



## Hygiene everywhere, hygiene for everybody

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### **A shower of bacteria The hidden germs in the shower: a bacteriological bomb**

If hand washing helps prevent infections, to have a shower can cause them to come. From the study made by the University of Boulder, Colorado, the problem is inside the shower head. This study has highlighted the high concentration and formation of pathogenic bacteria especially in the shower head. Norman Pace, the first author of the article published in *Proceedings of the National Academy of Sciences (PNAS)*, has studied nine cities in seven U.S. states, including New York, Chicago and Denver, analyzing 50 shower heads in private houses and in public places.

He has concluded that about 30% of the equipment had significant levels of *Mycobacterium avium*, a pathogen agent that causes lung disease especially in people with immune system deficiencies, but in some cases it can infect anyone with a good health. As reported from the researchers, the presence of pathogens in hydraulic system pipe lines is quite normal. The problem gets worse in the homes because the bacteria accumulates in the shower head, grouping themselves into thin biofilm inside the shower head and reaching concentrations 100 times higher than the ones inside the aqueduct. In this way, it can happen to inhale droplets filled with bacteria. This study follows the survey of the National Jewish Hospital in Denver, in the United States, over the past decade, there has been an increase of lung diseases associated with non-tuberculosis mycobacteria such as *M.avium*, especially in people that use more the shower than the bath.

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### ***Legionella*: environmental killer Experience and contributions of Pavia University, 2006**

*The Legionella* present in water and water systems, continues to claim many victims in hospitals. The niches where it lurks and spreads are as followed : shower heads-aerators for faucets- Hot and cold water storage - water recirculation pipes (pipes).

*Legionella* can be transmitted in hospitals, in the bathrooms of boats, fitness centers, tourist facilities, athletic facilities and in many other places. The research illustrate the difficulty in eradicating *Legionella* from a water system, although decontamination treatment are made . This kind of treatment besides being expensive is valid only for a limited period of time, because of the high resistance of the microorganism.

*Pseudomonas aeruginosa* is another bacterium that causes serious pulmonary consequences, it is found in health care facilities and hospitals especially in washbasin siphon, bidet, showerhead and drainage wc.

**Varm Srl has realized a new sterilization system to eliminate viruses, bacteria from sewer drains to the sanitary bathroom (bidet, toilet, shower, washbasin). This system has been certified by ARPA (July 2010) for *Legionella pneumophila*, *Salmonella*, *Pseudomonas aeruginosa*, *Staphylococcus Aureus*, and *Escherina Coli*.**