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## The clinical utilization of ozone ultrafine bubble water to get symbiosis

Periodontitis and peri-implantitis are chronic inflammatory diseases caused by microorganisms residing in sub-gingival biofilm. Elimination of pathogen-containing biofilms remains the primary goal of the treatment for these diseases. The topical use of a low-cost, broad-spectrum antiseptic agent with low potential for adverse reactions is preferable in treating periodontitis or peri-implantitis. Ozone (O<sub>3</sub>) is attracting attention as a possible alternative antiseptic in the dental field as well as food industries. The high stability of Ozone Ultrafine Bubble Water (OUFBW) allows for bottling and use as a disinfectant solution. In my presentation, the bactericidal activity biocompatibility against human oral cells of OUFBW will be introduced. The OUFBW possesses potent bactericidal activity against several kinds of bacteria such as periodontopathic and cariogenic bacteria and is not cytotoxic to cells of human oral tissues. The use of NBW3 as an adjunct to the therapy for periodontitis and peri-implantitis would be promising. Poly-microbial interactions with the host in both health and disease will be discussed. So far we have attempted to identify specific bacterial clonal types of periodontal diseases however, we have to learn more concerning their contribution to both oral health and disease. Recent studies suggested that host-associated poly-microbial communities are an integral part of us. Understanding the microbial community factors that support the associations with host tissue that contribute to periodontal health may also reveal how dis-biotic oral communities disrupt periodontal tissue functions. On the other hand, periodontitis has been implicated as a risk factor for various systemic diseases. Dysbiosis in oral cavity might cause systemic changes other than the destruction of periodontal tissue. We have to develop strategies to prevent the dysbiotic state for obtaining periodontal and systemic health.

### Biography

Shinichi Arakawa has graduated from Dental School, Tokyo Medical and Dental University in 1986. He has completed his PhD from Tokyo Medical and Dental University and Post-doctoral studies from University of Texas, Health Science Center at San Antonio and State University of New York at Buffalo. He is the Professor of Department of Lifetime Oral Health Care Science, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University.

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