

“Sterile medical, dental, veterinarian office, and home environment” in subject line  
Had to eliminate the last paragraphs after the benefits of Hydrogen gas  
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### News Release

Dentist Creates one of the Cleanest and Safest Office Environment in the Western Hemisphere  
09/25/2018

Over his four and a half decades in the private practice of dentistry, Dr. J Tim Rainey of Texas has strived from the time he opened his practice to present to create a safe and clean office environment. The recent destruction of his office by hurricane Harvey and follow up remodeling gave him an opportunity to put the finishing touches on creating the cleanest office environment in dentistry following sound, scientific guidelines. His office remodeling project has enabled him to develop a working prototype for any other medical, dental, or veterinarian office to follow to easily create a clean and safe environment for all office personnel and their patients.

Dr. Rainey's first efforts at developing a safe environment for his patients, staff, and himself was directed at inventing and building a dental unit that would deliver clean and safe water to his patients with the serendipity side effect of providing a safer environment for his entire staff. A dental unit that is not maintained properly, which includes at least 90% of all dental offices, is so contaminated that water taken from a urinal has been proven to be safer and cleaner than most dental units in operation today! There are several mechanisms that create a contamination link between successive patients that can be intercepted by addressing the sanitization of the water used in dental units. Dr. Rainey's efforts to create this dental unit resulted in the first and only patented dental unit that is also FDA cleared to market. (FDA # is K003265, Pat # is 6093021.)

The second part of this life's project has been creating the cleanest and safest office environment for his patients, staff, and himself! Dental Unit Water Line contamination has been recognized for decades with several deaths among the patient population traced back to DUWL's as well as a dentist's death due to his own water line contamination! Since this is a very difficult connection to make, it is assumed that sickness from the dentist' water lines is much more common than otherwise identified.

As with all inventions, new technology is developed that makes old technology obsolete. Dr. Rainey's original dental unit utilized the second most common cleanser in the food industry to provide safe water to his patients, chlorhexidine. The same surface stickiness that wiped out bacteria also created a maintenance problem for the dental units. The chlorhexidine would attach to the "O" rings in the dental unit's switching valves and the valves would stick unless the dentist ran food grade alcohol through the units on a regular basis to keep the valves from sticking, an insurmountable maintenance problem for most dental offices.

Recently three Biowell ozonated water generators became available on the open market. Ozonating water is the fastest and most reliable way to deliver sterile water to patients without the potential of damage to the delivery unit. Ozonated water from the Biowell CDU ozonated water generator can be used to fill the water bottles in dental units, and Dr. Rainey went one step further and installed the Biowell Mini ozonated water generator to pipe ozonated water directly into the dental units. Dentists have used a highly flawed system for analyzing the microbial count coming from their dental units that essentially measures the microbial count of the dental unit water bottles, and not the pathogenicity of the water coming from the water lines of the dental unit. Ozonated water disinfects the water in the lines coming from the water bottles, and Dr. Rainey recommends measuring the water coming directly from the instruments used in the patient's mouth. The dental units supplied with ozonated water were found to be very low in microbial count compared to inaccurate and misleading measurements of the water bottles in dental units of most dental offices. (Go to [www.jtimrainey.com](http://www.jtimrainey.com) to see the Biowell and Biolux ozonated water generators installed in Dr. Rainey's office.)

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Dr. Rainey's method of addressing dental unit water line contamination utilizes heavy concentration ozonated water in the dental unit water lines generated by the Biowell units to provide sterile water to his patients and to lessen the pathogenicity of the plumes generated when working in the mouth. We also use the Ozonated water constantly throughout the day to wash our hands and decontaminate just about everything we can wet. Hand washing with O3 assures almost instant sterility of the hands, while washing with Clorox would take several minutes to achieve the same level of sterility and washing your hands with soap is a distant third. Click on the link at the end of this article. ([http://biowellozone.com.au/technology/ozone\\_disinfection](http://biowellozone.com.au/technology/ozone_disinfection))

The instrumentation dentists use creates a pathogenic plume from the patient's mouth potentially dangerous to anyone exposed. How pathogenic? One of the markers used to determine exposure in a dental office to plume borne pathogens is the serum titer of Legionella infection. The front desk personnel in most dental offices is twice that of the general population! This means that the pathogenic "plumes" dentists create while working in the mouth somehow makes its way to the front desk and the personnel there are exposed to whatever is in that "plume" with Legionella being the easiest to detect. We have small free standing HEPA filters in the far corners of the office treatment rooms, and the central air conditioner has the largest HEPA filter that will fit the air handler as well as UV light sterilizers. It has also been shown that the instruments used by physicians to "burn" lesions create a pathogenic plume. Physicians and their staff have been treated for nasal warts directly related to inhaling the "plume" created when burning off papillomas (warts) on various parts of the body. Keep in mind that these contaminated plumes can be diffused to any part of the office and can contaminate anything and anyone in the office.

Think about the implications of everyday home use of this unit! The same technology we use in the office can easily be installed and used at home with the Biolux Hydrogen Fountain unit.

- a. Just the washing of hands with soap has been shown to decrease the transfer of bacteria and viruses from person to person. Think of how much more effective Ozone is in reducing the transfer of viruses like the common cold and flu viruses.
- b. We now have an Ozone water unit (the Biolux) that can be used in the home for the same reasons we use the Ozone water generators in the dental office. In household use, it would be mounted near the sink. Ozone is the most powerful bactericidal agent in nature. Ozonated water achieves rapid and effective disinfection and bacteria elimination in 10-20 seconds.
- c. Any home with a Reverse Osmosis system is ready for installation of a Biolux, and many municipal water supplies provide quality water sufficient for direct use. A simple test with a \$5 TDS meter (Total Dissolved Solids meter) will determine the readiness of the water source.
- d. Pesticides/insecticides: Rinsing vegetables and fruits directly with ozonated water rapidly and effectively degrades pesticide residues as tested by SGS. Ozonated water removes pesticide residue in 1-2 minutes and makes the "shelf life" longer.
- e. Rinsing fish, shrimp, meat and poultry directly with ozonated water provides rapid and effective disinfection, bacteria and microbe elimination as well as pollutant removal.
- f. Ozone water rapidly and effectively eliminates any "fishy" smell and odors when used for direct rinsing.
- g. Ozone water has several disinfecting and bactericidal applications in daily life: hand-washing, tableware, household utensils, knives and forks, bowls and chopsticks, cutting boards, dish rags, towels, as well as baby's pacifiers, feeding bottles, and diapers. Ozonated water is instantly effective in disinfecting C PAP hoses and masks. Mopping floors with ozonated water disinfects floors with no chemical residue. Wetting cleaning and dish rags allows simultaneous disinfection of both hands and surfaces.

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h. Ozone water can be added to washing machine water to provide a more effective and gentler disinfection better than Clorox without the risk of chlorine bleaching.

2. The Biolux unit also generates Hydrogen infused gas.

a. Drinking Hydrogen infused water facilitates the immune system's scavenging of harmful ROS including hydroxyl and peroxinitrates while leaving the beneficial ROS.

b. Hydrogen is the most recently discovered antioxidant capable of increasing the immune system antioxidant, anti-inflammatory and anti-apoptotic capabilities. Meanwhile Hydrogen protects DNA and ensures cell survival and possible cellular damage or destruction by blocking hydroxyl radicals.

c. Hydrogen molecules as a powerful antioxidant rapidly penetrates biofilm and diffuses through cell membranes

d. The reduction effect from drinking Hydrogen water neutralizes excess free radicals formed as a result of body acidification, effectively suppresses the symptoms and improves physical fitness after acidification and restores health.

3. Hydrogen is the newest antioxidant with superior properties than any other known anti-oxidants with these features:

a. Hydrogen molecules are small and can quickly penetrate the biofilm and then diffuse through the cellular membrane into cytoplasm, mitochondria and nuclei.

b. The effective dose of hydrogen is not toxic nor is a large dose of Hydrogen harmful.

c. Hydrogen is a moderate antioxidant which does not interfere with the oxidation-reduction reaction of metabolism.

d. Hydrogen has better compatibility with tissues and organs compared to other antioxidants. Hydrogen is also easily degassed through the lungs.

Another layer of protection for occupants of the office is by utilizing the commonly known UV light in the central air handler before the HEPA filters. These UV lights act by the UV radiation creating Ozone gas in exposed microbes. Ozone is the mammals (our bodies included) natural defense against microbes. Microbes have no resistance to Ozone gas which immediately destroys the cell walls of exposed microbes (bacteria, viruses) making the HEPA filter more efficient in removing the particulates that pass through the UV radiation.

In addition to our central air handler UV lights and HEPA filters, the office environment is also super saturated for 24 hours on weekends with Ozone gas! Ozone technology is what hotels use to decontaminate a room when a smoker violates the rules and stinks up a room with second hand smoke. Ozone will destroy smoke, nicotine, pollutants and other organics out of the air and on the surfaces and is equally effective against microbes! Since long term exposure to high concentrations of Ozone gas will cause lung irritation, we have a "make air" system that will exhaust all the air in the office in less than seven minutes. If the employees are confronted with that heavy "rainstorm aftermath" fresh Ozone smell when arriving on Monday morning, they can flip the switch and change the air in the office immediately! The free standing HEPA filters are turned off when Ozone is being released and the central air handler is turned to the automatic setting to minimize destruction of the Ozone gas, maximizing exposure of office surfaces to Ozone.

This and more opinion articles are available on the [www.jtimrainey.com](http://www.jtimrainey.com) website. Dr. Rainey is known for his scientific research into tooth structure and has lectured worldwide on these topics. He can be

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