

# DETECTION OF DNA FROM PERIODONTAL PATHOGENIC BACTERIA IN BIOFILM OBTAINED FROM WATERLINES IN DENTAL UNITS

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## SUMMARY

*Direct person-to-person transmission of periodontal bacteria through saliva has recently been widely reported and dental units have been demonstrated to retract saliva from patients under treatment and to release it into the mouths of subjects undergoing the next operation. In this study the presence of a group of periodontal pathogenic bacteria inside waterlines in dental units was investigated using polymerase chain reaction (PCR) based methods. Briefly, 18 dental units of three different manufacturers were studied. Dental units were divided into two groups according to their prevalent use in routine practice. The first group consisted of nine dental units characterized by the frequent use of high-speed dental hand-pieces directly inside the mouth and in contact with patients' saliva. The second group, as a control, consisted of nine dental units where high-speed dental hand-pieces were not in use. A one cm section of the waterline tubing connected to the high-speed hand-piece was removed from each dental unit to evaluate the presence of DNA of *Actinobacillus actinomycetemcomitans*, *Porphyromonas gingivalis*, *Prevotella intermedia*, *Bacteroides forsythus*, *Treponema denticola*. Two specimens were positive for *Prevotella intermedia* DNA. All the positive results were from samples obtained from dental units categorised in the first group. These findings clearly suggest that dental units have the potential to transmit periodontal pathogens. Manufacturers should be invited to design dental units that incorporate automated devices to disinfect DUWLs between patients with minimal effort by dental staff.*

**KEY WORDS:** dental unit, disinfection, periodontal pathogens, cross-infection, DNA, dental hand-piece

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