

SDM Shout Out

Weekly News Updates for SDM Faculty, Staff and Students

SDM's Dr. Patricia Diaz Leads UB Microbiome Study: *Gum disease-causing bacteria borrow growth molecules from neighbors to thrive*



Patricia Diaz, DDS, PhD, Professor of Empire Innovation, Department of Oral Biology and director, UB Microbiome Center

The human body is filled with friendly bacteria. However, some of these microorganisms, such as *Veillonella parvula*, may be too nice. These peaceful bacteria engage in a one-sided relationship with pathogen *Porphyromonas gingivalis*, helping the germ multiply and cause gum disease, according to a new University at Buffalo-led study.

The research sought to understand how *P. gingivalis* colonizes the mouth. The pathogen is unable to produce its own growth molecules until it achieves a large population in the oral microbiome (the community of microorganisms that live on and inside the body).

The answer: It borrows growth molecules from *V. parvula*, a common yet harmless bacteria in the mouth whose growth is not population dependent.

In a healthy mouth, *P. gingivalis* makes up a miniscule amount of the bacteria in the oral microbiome and cannot replicate. But if dental plaque is allowed to grow unchecked due to poor oral hygiene, *V. parvula* will multiply and eventually produce enough growth molecules to also spur the reproduction of *P. gingivalis*.

More than 47% of adults 30 and older have some form of periodontitis (also known as gum disease), according to the Centers for Disease Control and Prevention. Understanding the relationship between *P. gingivalis* and *V. parvula* will help researchers create targeted therapies for periodontitis, says Patricia Diaz, DDS, PhD, lead investigator on the study and Professor of Empire Innovation in the Department of Oral Biology in the UB School of Dental Medicine.

"Having worked with *P. gingivalis* for nearly two decades, we knew it needed a large population size to grow, but the specific processes that drive this phenomenon were not completely understood," says Diaz, also director of the UB Microbiome Center. "Successfully targeting the accessory pathogen *V. parvula* should prevent *P. gingivalis* from expanding within the oral microbial community to pathogenic levels."

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Events

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[2021/06/11 What am I Missing? The Science of Occlusal Medicine](#)

Self Study Online

[\(Pub.\) 05/20/20 Little Mouths are a Big Deal](#)

[\(Pub.\) 05/27/20 Talk to Your Patients About TMD](#)

[\(Pub.\) 04/29/20 Silver Diamine Fluoride](#)

[\(Pub.\) 06/10/20 Prescribing Controlled Substances \(NYS Mandated\)](#)

[\(Pub.\) 06/17/2020 From Risk to Results: Perio Instrumentation](#)

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