

## Surveillance Spotlight...

### Current Concepts in Oral–Systemic Health

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The International Centre for Oral–Systemic Health is based at the University of Manitoba’s faculty of dentistry. Its core mission was developed around interprofessional education, research and practice models where oral health is a critical component of comprehensive patient care.

As part of the educational component of its mission, the centre will provide a valuable service to stakeholders in the dental community by scanning the latest research and writings as well as best practices in oral–systemic medicine. The centre is proud to partner with the *JCDA* to provide summaries of contemporary literature and news in oral–systemic health that may affect modern dental practice.

### Relationship Between Obesity and Periodontal Disease: Increasing Evidence

Obesity is the fastest growing health-related problem in the world.<sup>1</sup> A common metabolic and nutritional disorder, obesity is a complex multifactorial chronic disease that develops from an interaction of genotype and the environment.<sup>2</sup> Overweight and obese adults have long been considered to be at high risk for many chronic inflammatory diseases and conditions such as cardiovascular disease, diabetes and arthritis.<sup>3</sup> It has been suggested that obesity contributes to an overall systemic inflammatory state through its effect on metabolic and immune parameters, thereby increasing susceptibility to periodontal disease.<sup>4,5</sup>

In recent years, the evidence linking obesity to increased incidence and severity of periodontal disease has grown.<sup>6–12</sup> In general, data indicate that increased body mass index, waist circumference (abdominal obesity), serum lipid levels and percentage of subcutaneous body fat are associated with increased risk for periodontitis. After adjusting for confounding factors such as smoking, age and systemic conditions, the risk association appears to be linear. For instance, more bleeding on probing, deeper periodontal pockets and more bone loss were noticed in individuals with higher indicators of obesity.<sup>9</sup> The most recent study<sup>12</sup> provides what is perhaps the most compelling evidence to date for a significant association between obesity and increased prevalence, severity and extent of periodontal disease. In this study, overweight individuals had double the incidence of periodontitis while obese individuals had triple the incidence of periodontitis, thus demonstrating, for the first time, a dose–response relationship.

The underlying biological mechanisms for the association of obesity and periodontitis most likely involve adipose tissue-derived cytokines and hormones. Fat tissue produces a vast amount of cytokines and hormones, collectively called adipokines, which may modulate periodontitis.<sup>4,5</sup> Obesity increases the host’s susceptibility by modulating the immune and inflammatory systems in a manner that predisposes to inflammatory tissue destruction and leaves an individual at greater risk of periodontitis.<sup>7</sup> Additionally, increased amounts of adipokines from visceral fat may induce agglutination of blood in the microvasculature, decreasing blood flow to the gingiva in obese people and facilitating the progression of periodontitis.

Despite the accumulating evidence for significant associations, it is still unclear whether obesity truly precedes periodontitis. Prospective cohort studies will be needed to address this issue. This association could be, at least in part, due to common lifestyle characteristics that make subjects more prone to both obesity and periodontal disease. However,

maintaining a normal body weight, eating a well-balanced diet and engaging in physical activity have been shown to reduce the severity of periodontitis.<sup>8,10</sup> Thus, all health professionals, including the dental team, can provide an important service to patients with obesity by educating them about the risk of periodontal disease and the importance of proper oral hygiene. ♦

## References

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