

Other journals in brief

A selection of abstracts of clinically relevant papers from other journals.
The abstracts on this page have been chosen and edited by Paul Hellyer.

Dental caries and the oral microbiome

Kahharova D, Pappalardo V Y, Buijs MJ *et al.* Microbial Indicators of Dental Health, Dysbiosis, and Early Childhood Caries. *J Dent Res* 2023; DOI: 10.1177/00220345231160756.

Changes 3 years pre-clinical diagnosis may highlight those at risk.

The oral microbiome responds to different challenges throughout life. When it becomes unbalanced (dysbiotic) demineralisation of tooth structure can occur. Dysbiosis occurs before any clinical signs of dental caries are evident.

In this longitudinal study, saliva and plaque samples were taken from 266 children at ages 1 year, 2.5 years and 4 years. Clinical examination by calibrated examiners was undertaken on 189 children at 6.5 years. Results showed that dysbiosis is observed 1–3 years before the clinical detection of carious lesions and is associated with anaerobic and proteolytic taxa such as *Prevotella* and *Leptotrichia*. A carbohydrate-rich oral environment, possibly associated with poor oral hygiene, promotes a shift to diverse bacterial communities. This differs from the hypothesis in which dysbiosis occurs at a late stage of caries development with higher concentrations of aciduric bacteria leading to a less diverse microbiome. Other risk factors may affect the microbiome over time, such as antibiotics, demographics and Medicaid status.

<https://doi.org/10.1038/s41415-023-5847-0>

Dental caries and hospital admissions

Aminian P, Kruger E, Tennant M. Hospitalisations due to pulp and periapical conditions in Australian children from 1998–99 to 2017–18. *Community Dent Health* 2023; **40**: 42–46.

Referrals still increasing in Australia.

Hospitalisation for treatment of dental pulpal and periapical diseases (P&PDs) are expensive, carry risks of side effects but are potentially preventable. Using countrywide, open access data, the authors assessed the time trends and demographic data in hospitalisations for P&PDs amongst children and adolescents over 20 years.

The percentage of children admitted increased from 3.8% (28.8 per 100,000) to 6.8% (44.1 per 100,000) between 1998/99 and 2017/18. The highest percentage was in age group 5–9 years, possibly due to failings in care of first permanent molars. Despite the introduction of funded access to basic dental services for eligible children in 2014, rates of hospitalisations have continued to increase.

The causes of these year-on-year increases may be the consequence of inadequate primary care services or inappropriate use of the hospital system. The authors recognise the multi-factorial nature of dental disease and that behavioural and communication issues may be relevant to some referrals. To reverse the trend, they stress the need for health promotion in primary care for those at high risk of caries.

<https://doi.org/10.1038/s41415-023-5861-2>

Dental caries and BMI

Schluter P J, Hobbs M, Ahuriri-Driscoll A, Kokaua J, Singh S, Lee M. The pattern of association between early childhood caries and body mass index in pre-school children within Aotearoa | New Zealand: a national cross-sectional study. *Community Dent Oral Epidemiol* 2023; DOI: 10.1111/cdoe.12837.

Other factors confound any relationship between the two.

Childhood obesity and dental caries share common risk factors and are largely preventable. In Aotearoa New Zealand, all children at 4–5 years undergo pre-school health checks, carried out by trained nurses in a community setting. Dental caries was recorded and BMI calculated (height/weight²). Data from checks undergone between 2010/11 and 2020/21 were used in this study.

Of the 582,820 eligible children, 5.7% were classified as overweight, 1.2% as obese and 14.2% recorded as having experience of dental caries. A significant association was found between BMI and caries experience. However, this was largely overshadowed by the effects of other factors such as sex, ethnicity and deprivation inequalities. The patterns observed in this study 'are likely predominantly, if not entirely, due to commercial and social determinants of health inequalities.'

<https://doi.org/10.1038/s41415-023-5860-3>

Dental practice and society

Homa F, Jacqueline R, Christophe B. Moving towards social dentistry: How do dentists perceive the Montreal-Toulouse model? *Community Dent Oral Epidemiol* 2023; DOI: 10.1111/cdoe.12859.

Practitioners rarely see beyond their individual patients.

The Montreal-Toulouse model encourages dentists to look wider than the specific biomedical aetiologies of oral disease. It encourages dentists to take three types of actions – understanding, decision making, intervening – at three different levels – individual, community, societal. The individual level sets out to understand patients' expectations, the social determinants of their oral health and to jointly formulate treatment goals. At a community level, dentists are encouraged to learn about local demographics and co-partner with other medical providers. Societal level includes understanding the political and economic structures which impact oral health and advocating for change.

In interviewing 14 dentists with experience of teaching and general practice to understand their reaction to the model, the authors found that while person-centred care was central to the interviewees' practice, interest in the model declined as community and societal concepts were introduced. 'Business concerns are always at the forefront of dentists' thoughts.' The authors suggest oral health care provision should move from a market-based system to one which is socially orientated.

<https://doi.org/10.1038/s41415-023-5862-1>