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June 2018

Newsletter n. 3



*Dear Friends,
we would like to welcome you to
the 3rd Newsletter of the
CASTWATER project!*

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STEERING COMMITTEE – CYPRUS (28th- 29th November 2017)



The CASTWATER partnership met in Lemesos (Cyprus) on the 28th and 29th of November 2017, at the Water Board of Lemesos premises for the third Steering Committee.

PARTNERSHIP MODIFICATION

From April, the project partnership achieved two new partners, namely VENETO INNOVAZIONE S.p.A. from Italy and VALENCIA TOURISM FOUNDATION from Spain. The new Spanish partner replaced the original one LAS NAVES, which is no longer member. The new partnership had the opportunity to meet at the 4th steering committee in Porec on the 29th - 30th of May.

WATER IN 6 WORDS

Contribution from Veneto Region

In this 3rd issue, we continue with the 2nd chapter of the publication made by International Center of Water Civilization Onlus: "*Water in 6 words*". The overall publication covers the water issue giving an overview of different themes, with the aim to improve the water awareness and culture. We will publish one chapter per newsletter throughout all the next editions.

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Year 2017

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2. PURE

“Since the beginning the source clearness has been the emblem of the moral pureness: in all world people poems the innocence is compared to the terse gaze of the spring source”

Elisée Reclus, 1869

PURE WATER, LIFE BASIS

Water provides life and the existence on earth depends not merely on the quantity but also on the quality of the liquid element. For this reason, purity is a fundamental character of water for any human use. Therefore, food and hygiene have a fundamental role in human health and are closely related to water.

Scientists argue that pure water does not exist in nature. The one obtained in the laboratory - the distilled water - is considered pure for the mere fact that the content of solutes is lower than the value limit set for analysis. However, "pure" water belongs to our imaginary and it forms the archetypes used by advertisement, for the less noble purpose of selling us something that has often an apparent affinity with the water purity.

Every life depends on the available water quality and quantity



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WATER IN THE HUMAN BODY

The human body weight is constituted in a great part by water: it is more than 90% of our bodies right after the fecundation, while in the embryo the water percentage slightly decreases. In a newborn the water percentage fluctuates around the 80%, in an adult body it is on average around 70% and it further decreases with ageing. In the older bodies the water percentage could lower until the 50%. In conclusion, human life is characterised by a progressive water loss. In this way it seems that life depletes with the scattering of the vital element which constitutes us from the core and very essence of life.

The gradual liquid loss still continues during the afterlife. As an ancient religious precept says: "for dust you are and to dust you will" (Genesis, 3, 19).

Life is in opposition to death like water to dust. Water could be associated with movement, change and flow, in opposition to stillness, stagnation and the inability to change. The latter features are closer to death rather than life.

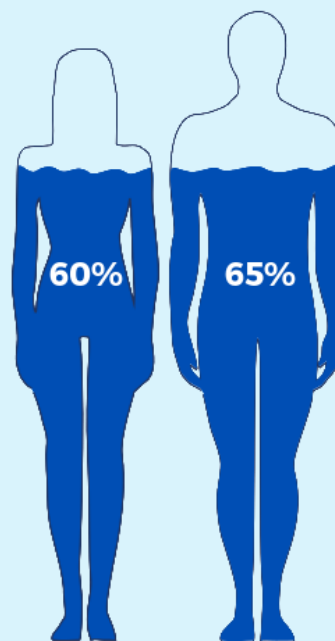
Water is the source of any known form of life



Water distribution in the human body

In the blood there is 80% of water, in the kidney 82%, in the muscles 75%, in the brain even 85%, etc. Water is the main fluid element that surrounds and lies within all living cells. Respiration, digestion, assimilation, metabolism, waste removal and its elimination, as well as temperature regulation are all body functions that can work only in presence of water. Water is essential for dissolving and transporting nutrients such as oxygen and mineral salts through blood, lymph and other body fluids. Water also keeps in balance the pressure, the acidity and the composition of all chemical reactions.

Water circulation between the blood and the organs is continuous and it is always maintained in equilibrium conditions. Most of this water is taken from the kidney, which filters our blood 15 times per hour. Through evaporation or excretion, the body eliminates a certain amount of water on a daily basis and this quantity has to necessarily be replaced.



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*99% of the molecules that compose
the human body are water ones*

Gerard Pollack

Professor of bioengineer at the University of Washington

WATER AND HEALTH

As an ancient proverb tells, water penetrates all the natural things. Water is the most common and powerful solvent in nature, the excellent one. In other words, it has the power to dissolve a lot of substances. For this reason the water is used to cleanse. With water we can wash, remove "dirt" from the human body, from the objects, from houses and cities. Yet, the hygiene concept has begun to spread in recent times. To retrace the hygiene history in Europe, it turns out that the use of water is a recent thing. For centuries, Europeans did not wash, mostly due to ideological reasons [cf. Epidemics].

The sewage system revolutionised the hygiene concept.

Potable water

The water is considered potable when it has certain chemical-physical and bacteriological features.

The maximum limits in quantity or concentration of other substances in water are regulated by the Legislative Decree of 2 February 2001 No 31, art. 4:

"Waters for human consumption have to be salubrious and clean [...] they cannot contain either microorganisms and parasites, nor other substances in such quantity or concentration able to represent a potential danger for human health".

Epidemics

Between 1835 and 1911, in Italy, the cholera epidemics caused at least one million of deaths (on a population of about 24 million people in the 1850s). Epidemics frequency used to be tremendous: 1835-37; 1849; 1854-55; 1865-67; 1873; 1884-87; 1893 and 1910-11.

The main cause of the infectious disease was a bacterium, *Vibrio cholerae*, which was found in contaminated waters, identified by Filippo Pacini in 1854. It was the German doctor Robert Koch to deepen the studies (Salazar, 2000). Before that, it had been believed that the cause of this disease was a divine punishment.

Since ancient times (at least since 2000 B.C.), the subtle link between water quality and health has been renowned. Since then, practice forms of disinfection were not rudimentary at all. In fact, the biocidal properties of copper and silver were known. Those of silver, for example, have been used for the same purposes in space missions by NASA's American aerospace agency.

Unfortunately, after the fall of the Roman Empire, the advanced practices and measures concerning the treatment and purification of the water process were lost.

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Sewers

Only in recent times, water has been commonly perceived as a substance that can be used with the purpose of repelling dirt, from human beings or from their homes. In this second case, the impact on cities does not need explanations. The concept of sewerage in Europe, as we now understand it, took the network structure only towards the end of the nineteenth century.

Even the Roman Empire, despite the abundant use of water, had never endowed the cities with a real sewer. In fact, the *Cloaca Maxima*, which had a particular use, constitutes an exception rather than the rule, because this sewage system consisted in open ditches (*puticoli*) scattered around the city (Altamore, 2008).

The job of street cleaning, where all sorts of substances were poured forth, was the slaves'. In the Middle Ages, this task was transferred to pigs. In the nineteenth century in Paris the excrements were used to fertilise large areas dedicated to the cultivation of vegetables: street cleaning became a profitable job and raised interest among people who opposed to the sewers realisation.

The mineral waters

The **fixed residue** is the parameter that measures the overall level of mineral salts contained in the water in given conditions. The value of this parameter allows to distinguish the mineral waters.

Today, the concept of mineral water is improperly associated to bottled water only, by common sense. In fact, all freshwaters are also mineral and each water differs from the others by the amount of minerals it contains (Ghetti, 1993).

Water could be considered *minimally mineralised* when the fixed residue does not exceed 50 mg/litre; *mineral* when the fixed residue does not exceed 500 mg/l and *rich in mineral salts* when the fixed residue exceeds 1500 mg/L.

Waters are classified for the quality of dissolved minerals, too. We find the *carbonic waters*, as well as *arsenic-chalybeate* ones, *chloride-sodium* ones, *sulfur* ones, *bicarbonates* ones, *sulphates* ones, *calcium* ones, *magnesite* ones, even *radioactive* ones and many more. Each of these has certain features to which specific benefits correspond and it has been demonstrated to be suitable for treating particular pathologies.



Roman aqueduct in Pont du Gard (France)

At the beginning of the twentieth century, with the realisation of the first water networks, the water was brought into private households and the hygiene spread.

Between 1900 and 1922, despite the WWI as well as the epidemic “Spanish flu” (which caused more deaths than the War), an increase of 25% in the European population was recorded. The growth was attributed to the use of water disinfection practices based on chlorine. In this way, the concept of water drinking spread [cf. *Potable water*]. Fortunately today, in most Italian cities, the quality of the tap water is good and safe, healthy and bacteriologically pure.

The other fundamental aspect of public hygiene is the removal of dirty water from homes and cities, through sewers. This practice has undoubtedly led to a significant increase in the quality of life, with clear benefits of longevity [cf. *Sewers*].

WATER THAT HEALS

Water can kill when it is contaminated and when viruses or bacteria affect it. But water also carries a powerful therapeutic effect which could be a powerful medicine. Treatments through external use or oral use of water are object of scientific study: the *medical hydrology* takes care of the actions and the therapeutic effects of the waters.¹

Hydrology is not a new science. In fact, the beneficial effects of the thermal waters were known since the time of the Romans and the Etruscans and even since the Neolithic, as archaeologists say. In the proximity of particular water sources, people from the Neolithic erected temples and sanctuaries, because of the special consideration our ancestors had of water.

Our organism needs pure water and every chemical and metabolic reaction that occurs in it, it is carried out under aqueous conditions. Water is the fundamental substance and the main agent of all the processes occurring in our body, from the removal of the slags to the transport of the food-stuffs, from the retention of the osmotic pressure to the regulation of temperature. Body waters carry informants, such as hormones, neurotransmitters, lymphocytes and other cells to the organs.

As the Iranian Doctor Fereydoon Batmanghelidj (1991) pointed out, dehydration is the first stressor of the human body, as well as of any other living creature, and frequently our body is thirsty without feeling the need to drink.

A good habit is to drink a glass of water early in the morning.

Humans can survive
about 5 weeks
without protein, carbohydrates and fats,
but only 5 days without water!

¹ *Hydrotherapy* use water of any origin in various ways (baths, showers...); The *crenotherapy* is the cure with natural springs.

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Roman Spas in Bath (UK)

Thermal spas

There are countless water uses for therapeutic purposes that can be practised. The term *crenotherapia* (which comes from the Greek *crené*, source) indicates the complex world of thermal treatments in which mineral waters are used (or mud combined with specific waters) and that provide curative effects. *Crenoterapia* is a natural cure par excellence and it is the result of secular practices and experience, nowadays confirmed by scientific research. In fact, *thermal medicine* is the branch of medicine that uses thermal waters for therapeutic and rehabilitative purposes, which must be prescribed and administered under medical supervision.

The thermal spas can be distinguished for external or internal water use with reference to the body. Internal *Crenotherapy* cures are the following: *hydropinotherapy*, or the mineral water assimilation practised in the spas; *inhalations*, i.e. the water assimilation through aerosols or nebulisation techniques (including the *endotympanic* insufflation); and *irrigation*, the insertion of water in the orifices of the body.

The external ones are: *balneotherapy*, practised with dives, baths or water jets with particular fea-

tures; *mud-bath therapy*, with clay applications, which comes from the contact with thermal waters, including radioactive sludge, salso-solfurus and salso-bromo-iodine; *antrotherapy*, which consists in the temporary permanence of patients in particular caves with presence of water.

Among the treatments carried out with water, it should be mentioned the *thalassotherapy*, which uses the marine agents for therapeutic purposes (from the Greek *thalassa*), in particular the seawater. In this regard, it is worth to remind that between the body water (blood plasma) and ocean water there is a remarkable analogy as to the chemical composition. In fact, the blood plasma is a saline solution.

The type of dissolved salts and their quantity in the water provide to the thermal waters particular features with specific curative effects. For this reason, the waters of each thermal spring are authorised by the Ministry of Health.

For Veneto Region, we would like to mention that the hydrothermal basin of the Euganean Hills (Abano, Montegrotto and Galzignano Terme) which counts more than 100 thermal wells, has hypertonic waters and salso-bromine-iodine which come out at temperatures above 40°C.

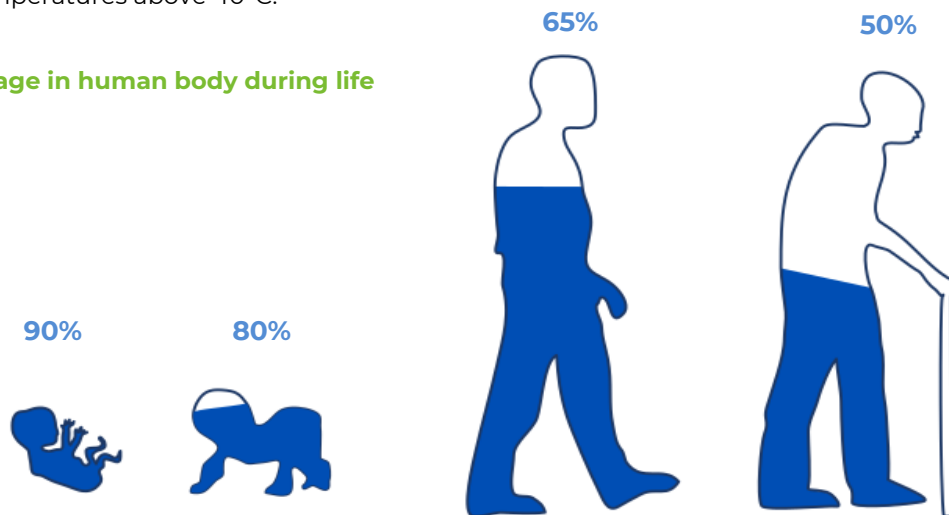
There is more water in the grey matter (85%) than in the other organs.

Our brain is completely immersed in water: it floats in the cerebrospinal liquid.

Will the water quality we assimilate, be good for quality of our thoughts, too?

The beneficial effects of thermal waters were known since the Neolithic.

Water percentage in human body during life



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The 22nd of March is acknowledged as the World Water Day, stated by the United Nations, since 1992. The aim of the annual recurrence is to raise the attention over water resources and each one of the 193 world countries with a seat in the UN headquarter, as well as NGOs, have been invited to participate actively for promoting water through different activities. The 2018 edition had its theme in “Nature for Water” which explores how natural-based solutions can be used to overcome the current water challenges.



[Find out more](#)

8TH WORLD WATER FORUM - WWF



The World Water Forum is the most important worldwide event for the water sector, which is carried out every 3 years. The Forum brought together the political, scientific and business community to discuss the key issues affecting the sector. The motto of the World Forum for 2018 was "Share the Water", which is to emphasize that scarcity and drought is a global problem whose solution must be addressed taking into account the principle of solidarity.



[Find out more](#)

3RD MEDITERRANEAN WATER FORUM - MWF

On 3rd – 4th of January took place the 3rd Mediterranean Water Forum in Cairo. This event has been identified as an efficient platform for dialogue and exchange knowledge among the Mediterranean stakeholders engaged to improve the cooperation over the water issue. The event, part of the World Water Forum, gathered the thematic and geographical Community to discuss on priority topics related to the 8th World Water Forum agenda.



[Find out more](#)

LOCAL NEWSLETTER SUMMARY

This section is dedicated to the news which comes from all the project partners. Here below you can see the title of the local newsletter contents. If you want to know more, do not hesitate to contact us!

MUNICIPALITY OF RETHYMNO

- Two training seminars for professionals involved in tourism;
- A telemetric system for water leakage detection and water saving at Rethymnon municipality;
- Measures to reduce Water consumption in order to prevent water shortage in the island of Crete were discussed during the meeting of the local Municipalities.

EMILIA ROMAGNA REGION

- Castwater Infoday – Rimini the 10th of May;

- The UN Global Goal n°6: safe and clean water;
- Tripadvisor Eco Leader: save water best practice.

VENETO REGION

- Interview to Vice-president of Federalberghi and Confturismo, Marco Michielli.

WATER BOARD OF LEMESOS

- CASTWATER project Info day.

UNIVERSITY OF PATRAS

- Info day for “Healthy and Clean Water for Human Consumption - Public Good”;
- 16th SETE (Greek Tourism Confederation) Conference on "Tourism & Development", 2017.

EUROMEDITERRANEAN WATER INSTITUTE FOUNDATION

- The IEA Foundation participated in the 3rd Mediterranean Water Forum;
- A platform is created in Murcia to share water technology;
- The Malta water authorities seek to strengthen its collaboration with the Region of Murcia.

INSTITUTE OF AGRICULTURE AND TOURISM

- Water management in accommodation facilities – Mediterranean vs. Istria;
- Water management in food and beverage facilities –

- Mediterranean vs. Istria;
- Example of good practice Hilton in Malta;
 - Tourism, water consumption and seasonality: the case of three towns in Istria County;
 - CASTWATER team from IPTPO held a meeting with the Administrative Department for Tourism, Istria County;
 - CASTWATER team from IPTPO held a meeting with the Istarski vodovod d.o.o.;
 - CASTWATER project Info day.

DEPARTMENTAL COUNCIL OF HERAULT

- Tourism and equipment fair (SETT – *Salon des equipment et technologies de tourisme*), Montpellier/Perol.

MALTA REGIONAL DEVELOPMENT AND DIALOGUE FOUNDATION

- New efforts for resources efficiency in Malta's hotel industry.

ENERGY AND WATER AGENCY

- Malta celebrated the World Water Day;
- Addressing the Water Demand of the Tourism Sector in Malta's 2nd River Basin Management Plan.

VALENCIA TOURISM FOUNDATION

- Valencia Tourism Foundation became a new project partner;
 - The project for a smart irrigation system.
-



**MUNICIPALITY OF RETHYMNO
(LEAD PARTNER)**



EMILIA ROMAGNA REGION



VENETO REGION



WATER BOARD OF LEMESOS



UNIVERSITY OF PATRAS



**EUROMEDITERRANEAN WATER
INSTITUTE FOUNDATION**



**INSTITUTE OF AGRICULTURE AND
TOURISM**



**DEPARTMENTAL
COUNCIL OF HERAULT**



**MALTA REGIONAL DEVELOPMENT AND
DIALOGUE FOUNDATION**



ENERGY AND WATER AGENCY



VALENCIA TOURISM FOUNDATION



VENETO INNOVAZIONE S.P.A.