diseases/diseasefact/fr/

This is why non-potable water should never be consumed as is.

Logically, we could think that only a small minority of people on earth would lack drinking water... and yet:

> About 2.1 billion people, or 30 percent of the world's population, still lack access to safe domestic water supplies and 4.4 billion, or 60 percent, lack access to safely managed sanitation services, according to a new joint report by the World Health Organization (WHO) and UNICEF.

This is due, in large part, to the three major problems with water:

- it is not considered an indispensable, inalienable and non-tradable common good
- it is not a priority for poor countries or corrupt governments (in all countries)
- water (which is the most precious good with natural ecosystems) is used as a dumping ground for all polluting human activities

Today, the problem of water in both its quantity and quality is a major planetary problem.

Rainwater

Nowadays, rainwater must be considered, unfortunately, as non-drinkable by default.

Due to massive chemical pollution in the atmosphere, rainwater is frequently loaded with various contaminants.

Of course, there is still uncontaminated rain on earth, depending on the geographical location.

If rainwater harvesting is practiced, it is imperative to analyze the quality of the water and to filter it properly if necessary.

Drinking water

Tap water

Tap water is polluted by all the elements that the purification plants are unable to eliminate. It contains hormones, antibiotics and other drugs, pesticides, herbicides, fungicides, heavy metals, endocrine disruptors and other industrial and agricultural pollutants.

The amount of this pollution varies greatly from country to country, but it cannot be said that it is advisable to drink tap water, and yet this water is considered safe to drink because it does not represent a major health risk.

Let's take the example of heavy metals. Today, we are all contaminated to varying degrees. Heavy metals are called heavy because their density exceeds 4 gr/cm3.

We consider here only those which are toxic for our organism, even with weak dose, because they cause

- an oxidative stress
- a chronic inflammation
- a cellular toxicity
- competition with other metals such as zinc and magnesium, preventing them from fulfilling their essential functions for our cells and enzymes.

The best known are mercury, lead, cadmium, aluminum and arsenic.

Pesticides and other poisons used in agriculture such as organophosphates, organochlorines, neonicotinoids, SDHI, etc., account for thousands of molecules that are toxic to our body cells, causing, even at low doses

- cancers
- neurological diseases
- sterility
- malformations in fetuses
- etc.

In 2021, although there is no longer any doubt about the toxicity of pesticides, they continue to be massively used.

SDHI

In 2017, researchers from the French National Institute for Health and Medical Research (Inserm) decided to test SDHI fungicides used in agriculture in their laboratory. They then discovered that these molecules, supposed to kill only fungi, also act on human cells, those of earthworms and nematodes, the microfauna essential to the good health of the soil... With potentially disastrous consequences for humans, pollinators and all biodiversity.These fungicides block an enzyme, the SDH (succinate dehydrogenase), interrupting cell respiration. An enzyme that is present in all living beings... In humans, the disruption of SDH can cause neurological damage, severe heart disease, tumors of the head and neck and cancers.

https://www.pollinis.org/publications/alerte-fongicides-pollinis-demande-le-retrait-immediat-des-pesticides-sdhi/

Today, all groundwater is contaminated by pesticides, so you will inevitably find them in your tap water.

The agrochemical lobbies have infiltrated the health authorities to such an extent that they have succeeded in imposing acceptable thresholds for food and water poisoning.

Drinking water is therefore compromised by the various contaminations it undergoes.

Here are the points taken into account to define the potability of water:

- the absence of bacteria, viruses, parasites and other pathogenic germs
- standards not to be exceeded for pesticides and heavy metals
- standards not to be exceeded for nitrates
- acceptable" quantities of micropollutants in all categories
- and ideally, the absence of organic or fecal matter from agriculture

In reality, these standards are impossible to meet, especially for organic matter.

This is why water treatment plants add chlorine to drinking water (for its disinfectant action) and sometimes even aluminum!

Depending on the country, other additions such as fluoride can contaminate the water. Water fluoridation is very common in the United States, where 1 to 2 milligrams of fluoride per liter can be found in tap water, or even more.

Fluoride is normally found in small amounts in healthy foods such as dates, green vegetables, carrots and many others.

Mineral waters naturally contain fluoride, a maximum dose is set at 5 mg per liter, which is already too high in fluoride.

For children and especially infants, the dose of fluoride ingested should not exceed 1 mg per day, so fluoridated mineral water should be avoided.

If a 10 years old child drinks 1 liter of tap water, the fluoride level will be excessive because it is necessary to add the dietary fluoride, including fluoridated table salt, sometimes the fluoride prescribed by the dentist or the doctor and especially the fluoride in the toothpaste! This will expose him to more than 4 mg of fluorine per day!

When we know the damage that an excess of fluorine can do on the neurological development of children, we understand the aberration of water fluoridation.

A small quantity of fluorine, naturally provided by a healthy diet, is sufficient for its metabolic action where it contributes to the fixation of calcium and phosphorus in the bone tissues and strengthens the structure of teeth, bones and cartilages.

> Dr. Catherine Rossi: "In 2010, the WHO classified fluoride as one of the 10 most toxic products for the environment. It has also been declared by Europe as a priority hazardous substance since 2013. But few people seem to know this, and when the WHO sets standards of contamination not to be exceeded - 1mg/day for children and 4 mg/day for adults - this is attributed to the tablets or drops prescribed daily without asking more questions.
>
> But Professor Anne-Marie Musset, from Strasbourg, has found that 80% of fluorosis (excess fluoride that causes stains on teeth) in children is due to the fact that they swallow toothpaste. Pediatricians and dentists prescribe daily doses of fluoride without ever doing a fluoride intake assessment and without taking into account the fluoride content of the water in the area where they live...
>
> But medicine is still far from measuring the impact on the general health and especially on the cognitive and emotional functions of children who are subjected to fluoride since birth. Fluoride has been shown to damage the brain, disrupt behavior and learning. Studies have shown that fluoride causes a decrease in IQ. Researchers have also found that fluoride leads to more early puberty, iodine deficiency with hypothyroidism and bone cancers in young men. Dr. Catherine Rossi

Another common problem with tap water is its contamination by radon.

Radon is a naturally occurring radioactive gas formed from radium naturally present in the soil, most strongly in granitic and volcanic subsoils.

Radon is soluble and dissolves in groundwater, which is why it is found in drinking water. Of course, radon can also contaminate you through building materials, but its presence in tap water is not taken seriously enough and maximum levels are too often exceeded.

Tap water is therefore often drinking water, but certainly not healthy water. Regular consumption of tap water is an undeniable source of contamination by harmful substances.

It can only be consumed very occasionally when no other alternative is available and only in countries where it is officially declared as potable.

In countries where drinking standards cannot be met, the majority of people buy bottled water or water filtering devices.

Bottled mineral water

Very criticized today because of the mountains of plastic waste it generates, bottled water has mainly developed over the last 40 years thanks to fierce marketing.

Representing a turnover of several billions per year for the multinationals, it generates a lot of problems in the regions where it is taken.

It is indeed absurd to transport water over miles just because we do not have pure water at home.

However, mineral water was originally born out of the honest need of city dwellers to consume water without contaminants, with particular tastes and therapeutic properties.

This was probably a good idea at the beginning, because these waters were consumed in glass bottles, coming from really clean sources and far from the pollution affecting the developed areas.

Unfortunately, today, bottled water is packaged in plastic bottles and it is not uncommon to see it contaminated by pesticides and especially phthalates of the plastic, the best known of which is Bisphenol A (BPA). Be careful, BPA-free bottles are not necessarily phthalate-free, because there are many others: BPB, BPC, BPE, etc.

BEYOND BPA

On January 1, 2015, BPA was to be banned from food containers. To replace it in the inner linings of cans, new resins have emerged, mostly acrylics or polyesters or both, often mixed with vinyls and urethanes. Plant-derived oleoresins are also available, but their use is limited because they react poorly with acidic foods. As for other uses, the replacements for bisphenol A are mostly... bisphenols.

Bisphenol F is used in epoxy resins and thermal papers, bisphenol S in thermal papers as well as in epoxy resins, phenolic resins, polyesters, polycarbonate, polyethersulfone (replacing polycarbonate resins used in baby bottles and children's dishes).

Bisphenol S is already found in most plastics used in baby bottles and adult containers. These plastics are labeled "BPA-free". They are said to have the same drawbacks as BPA.

All bisphenols have similar chemical structures and flexibility of use. In 2013, ANSES issued an opinion on the assessment of risks related to Bisphenol A for human health and on toxicological and usage data for bisphenols S, F, M, B, AP, AF, and BADGE (bisphenol A diglycidyl ether). This document emphasizes the need for a combined developmental toxicity and carcinogenicity study, as well as the estrogenic potential of GMPs and BPSs due to the structural analogy of these substances with BPA.

Urine analyses carried out in the United States, Japan and China have shown that Bisphenol S is already present in the bodies of the majority of the population (more than 80% in the United States). For Professor Jean-François Narbonne, an expert toxicologist at ANSES and author of the book "Sang pour sang toxique", "Bisphenol S is even worse than bisphenol A because it is more persistent in the environment!" He believes that political lobbies have pushed for a hasty replacement of bisphenol A and that the resulting fix is worse than the problem. This is what recent studies show, suggesting that BPS increases the risk of hyperactivity in children, but also the risk of arrhythmia.

https://www.thierrysouccar.com/blog/adieu-bisphenol-bonjour-bisphenols-f-s-m-b-etc

Phthalates are also found in almost all plastics and packaging, but also in hundreds of products such as cosmetics, toys, detergents, soaps, perfumes and building materials.

Of course, when it comes to bottled water, the marketing argument of the multinationals is to reassure you that these phthalates do not pass into the water but remain inside the plastic.

This is more or less true, except that mineral water bottles will sooner or later be exposed to heat, which induces the release of phthalates from the plastic into the water.

Make no mistake about it, the mineral water bottles lined up in the cooler of the supermarket have first been transported, then stored and often subjected to temperatures that can exceed 60°C.

Once the phthalates and other substances have been released into the water, they remain in suspension, invisible to the naked eye, and no longer bind to the plastic.

That's why we recommend that you avoid drinking bottled water, and simply carry filtered water in a glass or stainless-steel bottle when you travel.

To learn more about plastic toxicity:

https://www.natura-sciences.com/sante/plastiques-toxicite-sante787.html

If you have no choice but to drink bottled water, we recommend that you drink water with a low mineral content.

As we have seen before, minerals and other nutrients are mainly assimilated by our body thanks to the water in food, which makes them highly bioavailable.

Therefore, contrary to misleading advertising arguments, it is not advantageous to drink highly mineralized water, quite the contrary.

In fact, the main function of the pure water we drink is not to mineralize us, but to hydrate and clean us. To do this, water must be low in mineral content.

Here are 3 examples of bottled water composition:

Hépar natural mineral water:

- pH (7.2)
- calcium (549 mg/L)
- magnesium (119 mg/L)
- bicarbonates (383.7 mg/L)
- sulfate (1530 mg/L)
- fluoride (0.4 mg/L)
- nitrate (4.3 mg/L)

This is an example of highly mineralized water as it contains more than 1500 mg of minerals per liter.

Badoit mineral water:

- pH (6)
- calcium (153 mg/L)
- magnesium (80 mg/L)
- bicarbonates (1250 mg/L),
- sulfate (35 mg/L)
- fluorine (1.2 mg/L)
- nitrate (7 mg/L)

This water is less mineralized and has different ratios. It contains more bicarbonate and fluoride and less calcium and magnesium.

Evian mineral water:

- pH (7 to 7.2)
- calcium (80 mg/L)
- magnesium (26 mg/L)
- bicarbonates (360 mg/L)
- sulfate (15 mg/L)
- fluorine (0.12 mg/L)
- nitrate (3.8 mg/L)

Evian water is a good example of low mineralized water.

Finally, we should not forget that mineral waters can contain radioactive elements, for example: uranium, potassium, thorium or radium (among others).

Although they are treated to reduce the presence of these elements, if you drink them regularly, this poses a problem.

Pure water

We define "pure" water here as water that is free of pollution.

Obviously, we should all have access to naturally pure water, i.e. water that is unfiltered, healthy and adapted to our body's needs.

Unfortunately, the opposite is true. Not only is it very difficult to find naturally pure water, but the filtered water that comes out of our taps is far from being pure.

Therefore, unless we have privileged access to naturally pure water, such as uncontaminated spring water, we are forced to filter it.

Once purified, this water is used for direct consumption, for cooking with water and for the preparation of all healthy drinks.

Purification systems

The need to purify water on one's own has not escaped the attention of opportunists, who have rushed to market a multitude of different filtration systems and devices.

In just a few years, the market for water filtration systems has exploded, so that you can find anything and everything.

Although we generally prefer to give you as complete a view as possible on the subject, we will make an exception here and instead tell you only about what we recommend you do.

In our opinion, it would be too long and tedious to explain the strengths and weaknesses of each system, each type of filter, each machine and each technology.

Osmosis water

The osmosis machine is currently the best device to guarantee the purest water possible. It is far superior to all other water purification systems.

Its mechanism is based on the principle of reverse osmosis filtration.

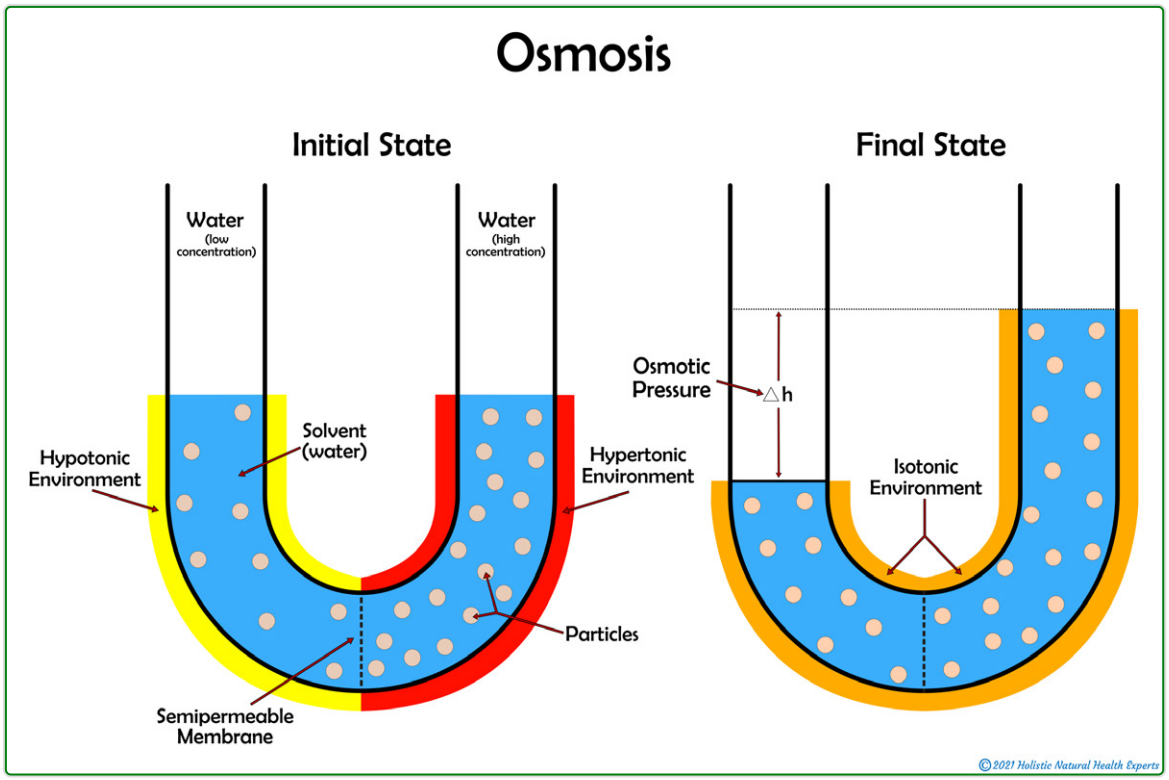
But to understand reverse osmosis, you must first understand the principle of osmosis.

Osmosis is a natural principle of liquid balance. This principle means that the different concentrations of two liquids, separated by a semi-permeable membrane (which only allows water molecules to pass through), harmonize.

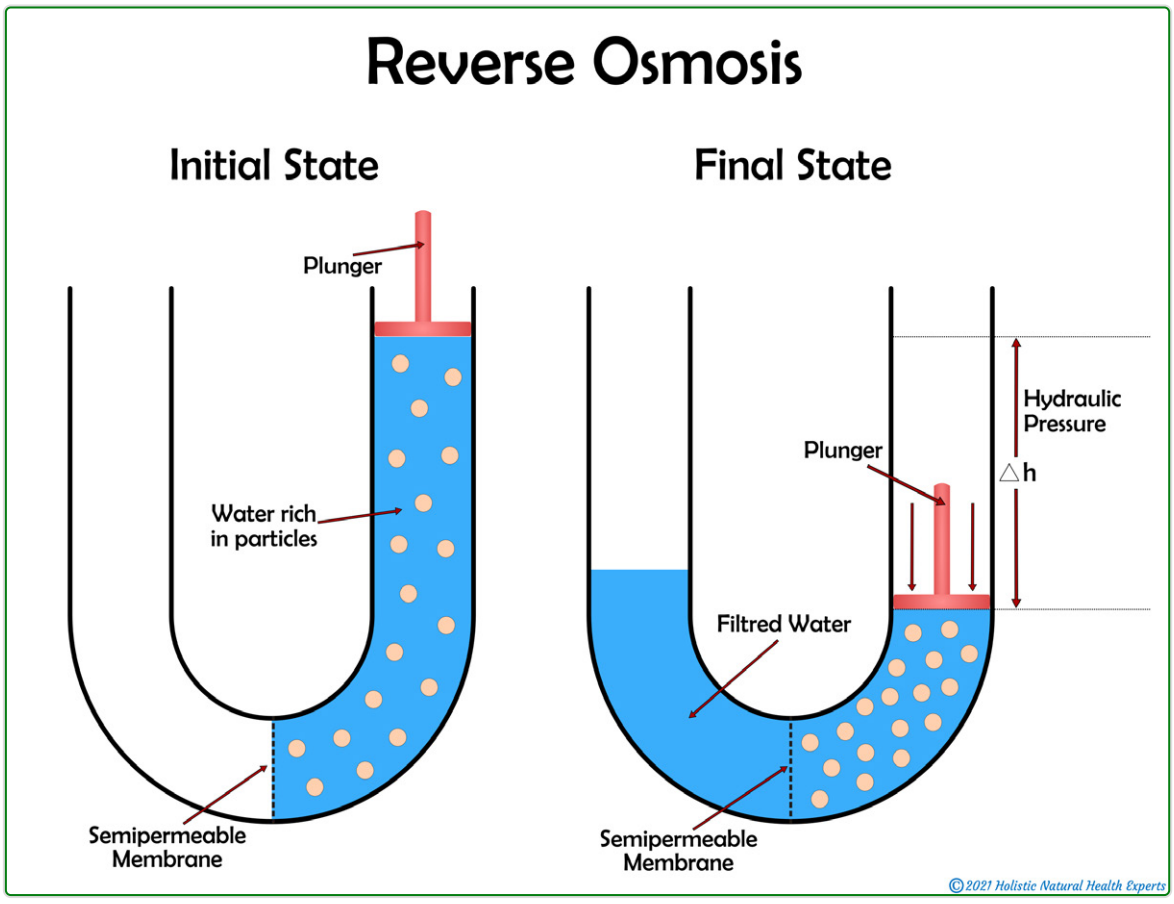
In concrete terms, water will pass through the semi-permeable membrane to dilute the more concentrated liquid, until equilibrium is reached between the two liquids.

Expressed differently, water moves from the hypotonic (low concentration) medium to the hypertonic (high concentration) medium, until two isotonic (equal concentration) media are obtained.

The force required for water to balance the two media is called the osmotic force.



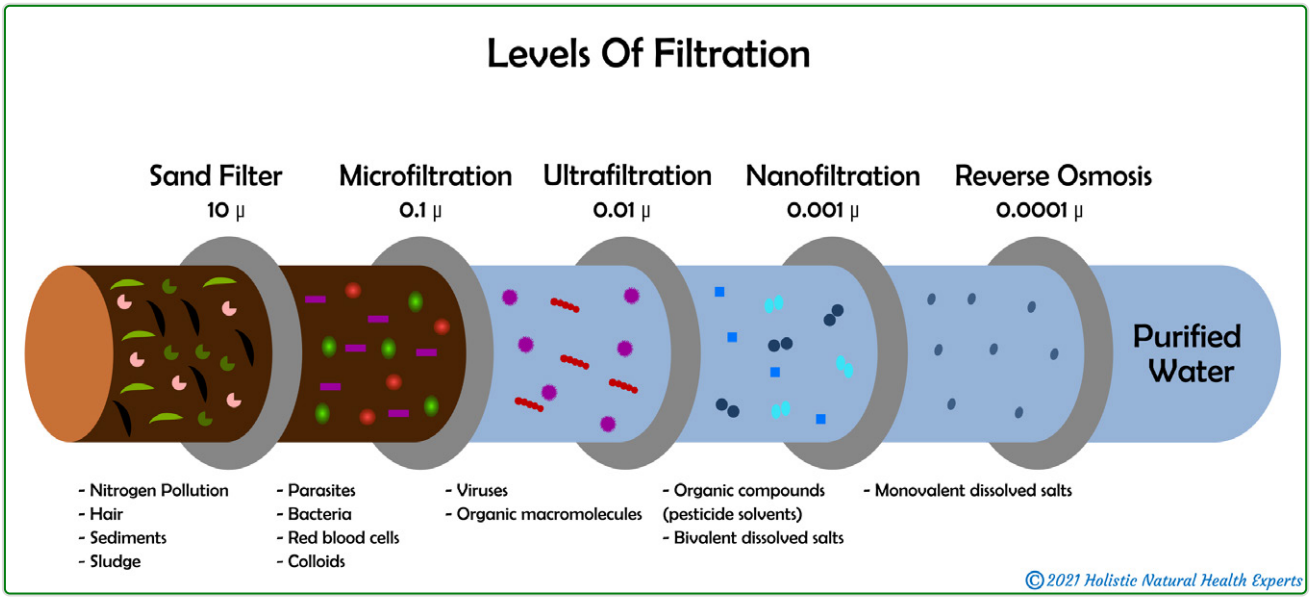
Reverse osmosis consists in going against osmosis, hence its name, i.e. forcing water to leave the more concentrated liquid by crossing the semi-permeable membrane, thanks to a pressure applied on this liquid.



Only water passes through this reverse osmosis membrane and we obtain purified water.

It is a simple process, similar to the manufacture of vegetable milk, where the pulp of the cereal or legume is pressed into a net with a certain amount of force to extract the vegetable milk.

For reverse osmosis, it is the same, except that the mesh of the net does not measure a few millimeters, but rather 0.0001 microns!



The huge advantage of this water purification system is that it requires only mechanical action, which is why reverse osmosis is used industrially for water desalination.

Indeed, thanks to reverse osmosis, the water is in no way polluted by the purification process.

It is therefore scandalous that water treatment plants still do not use reverse osmosis to provide pure water, and prefer the addition of chlorine to make tap water drinkable!

Reverse osmosis systems

About 30 years ago, the first models of osmosis machines for the general public appeared on the market.

Since then, considerable progress has been made. Today's reverse osmosis systems are more compact, more efficient and much less expensive, making reverse osmosis widely available around the world.

Nowadays, there are many brands and models of reverse osmosis units, but there are a number of criteria to take into account in order to choose the right model for your needs.

To help you efficiently in your search, we recommend these two websites on the subject:

https://www.josmose.fr/content/choisir-son-osmoseur-domestique
https://www.freshwatersystems.com/blogs/blog/what-is-reverse-osmosis

In any case, invest in a top-of-the-line RO unit to ensure that you get the best possible filtration quality over time.

In addition, high-end RO systems generally contain superior filtration membranes that last longer, reducing maintenance and filter change costs.

Perfect water

The concept of perfect water includes all techniques to improve the quality of purified water for direct consumption.

Reproducing nature

The premise of perfect water is that purified water is not equal to naturally pure water.

Indeed, when we purify water by reverse osmosis, we remove the pollutants that contaminate it but also the non-polluting elements it contains.

The result is purified water, but also water that can be considered "dead".

Some hypotheses tend to say that pure water (only H2O), which is no longer an electrical conductor, would not be good for our body for this reason.

This is why some people recommend adding, for example, a few drops of lemon to purified water in order to give it back its electroconductivity.

In nature, water is never found in its pure state (only H2O), but always linked to other molecules. All natural waters have a certain mineral composition at a certain temperature, which gives them unique characteristics of pH, resistivity, etc.

Should we deduce from this that we are not meant to drink pure water (only H2O)?

Surely yes, but we are not made to drink water contaminated by hormones, chemical drugs, pesticides, herbicides, fungicides, heavy metals, endocrine disruptors, etc.

So we have no choice anymore. Unfortunately, this is the price we have to pay for having polluted natural water without restraint for so long.

Humans have destroyed their most precious asset, so much so that today we are forced to choose unnatural options to avoid major sources of pollution.

This is something that everyone can instinctively understand. We cannot seriously believe that water coming out of a machine is equivalent to fresh and naturally pure water drawn from a waterfall in the middle of the forest.

Inevitably, the artificial will never be equivalent to the original, human creations will never be able to compete with nature's creations.

Not surprisingly, when we study naturally pure water, we find that adding minerals to purified water is not enough to transform it into naturally pure water either.

Myths and realities

Although we cannot reproduce naturally pure water, we can certainly try to imitate nature to get closer to it.

Many people have dedicated themselves to this, but after several decades, the results are disappointing to say the least.

Most of the systems developed are totally or almost totally based on marketing arguments and not on real tangible arguments.

Meanwhile, others have decided to take a different direction by seeking to improve water quality without trying to imitate nature.

Among these innovations, one seems to stand out: hydrogenated water.

Hydrogenated water

Hydrogenated water is simply water enriched with dihydrogen (H2).

This results in water (H2O) containing a certain amount of dissolved dihydrogen gas (H2).

The aim is to create an easy and efficient means of administration for the hydrogen gas (H2).

The first scientific publications on the beneficial effects of this gas for our body date back to 1975.

Since then, more than a thousand scientific articles suggest that it can have therapeutic effects on a large number of illnesses, notably thanks to its antioxidant action.

Personally, we have been using hydrogenated water for years and we find this additional approach interesting.

Among the many models of hydrogenated water devices, we advise you to buy models with H2 gas in direct outlet. These models are more expensive, but they are more durable and also allow you to inhale the gas directly.

To learn more about hydrogenated water:

http://www.molecularhydrogeninstitute.com/

https://www.josmose.fr/blog/98-quest-ce-que-leau-hydrogenee-

A specialized company with a wide range of devices:

https://maoan.en.alibaba.com/?spm=a2700.details.cordpanyb.2.514d17a9w6hCVN

Therapeutic water

Thermal waters

The therapeutic properties of thermal water have been known and observed since the beginning of time.

Thermal waters are hot waters, of underground origin. They are enriched in mineral salts and trace elements as they travel through the rocks. Their composition, complex, is therefore directly related to their geological and climatic region.

Let's look at thermal waters rich in sulfur: these waters will be different from each other due to the oxidation reaction when the water is in contact with the air. Different springs will therefore have sulfur in different molecular forms even if they have the same name, sulfur-rich waters.

Thermal waters are therefore living waters whose composition depends on the pH, the temperature, all the physicochemical reactions of the different minerals between them and obviously on the geological origin.

Their therapeutic actions are diverse:

- waters rich in sulfur are beneficial to fight against chronic respiratory infections. They are therefore used to fight against respiratory tract diseases such as rhinitis, sinusitis, otitis, bronchitis, asthma and many others.
- waters rich in sulfur and calcium are recommended for kidney ailments
- waters rich in sulfur, calcium and magnesium are recommended for all skin problems
- waters rich in sodium chloride are recommended for growth problems
- waters rich in sodium bicarbonate are excellent for all digestive problems
- waters rich in trace elements and particularly in arsenic are recommended for allergy problems

Quinton plasma

As we have seen, the development of the fetus takes place in the amniotic fluid. Our aquatic origin reminds us of the importance of the liquid environments that are essential to the life of our cells.

It was at the beginning of the 20th century that René Quinton, a French biologist and physiologist, developed in his book: L'eau de mer, milieu organique (1904), his research and understanding of sea water.

He sees many therapeutic applications for it. Indeed, seawater, at a certain dilution and quality, can favorably support the metabolism of our cells and tissues.

Because of its nutritional qualities in minerals, purified seawater with an osmolarity and precise physicochemical parameters will be called plasma.

It can be drunk, injected into the tissues or administered in infusions.

Although it fell into disuse with the advent of synthetic drugs, Quinton plasma therapy has made a significant contribution to the understanding of the impact of our extracellular fluids on our health.

Today, Quinton plasma is regularly used orally in natural medicine, with injectable routes reserved for physicians.

Quinton plasma is available in isotonic or hypertonic dilution, and its indications cover problems as varied as skin problems, ENT infections, demineralization, growth or nervous system support.

Our experience confirms the very interesting results obtained with Quinton plasma as a supplement in natural medicine treatments.

Adopting true hydration

As with healthy eating, adopting true hydration is essential to your health and requires changes in your daily habits.

To do this, start by putting your physiological needs back in the forefront.

Staying hydrated, eating, resting and exercising are not wishes, they are basic needs.

With these priorities back in order in your life, study the subject.

We strive to give you the best of our knowledge, but nothing replaces your personal work.

Moreover, each situation is different, and no one can apply a ready-made recipe. Only you can adapt the advice and knowledge we teach you to your needs.

Once this is done, the most important thing is to choose your water filtration-purification system.

Obviously, this comes at a cost, no water filtration-purification system is free. As with healthy food, quality comes at a price you have to be willing to pay.

It stands to reason that drinking water should be pure, we all pay taxes for it. Unfairly, the reality for most of us is that we either pay or we accept to be polluted.

Therefore, we advise you to take the time to choose the right device so that you don't regret your investment.

Finally, you should get into the habit of being self-sufficient in water, i.e. always have quality purified water on hand.

This will also make it easier for you to motivate yourself to drink, especially if you suffer from chronic dehydration.

Finally, don't forget the good old thermos on your desk, it's very efficient!

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Holistic Natural Health Experts are your guide to experiencing peak health. Learn with our experts how to create your most thriving and regenerative life.

Your health is the most important asset you have. Learn how to live in optimal health, and overcome challenges with personalized holistic solutions.

Whether you prefer to learn through one-on-one coaching, webinars, ebooks, or articles, our virtual clinic is available anytime, anywhere, offering you a comprehensive platform to support your growth.

You may benefit from our support in a range of situations including:

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- Understanding medical test results and reports
- Find natural products to replace pharmaceuticals and chemical treatments when possible
- Ideas for staying healthy and protected while traveling and on vacation
- Strategies for improving your health at work
- Deepened understanding of how your life choices impact your health
- Clarifying health goals that are meaningful and achievable
- Developing a vision of your optimal health and thriving for longevity
- Any other personal requests or concerns on any health related issue

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