



2010-2011 Research Synopses

Public Health and Healthy Ageing

The **Public Health and Healthy Ageing Research Group** of the HKU Faculty of Dentistry is committed to protecting and improving oral health for all people by performing and synthesising clinical, community-level, and educational research, and by applying public health sciences. Below is a selection of summaries of research findings published by the Public Health and Healthy Ageing Research Group, with online links to abstracts or full papers in *Medline*.

Prof Colman McGrath, mcgrathc@hku.hk, is the convenor of the Public Health and Healthy Ageing Research Group at the HKU Faculty of Dentistry. A list of the group's members can be found at: http://www.dental.hku.hk/discovery/group_publichealth.html

Wong MC, Clarkson J, Glennly AM, Lo EC, Marinho VC, Tsang BW, Walsh T, Worthington HV.

Cochrane reviews on the benefits/risks of fluoride toothpastes.

J Dent Res 2011;90:573-9. <http://www.ncbi.nlm.nih.gov/pubmed/21248357>

■ Two Cochrane Reviews concluded that (1) the use of toothpastes with a fluoride concentration of 1000 ppm or higher has a significant benefit over use of a placebo in preventing tooth decay in children and adolescents; and (2) the evidence that starting the use of fluoridated toothpastes at ages younger than 1 year may be linked to an increased risk of fluorosis is “weak” and “unreliable”. The authors recommend that dentists help care-givers weigh the benefit of preventing tooth decay against the risk of developing mild fluorosis when selecting fluoridated toothpastes for use in children younger than 6 years.

Lang NP, Salvi GE, Huynh-Ba G, Ivanovski S, Donos N, Bosshardt DD.

Early osseointegration to hydrophilic and hydrophobic implant surfaces in humans.

Clin Oral Implants Res 2011;22:349-56. <http://www.ncbi.nlm.nih.gov/pubmed/21561476>

■ In this first human study on bone healing around inserted metal dental implants, rough-surfaced titanium cylinders (2.8 mm wide and 4 mm long) were screwed into jawbones of healthy volunteers and then removed after different periods. About half of the 49 implants had been chemically pretreated so the surface was hydrophilic (water-attracting), while the other half remained hydrophobic (water-repelling). The hydrophilic implants initially showed faster coverage by new bone, up to day 28, but both implant types were covered by the same amount of new bone by day 42.

Leung WK, Chu CH, Mok MY, Yeung KW, Ng SK.

Periodontal status of adults with systemic sclerosis: case-control study.

J Periodontol 2011;82:1140-5. <http://www.ncbi.nlm.nih.gov/pubmed/21815717>

■ Compared with age- and sex-matched healthy dental patients, 36 patients with systemic sclerosis (an autoimmune disease affecting connective tissue) had greater amounts of gum inflammation. Mouth X-ray images also showed wider periodontal ligament spaces (where ligaments attach roots of teeth to bone) for these patients.

Lu HX, Wong MC, Lo EC, McGrath C.

Trends in oral health from childhood to early adulthood: a life course approach.

Community Dent Oral Epidemiol 2011;39:352-60. <http://www.ncbi.nlm.nih.gov/pubmed/21362012>

■ Repeated dental assessments of 221 Hong Kong students at ages 12 years (late childhood), 15 years (adolescence), and 18 years (early adulthood) revealed that oral health gradually worsened with age. Oral health status and use of dental services in childhood predicted those in adulthood, and reduced use of dental services was associated with reduced monthly household income.

Gao XL, McGrath C, Lin HC.

Oral health status of rural-urban migrant children in South China.

Int J Paediatr Dent 2011;21:58-67. <http://www.ncbi.nlm.nih.gov/pubmed/20731736>

■ According to oral health assessments of 138 five-year-olds attending a school for rural-to-urban migrants in Guangzhou, about 86% of children showed signs of tooth decay and each had about 5 affected teeth. Nearly all of the children had poor oral hygiene, and sizeable proportions had poor oral health habits and lowered quality of life. The findings indicate “an urgent need” for strengthened community- and school-based oral health programmes, as well as “migrant-sensitive” clinical practice, the authors conclude.

Du RY, McGrath C, Yiu CKY, King NM.

Oral health in preschool children with cerebral palsy: a case-control community-based study.

Int J Paediatr Dent 2010;20:330-5. <http://www.ncbi.nlm.nih.gov/pubmed/20642472>

■ Clinical examinations were performed on 72 Hong Kong preschool children with cerebral palsy and 72 without, matched by age and sex. Although both groups had similar occurrences of tooth decay, surface (enamel) defects, and tooth injury, the children with cerebral palsy had more dental plaque, signs of gum disease, tooth wear, and mouth sores, as well as more cases of a front gap between upper and lower teeth during biting (anterior open bite) and more cases of buck teeth (overjet).

Bridges SM, Botelho MG, Tsang PC.

PBL.2.0: blended learning for an interactive, problem-based pedagogy.

Med Educ 2010;44:1131. <http://www.ncbi.nlm.nih.gov/pubmed/20946496>

■ The integration of interactive (touch-screen) whiteboards into small-group problem-based learning tutorials involving face-to-face contact between dental undergraduates and a facilitator led to enhanced engagement and knowledge construction within the group.

Tan HP, Lo EC, Dyson JE, Luo Y, Corbet EF.

A randomized trial on root caries prevention in elders.

J Dent Res 2010;89:1086-90. <http://www.ncbi.nlm.nih.gov/pubmed/20671206>

■ In this clinical trial, researchers studied the prevention of new cases of root decay in institutionalised elders after they received personalised oral hygiene instructions. The effectiveness of this approach was increased by adding one of three treatments over 3 years—namely, applications of (1) 1% chlorhexidine varnish every 3 months; (2) 5% sodium fluoride varnish every 3 months; and (3) 38% silver diamine fluoride solution annually.

Burkhardt R, Lang NP.

Role of flap tension in primary wound closure of mucoperiosteal flaps: a prospective cohort study.

Clin Oral Impl Res 2010;21:50-4. <http://www.ncbi.nlm.nih.gov/pubmed/20070747>

■ When wound healing was examined during two-step, single-tooth implantation in 60 patients, healing at 1 week was found to be related to the tension applied to the wound flaps at the time of suturing. Failure (dehiscence) was more likely at higher flap tensions and for thinner flaps. Healing after the first stage of implantation may be helped if wound flaps are sewn together while applying low tension, the authors suggest.

Leung KC, McGrath CP.

Willingness to pay for implant therapy: a study of patient preference.

Clin Oral Impl Res 2010;21:789-93. <http://www.ncbi.nlm.nih.gov/pubmed/20384702>

■ These researchers asked 16 men and 35 women attending a primary care clinic how they would deal with a missing tooth, showing them photographs and diagrams of treatment using dental implants or fixed or removable partial dentures. Most patients preferred implant treatment, but they were willing to pay only half the typical implant fee. Patients who actually had missing teeth nominated lower prices, whereas the more educated and women nominated higher prices.

Gao XL, Hsu CY, Xu Y, Hwang HB, Loh T, Koh D.

Building caries risk assessment models for children.

J Dent Res 2010;89:637-43. <http://www.ncbi.nlm.nih.gov/pubmed/20400721>

■ Several newly devised assessment methods were shown to be useful in estimating the likelihood that kindergarten children develop tooth decay in 1

year. The assessment tools might be valuable in the prevention of childhood tooth decay or in treatment planning. One method, consisting of just a questionnaire of six questions, could be particularly useful and cost-effective in non-clinic settings for identifying children who are most prone to developing tooth decay.

McMillan AS, Wong MC, Zheng J, Luo Y, Lam CL.

Widespread pain symptoms and psychological distress in southern Chinese with orofacial pain.

J Oral Rehabil 2010;37:2-10. <http://www.ncbi.nlm.nih.gov/pubmed/19919620>

■ Among 400 adult patients at a medical clinic, the 200 who had recently felt pain in the mouth or elsewhere in the face were more likely to feel depressed than the 200 who had not. The likelihood of depression was increased if patients with facial pain reported having pain elsewhere in the body too. The group with facial pain was also more likely than the comparison group to have moderate to severe “non-specific physical symptoms” such as tiredness or general muscle ache.

Choi WS, Lee S, McGrath C, Samman N.

Change in quality of life after combined orthodontic-surgical treatment of dentofacial deformities.

Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2010;109:46-51.

<http://www.ncbi.nlm.nih.gov/pubmed/20123378>

■ Treatment of facial deformity by jaw-alignment surgery followed 6 months later by orthodontic therapy (tooth-straightening via braces) for at least 6 months significantly increased people’s quality of life. According to averaged scores from questionnaires completed before and after treatment, the 32 patients in the study demonstrated marked improvements in quality of life related to their mental health, oral health, and appearance. The results were similar for both men and women, and for all types of condition being treated.