
Transmission of a Periodontal Pathogen within Families. S. PARKER*, A.L. GRIFFEN, E.J. LEYS (The Ohio State University, Columbus, Ohio).

Bacteroides forsythus is one of a small number of bacterial species thought to be responsible for chronic periodontitis. In order to assess possible transmission of *B. forsythus* (*Bf*) within extended families, the colonization status of 564 individuals from 104 multigeneration families was determined. For each subject, a plaque sample was collected from the sulcus of every tooth and all sites were pooled for analysis. A PCR assay targeted to the ribosomal operon was used to detect *Bf*. It was detected in the oral cavities of 30% of the subjects overall but at different frequencies among the generations: 47% of grandparents, 38% of parents, and 5% of children were colonized ($P < 0.0001$ by chi-square analysis). The transmission of *Bf* within extended families was investigated by identifying bacterial clonal types by heteroduplex analysis of the DNA fragment generated by PCR. Two or more colonized members were found in 46 of the 103 families, and matching *Bf* strains were found in 22 (48%) of these families. Horizontal transmission between spouses was observed in 18% of the grandparents and 19% of the parents. Vertical transmission from parents was observed in 19% of adults, but transmission rates were very low in young children, 4%, suggesting that transmission occurs some time after early childhood. These data suggest that stable, vertical transmission of *Bf* from parents occurs as frequently as transmission between spouses. Although this evidence does not show transmission of disease, it does demonstrate intrafamilial transmission of a periopathogen. Based on this evidence it would be prudent for parents to maintain their own periodontal health to protect that of their children, and for adults to consider the periodontal health of intimate contacts.