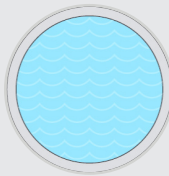


# The Biofilm Problem

## The Untreated Procedural Water in Your Dental Unit Waterlines Should Not Be Used on Patients

### Removal or Inactivation of DUWL Biofilms Requires Use of Chemical Germicides<sup>1</sup>

#### STAGES OF BIOFILM GROWTH IN UNTREATED WATERLINES



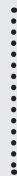
Uncontaminated Waterline



Biofilm Formation, Early Stage



Biofilm Maturation



Actual size: ●  
2mm

### The Challenge with Dental Unit Waterlines

#### Narrow Tubing = Microbial Colonization = Biofilm growth

Research shows that the extremely narrow design of waterline tubing promotes water stagnation and bacterial accumulation<sup>1</sup>

Using an in-line water heater? If your water exceeds 68° F, you're promoting even more microorganism growth<sup>1</sup>.

#### The Biofilm Problem

Biofilm is a complex matrix of bacteria, fungi and algae bound together in a sticky gel of polysaccharides that forms a microcolony. The microcolony attaches to a surface, such as the interior of dental unit waterline tubing.

Once colonies of microorganisms start surviving inside your waterlines, they begin to build a sticky matrix that creates visible biofilm, or "slime." This sticky, slimy substance protects the biofilm community, allowing for further multiplication of microorganisms. When left untreated, or improperly maintained, the water flowing through these contaminated DUWLs can potentially harm your patients, your staff and ultimately your practice's reputation.

#### Bacteria By the Numbers

Current EPA Potable Water Standard:  $\leq 500$  CFU/mL<sup>2</sup>

- Untreated waterlines can reach up to 1,000,000 CFU/mL<sup>1</sup>
- Microbial counts in newly installed dental waterlines can reach as high as 200,000 CFU/mL within 5 days<sup>3</sup>

Dental Unit Waterline Technical Support: [Watersupport@hu-friedy.com](mailto:Watersupport@hu-friedy.com)

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Actual biofilm images (enlarged to show detail)

<sup>1</sup>) CDC MMWR: Guidelines for Infection Control in Dental Health-Care Settings – 2003; <sup>2</sup>) <https://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants>;

<sup>3</sup>) 3 Barbeau J., Tanguay R., Faucher E., Avezard, C., Trudel L., Coˆte L. and Preˆvost A.P. 1996. Multiparametric Analysis of Waterline Contamination in Dental Units. Amer Soc for Microbiology, 62,11:3954–3959

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