OBESITY – PERIODONTAL DISEASE

The role of adipokines in periodontal infection and healing
Deschner J, Eick S et al. Mo/Oral/Microbiol 2014; 29: 258–269

Adipokines are secreted by adipose tissue and maybe the link between periodontal disease (and obesity-related systemic diseases) and obesity. Visfatin, leptin and adiponectin are examples of adipokines (adipose-derived hormones). Visfatin and leptin promote the inflammatory process, whereas adiponectin downregulates inflammation. Adipokines also influence insulin sensitivity and energy expenditure. There are increased levels of visfatin and leptin in the plasma of those who are obese. Adipokines are also produced by periodontal tissues. In those with periodontal disease, there are increased amounts of visfatin, although reduced levels of leptin, in the gingival crevicular fluid.

Then there is a complex bi-directional relationship between adipokines and periodontopathic bacteria. Porphyromonas gingivalis enhances the synthesis of visfatin, and Fusobacterium nucleatum increases visfatin expression in periodontal ligament cells. In addition, these bacteria downregulate adiponectin. Adiponectin counteracts the stimulatory effects of P. gingivalis on a range of different interleukins and matrix metalloproteinase involved in the breakdown of extracellular matrix.

It is stated that obesity compromises periodontal treatment outcomes. For example, the authors report adipokines influence the regenerative effects of enamel matrix derivative, but then adipokines are linked with unfavourable ‘biomechanical forces’. Treatment of periodontal disease causes a decrease in plasma leptin. The putative role of resistin in periodontal disease was also discussed briefly.

DOI: 10.1038/sj.bdj.2015.120

OBESITY – PERIODONTAL TREATMENT

Overweight Evidence: Will dental professionals need to calculate BMI impact on perio risks?
McCauley S. RDH Magazine 2014; December 18

As part of periodontal treatment, should dental professionals counsel obese patients to lose weight?

Increasingly the height and weight of dental patients are ascertained when taking the medical history. However, it seems that dentists, more so than patients, have some reticence integrating medical health into a dental setting when considering screening for medical reasons, see J Public Health Dent 2012; 72: 28–35. In this RDH Magazine article, risk factors for periodontal disease such as smoking and obesity are re-visited. It is argued that these can be modiﬁed. It is stated also that patients who are obese have sub-optimal periodontal treatment outcomes. Much of the contents of this paper is Level of Evidence 5 (CEBM).

DOI: 10.1038/sj.bdj.2015.121

LACK OF EXERCISE – MORTALITY

Physical activity and all-cause mortality across levels of overall and abdominal adiposity in European men and women: the European Prospective Investigation into Cancer and Nutrition Study (EPIC)
Ekelund U, Ward HA et al. Am J Clin Nutr 2015; DOI: 10.3945/ajcn.114.100065.

‘...even small increases in activity in inactive individuals may be beneficial to public health.’

This study followed, over a 12-year period, 334,161 men and women across Europe participating in the EPIC Study. Among other measurements, obesity and self-assessment for exercise were recorded. Just under a quarter of participants were categorised as inactive, with a sedentary occupation and no physical activity. During this time over 21,000 of the participants died. Cox proportional hazards models, adjusted for sex, education, smoking and alcohol intake, showed that expending between 90 and 110 kcal each day (equivalent to a 20 minute brisk walk) reduced the risk of premature death of up to 30%. This effect was greatest among normal weight individuals. Early death associated with physical inactivity was independent of BMI and waist circumference. There was considerable heterogeneity across the study centres. For example, when considering obesity only, there was no increased risk of premature death in French women who were obese.

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INCENTIVISING OR BRIBERY?

Financial incentives for smoking cessation in pregnancy: randomised controlled trial
Tappin D, Bauld L et al. BMJ 2015; 350: h134, DOI: 10.1136/bmj.h134

Pregnant mothers who received store vouchers (Love2Shop) in addition to routine stop smoking pregnancy advice, were more likely to quit smoking compared with those who were given routine advice only.

As background, it was reported in 2009 that 24% of pregnant women in Scotland are smokers. If causality is accepted, there is a 20% increased risk of miscarriage in those who smoke. This randomised control study recruited 612 pregnant women living in the Glasgow area (65% SIMD 1st – most deprived). Immediately after the interventions, 22.5% in the incentivised group compared with 8.6% in the control group had stopped smoking. The incentivised group received £50 worth of vouchers at their first appointment, if it was shown they had stopped smoking at a second appointment then £50 of vouchers, a further £100 of vouchers after another 12 weeks, and a final £200 worth of vouchers at 34-38 weeks pregnancy. Exhaled carbon monoxide confirmed quitting. The investigator found ‘some evidence of women being untruthful about their smoking status’ (gaming).

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