Ensuring safety and trust in dental practices

The DentaPure Cartridge Solution

The hidden dangers in dental unit waterlines

In the dental profession, unseen threats can significantly impact patient safety, staff wellbeing and the overall reputation of a practice. One such hidden danger lurks in dental unit waterlines (DUWLs), where the narrow width, extensive length and consistently moist environment create a perfect breeding ground for microorganisms. These microorganisms form microbial organisms, which adhere to the walls of waterlines and pose a serious risk if not properly managed. Despite their invisibility, the consequences of microbial contamination are very real and demand immediate attention.

Microbial contamination risks

Water flowing through contaminated DUWLs can carry microbial fragments out through dental instruments like air/water syringes and high-speed handpieces, potentially exposing patients and staff to harmful bacteria. This exposure not only threatens health, but can also tarnish a practice's reputation. The Environmental Protection Agency (EPA) sets the standard for safe drinking water at ≤500 colony-forming units per milliliter (CFU/mL). However, adhering to this standard by merely using source water with <500 CFU/mL does not suffice if microbial contamination within the waterlines is not controlled.

The challenge of traditional methods

Chemical germicides are necessary to remove or inactivate microbial growth, but traditional methods such as shocking protocols and daily tablets can be both costly and time-consuming. These methods require diligent attention and can lead to issues like the build-up of tablet residues, which may block narrow passageways and necessitate frequent service technician visits. Thus, dental practices are faced with a pressing question: how can they effectively treat DUWLs to minimise microbial growth without incurring excessive costs and labor?

The DentaPure Cartridge solution

The DentaPure Cartridge offers a streamlined and effective solution to this problem. By simplifying the waterline treatment process to an annual routine, DentaPure eliminates the need for routine shocking protocols and continuous monitoring. Designed to be used with either Independent Water Bottles or Municipal Water Lines, the cartridge is free from harsh chemicals and silver, and won't interfere with dental materials and bonding[1]. It employs elemental iodine (I2) to control bacterial growth as water passes through, ensuring safety for up to 365 days. Remarkably, the DentaPure Cartridge is EPA registered to provide ≤10 CFU/mL, significantly below the safe drinking water standard of 500 CFU/mL. This recent change from the previous statement of ≤200 CFU/mL is a significant enhancement in ensuring water safety far beyond the regulatory requirements.

How DentaPure works: iodine facts

The DentaPure Cartridge contains iodinated resin beads. During a typical treatment, the resin beads release 2-6 ppm of elemental iodine (I2) into the water passing through the cartridge. The elemental iodine interacts with the bacteria in the water, controlling it effectively. Contrary to common misconceptions, iodine is not an allergen[2], it is a normal trace element present in the human body, essential to produce thyroid hormone and involved in normal metabolism. It is not the iodine that is the source of allergies, but rather a protein present in the specific food that is the source of the allergy[3]. Hence, the use of iodine in DentaPure is both safe and effective.

Installation and maintenance: ensuring safety and reliability

The DentaPure Cartridge simplifies the complex task of dental unit waterline maintenance, making it easier to ensure safe and reliable water quality. Before installing the DentaPure Cartridge, it is recommended to perform a shocking protocol to thoroughly clean the waterlines. This step should never be done through a functional or depleted cartridge; this is why it is performed only once. After installation and to ensure the performance of the DentaPure Cartridge, it is essential to follow a simple monitoring and maintenance routine, starting each day with a two-minute flush of every line to ensure that the iodine is evenly distributed and active. For practices using water bottles, it is recommended to empty the water nightly, dry the bottles upside down or return them to the manifold and follow the bottle manufacturer's cleaning protocol. Then, each morning, refill the bottles with potable water for starting a new day of patient care. For accurate tracking of water quantity run, dental offices can use the practical Water Usage Chart. By adhering to these best practices of installation and maintenance, dental practices can confidently protect their patients and staff from potential waterborne contaminants.

DentaPure™ Municipal Cartridge DPI365M

DentaPure™ Independent Water Bottle Cartridge DPI365B

Iodine testing approaching the end of cartridge life

As the cartridge nears the end of its life, utilising SenSafe Iodine Test Strips can help verify its performance. To maintain effectiveness, it is recommended to check the iodine level at 11 months or when approaching 240 liters of water usage. Ensuring the iodine output has not fallen below 0.5 ppm is crucial, particularly for busy practices. If the iodine parts per million (ppm) reads below 0.5, replacing the cartridge is necessary. If the ppm reads 0.5 or greater, continuing normal use for another week and then re-checking levels is advised. These regular checks are key to maintaining optimal water quality and ensuring patient safety.

SenSafe® Iodine Test Strip

Conclusion

The DentaPure Cartridge addresses a critical need in dental practice management by providing a safe, effective and simple method to control microbial contamination in DUWLs. Its ability to maintain water quality well below regulatory standards with just an annual installation makes it an invaluable tool for any dental practice committed to ensuring the highest standards of patient care and safety. By reducing the potential for human error and the burden of continuous maintenance, DentaPure revolutionises waterline treatment. Dental professionals can have confidence that their waterlines remain safe, protecting both their patients and their practice's reputation with minimal effort.

For more information about DentaPure Cartridge and the guidelines for installation, visit the dedicated page: hufriedygroup.eu/dental-unit-waterlines ■

References

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3. Huang S. Seafood and Iodine: An analysis of a medical myth. Allergy and Asthma Proc 2005;26:468-9.

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Dental Unit Waterline Management

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Replaces daily treatment
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I highly recommend this for maintaining clean water through DUWL's. DentaPure™ Cartridge, originally developed by NASA, uses Iodine to control harmful bacteria and is extremely cost effective compared to water treatment additives.

Pete Gibbons, Decontamination Specialist, www.deconpete.co.uk

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