

# COOL, CLEAR WATER

## DENTAL WATER LINE TREATMENT

Anywhere water stands still, a biofilm will form. The slime on the bottom of the dog's water bowl is a biofilm. Dental plaque (the cause of periodontal disease) is a biofilm. Legionnaire's Disease bacteria reside and proliferate in biofilm inside air-conditioning units. In fact, a great many very nasty bacteria live in biofilms. Over 99% of the bacteria on the planet reside within biofilms. Try this experiment. Take a clean, clear drinking glass. Fill it with water (I don't care the source) and leave it sitting on the counter in your treatment area for two days. Now, pour the water out and look at the slime that is coating the inside of the glass. That is biofilm.

So, you have a dental scaler or an air-driven dental station and it is attached to your municipal water supply or some self-contained water system. Water travels through the narrow rubber tubing of the unit to the hand piece to flush and cool during operation. However, between patients, over night and on weekends, the water sits stagnant within these small-bore rubber tubes and biofilm forms. Not only can the biofilm occlude the tubes, reducing water flow, they can also be a significant source of pathogenic bacteria with the potential to harm patients and staff.

As part of your universal precautions against bacterial infection for you, your staff and your patients, you must have a dental waterline treatment protocol in place to keep your dental waterlines free of biofilm. I recently found a neat device that makes this very easy.

The dental station I use has two parallel fluid circuits, the idea being that one can contain distilled water and the other can contain a disinfectant solution if I wish. I choose to just use distilled water and so I only use one

of the fluid circuits. The first photo is of the empty fluid bottle for the circuit I do not use. Inside the bottle, you can see the plastic tube the fluid travels through when leaving the bottle.

In the second photo, the bottle has been removed to show the blue plastic tube better.



So, this bottle and this plastic tube are the beginning of the fluid circuit that ends at the patient's mouth. Everything in between is subject to biofilm accumulation and needs attention to prevent that from happening.



The photo above is of the beginning of the fluid circuit I do use. You will note that the fluid bottle is different.

The neat device I found to keep this circuit clean is the "Pure Tube BR360" from Sterisil ([www.sterisil.com](http://www.sterisil.com), 719-481-0937). It is shown in the photo to the right. This small cartridge took less than five minutes to install and lasts for approximately one year. It disinfects the water that passes through it by continuous release of silver ion. Research by the US Navy Dental Department (a surprisingly good source of information) found no ill effects to the equipment, the teeth or the patient when the Pure Tube is installed but there was a dramatic reduction in the bacteria count in the water leaving the dental handpieces.

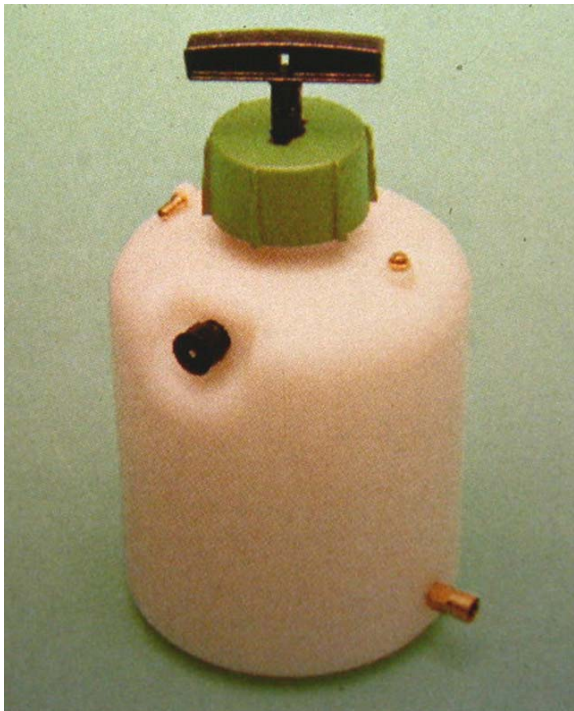
The Pure Tube BR 360 is intended to last about one year, but needs a bit of attention. Immediately after installation, a catalyst powder is placed in the water bottle and run through the tube to release a higher concentration of silver. This water is flushed through the lines for a few minutes as a shock treatment. This shock treatment is repeated every four months and the tube and bottle replaced annually. That's it!!! No draining and purging the lines. No mixing, flushing and rinsing disinfectants through the lines every day. Just install once a year and shock once every four months.



The only down-side to the Pure Tube™ system that I can see is that if you are connected to municipal water or a different kind of water supply (pump-up bottle as shown on the next page), the system will not work for you. If you have small water bottles that screw on to your unit as in my system, do you, your staff and your patients a big favor and order one of these simple devices.

Note – I paid full price for my Pure Tube™ and received no compensation for this recommendation.

Sterisil does have other systems available to use the silver ion technology for units connected to municipal water supplies.



If you have this kind of water reservoir for your dental scaler, the Pure Tube™ system will not work. You will have to drain, purge, dry and disinfect the system manually on a daily basis. This must be done. I have seen mold growing in these bottles – disgusting and unhealthy.