Traditionally, dentists have been taught that both dental caries and periodontal disease develop and progress as a direct result of patients’ over-frequent consumption of refined sugars and patients’ failure to remove bacterial plaque effectively. Miller’s acidogenic theory of caries development and the non-specific plaque hypothesis based on Lees’ work in the 1960s allow dentists to present a simple cause-and-effect explanation to patients.

Since then, the dental profession has blamed patients’ poor oral hygiene for periodontal breakdown and dental caries while often failing to diagnose and treat other contributing causative factors. Unfortu-
nately, while plaque is generally a necessary ingredient of common dental diseases, the explanation contained in these theories of its pivotal role is simplistic given current knowledge. This brief article will attempt to put the more significant risk factors in context.

Plaque
Gingivitis is a naturally bodily response to bacterial accumulation and as such is non-specific. Effective plaque removal will generally reverse gingivitis. The concept of inevitable progression from gingivitis to destructive periodontitis if oral hygiene is not good is, however, flawed. Figure 1 shows a 46-year-old patient with non-existent oral hygiene over several years. Figure 2 shows the same patient one month later after around 90 minutes of scaling and polishing by a student dental hygienist. He had no active caries and no more than ten per cent bone loss.

It has become increasingly evident that while some patients are “susceptible” to periodontal breakdown, others are more “resistant”. Common among these host-based factors leading to greater breakdown are the presence of diabetes and a smoking habit.

Three times higher in diabetics with severe periodontitis than in diabetics without severe periodontitis.1 Laved et al. showed that scaling and root planing in prediabetics reduced glycated haemoglobin (HbA1c) by 1 per cent at three months,2 and reductions in HbA1c of 0.5 to 1 per cent have been confirmed in several other studies in both Type 1 and Type 2 diabetics. There are estimated to be 735,940 diabetics in the United Arab Emirates. In 304,000 of those cases, the condition has not been diagnosed, and 194,000 people have impaired glucose tolerance, a prediabetic state of hyperglycaemia, or elevated levels of blood sugar.

In the UK Prospective Diabetes Study, it was shown that Type 2 diabetics who reduce their HbA1c level by 1 per cent are 19 per cent less likely to suffer caries, 16 per cent less likely to suffer tooth loss and 34 per cent less likely to suffer amputation or death due to peripheral vascular disease.

Clearly, not only will control of diabetes facilitate management of periodontitis, but also, probably more importantly, effective management of periodontitis is likely to have major beneficial effects on the serious sequelae of diabetes. Unfortunately, the medical profession is largely ignorant of the potential benefits of establishing and maintaining periodontal health.

The publication Type 1 Diabetes in Adults: National Clinical Guide-line for Diagnosis and Manage-ment in Primary and Secondary Care (updated in July 2014) was compiled by a consensus reference group made up of 50 members - these included physicians, endocrinologists, nurses, ophthalmologists, dieticians, podiatrists and lay people, but no dentists. Its 153 pages make no mention of dentistry or periodontal disease. The National Institute for Health and Care Excellence document on Type 2 diabetes, also updated in 2014, too fails to mention dentistry or periodontal disease.

Smoking
We have known for over 20 years that smoking increases the risk of periodontal breakdown. Odds ratios for developing periodontal disease as a result of smoking constitute a range: 2.3-3.97 for current smokers and 1.68 for former smokers,3-5 and 2.53 for light smokers to 7.38 for heavy smokers. A smoker is 745,940 diabetics in the United Arab Emirates. In 304,000 of those cases, the condition has not been diagnosed, and 194,000 people have impaired glucose tolerance, a prediabetic state of hyperglycaemia, or elevated levels of blood sugar.

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