

The Latest Science on Water

Great Advances for Whole Person Health

(It's not "Just Water" anymore)

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Introduction

At a worldwide Webcast from the University of Connecticut in October 2007, the debate on homeopathy, "Magic or Scientific Nonsense," the opening speaker, a Yale Professor of Medicine, clinched his opening gambit by pointing out that after all the dilutions and succussions and more dilutions, etc., obviously the homeopathic remedy could not possibly do any good because:...after all... "it's just water."

This article has very little to say about homeopathy but much more about that expression used in my title—"just water," because to the vast majority of the world's scientists, and most of the non-scientists, (liquid) water has been treated as—well—"just water." We all assume that while water may differ in purity or degree of contamination, all reasonably pure waters are "just water"—the *same* water, no matter what you do to it. It will be extremely rare to find a scientist who thinks any differently—that one could have more than one kind or structure of pure water.

Unfortunately from the real scientific viewpoint, nothing could be more wrong or more limiting a mistake. In the last several years a small group of scientists, chemists, physicists, and most relevantly, materials scientists, on the basis of long, detailed studies have concluded that the very opposite is true. The leading physicist notes that there are 64 changes of water from one form to another. There are certainly many, many different "waters," with different structures and, therefore, different properties. And that is the secret also unknown to virtually 100% of doctors, and the vast majority of physicians and dentists.

Water is without near competition—the single most important "phase" on earth. It is certainly the most abundant on the face of the earth. It is certainly by far the single most important material for "life" on earth and elsewhere (we believe as we search *first* for the presence of water on other planets). Nothing is more important for health. No biochemical entity has any function except in combination with water. Yet the mis-named National Institutes of Health has no institute, no program, no section, not a single expert on water!!! Explain that scientifically!!! If you can. We welcome a comment from NIH.

Yet the real world—that world outside the narrow confines formally labelled “science”—has appreciated the fundamental importance of water since human societies gathered. Water always appears as one of the four or five “elements” with fire, earth, wind, etc. Water’s centrality is known to nearly all religions—and celebrated in one way or another. Its role in human healing has been recognized and used in many different healing traditions. Our Western “science” catches up eventually—again. By one of those “synchrodestiny” events—to use Deepak Chopra’s term—after over a 50 year incubation time, my own scientific focus returned to the study of very nearly pure water, armed with a robust background in many of the relevant materials sciences.

Just the Facts

Since Lavoisier, Faraday, and Priestley’s mid-19th century work, water—as every schoolboy knows is H₂O—chemically made up of two hydrogen atoms and one of oxygen. Regrettably, for most scientists and physicians *that is about all they know about water*. They should surely be aware that water, H₂O is, also, without near competitor, the most anomalous, odd, peculiar, material on earth. The list of very different properties listed below are so striking that everyone should know water for the oddity it is—yet no one recognizes that for the huge opportunity it presents.

- WATER...has the highest dielectric constant of any common liquid, hence its action as a nearly universal solvent.
- WATER...has 64 different and highly anomalous changes in properties. (Later, the reader will learn that this demands that water have nearly the same number of different structures.)
- WATER...melts at a very high temperature (for such a liquid) and requires a great deal of energy or heat (enthalpy) to melt it, or boil it.
- WATER...when frozen can be changed into a dozen different thermodynamically stable, structures of ice—all with different properties.
- WATER...if cooled rapidly, can be made into glass—indeed even many different glasses.
- WATER...forms a myriad of *molecular aggregates*, some in the vapor phase, involving 2–200 H₂O units.

It’s not “just water” anymore.

Q.E.D.

This essay will be followed by others on the role of water in healing.

References:

R. Roy, W. A. Tiller, I. Bell, and M. R. Hoover, [*The Structure of Liquid Water; Novel Insights from Materials Research; Potential Relevance to Homeopathy*](#), *Materials Research Innovations*, Volume 9, Issue 4, December 2005, pg. 577-608.

R. Roy, M. R. Hoover, A. S. Bhalla, T. Slaweki, S. Dey, W. Cao, J. Li and S. Bhaskar, [*Ultradilute Ag-Aquasols with extraordinary bactericidal properties: the role of the system Ag-O-H₂O*](#), *Materials Research Innovations*, Volume 11, Number 1, March 2007, pg. 3-18.

R. Roy, *Materials science approach to the structure of liquid water and some extraordinary interactions with EM radiation and charged particles in metallic sols*, Vermont Photonics Conference, Mount Snow, Vermont, Oct. 18-20, 2007.

Chaplin M (2004) <http://www.lsbu.ac.uk/water/>

G. DeBenedetti and E. Stanley, *Phys Today*, 2003, 41:40.

M. L. Rao, S. R. Sedlmayr and R. Roy, *Single Mode 2.45 Ghz Microwave Caused Changes in the Structure of Water, and their Remarkable Stability*, MRS Fall Meeting, Boston, Mass., November 2007.

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