

Oral Health Research Review

Making Education Easy

Issue 7 - 2010

In this issue:

- *Dental fear in French children*
- *Mechanical tongue cleaning and breath odour*
- *Bitewing x-rays for approximal caries detection in children*
- *Unsweetened ice popsicles after local anaesthesia*
- *Primary tooth injuries: prevalence and outcomes*
- *Mouthwash use in the general population*
- *Periodontal disease and osteoporosis*
- *Primary tooth emergence in Australian children*
- *Xerostomia: an update for clinicians*
- *Oral malodour and menstruation*



Oral Health Research Review is also made available to Dental Hygienists through the kind support of the New Zealand Dental Hygienists' Association

Welcome to the seventh issue of Oral Health Research Review.

Breath odour features in two selections in this issue: a review showing that mechanical tongue cleaning appears to provide a benefit for helping to combat oral malodour; and a study showing an increase in oral volatile sulphur compounds, in addition to other oral health clinical parameters, in women during the ovulation phase of their menstrual cycle. Unsweetened ice popsicles may be just what we need to stop children biting anaesthetised soft tissues. We have also included a revealing look at mouthwash use in the general population, which includes the finding that over a third of a Scottish study population had never used mouthwash.

We hope you find plenty in this issue to interest you, and we look forward to receiving your comments and feedback.

Kind regards,

Jonathan Leichter D.M.D

jonathanleichter@researchreview.co.nz

Factors affecting dental fear in French children aged 5–12 years

Authors: Nicolas E et al

Summary: This 7-month study involved 1303 children with an average age of 8.12 years. It consisted of structured interviews, using a dental anxiety visual analogue scale (DF-VAS), and examinations to assess oral hygiene, decay on permanent teeth and previous dental care. DF-VAS scores were 0–3 (low), 4–6 (moderate) and 7–10 (high) in 75.7%, 16.7% and 7.6% of children, respectively. It was also found that dental anxiety was higher in girls, very young children and children with poor oral health; fear was greater in those with at least one decayed tooth than in those with no decay, while those with fillings were less anxious than those without previous dental care.

Comment (JL): Dental anxiety often originates in childhood (51%) or adolescence (22%), and correlates with fear of pain, previous negative experiences or modelling by parents. A vicious circle is often created with missed appointments, avoidance of care and behavioural problems, all of which result in an increased caries prevalence. This paper highlights the importance of the first visit being as early as possible and unrelated to pain, caries or trauma. Children who have visits without invasive care develop less anxiety. In addition, oral health education projects and regular follow-up visits decrease levels of anxiety.

Comment (RB): The consensus from the general population is that going to visit a dental professional is one of their least favourite things to do. What caused these negative perceptions? This paper investigates the concept of dental fear in a cohort of French children. The authors identified dental fear as often originating in childhood; therefore, it is important to consider the ideology around dental phobia for children. It is these early experiences that shape the child's future perceptions and ability to cope in the dental setting. This study concludes that 'prior experiences in the dental setting can help toward reduction of dental fear', suggesting an early initial visit is constructed as a preventive measure to reduce dental anxiety. The authors suggested a psychological approach to dental appointments, acknowledging children's psychosocial needs, to enable them to adapt to the dental environment and acquire coping skills for the clinical situation.

Reference: *Int J Paediatr Dent* 2010;20(5):366–73

<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-263X.2010.01054.x/abstract>

PLAQUE BIOFILM REMOVAL IS REQUIRED

FROM HARD SURFACES

Regular mechanical cleaning provides "focused" or "targeted" energy to dislodge and remove the plaque biofilm from non-shedding hard surfaces.



AND SOFT TISSUE

75% of the oral cavity is composed of soft tissue. Bacteria on these surfaces can quickly recolonise other dental surfaces.



Click here to read more clinical information on the adjunctive benefit of an essential oil-containing mouthrinse in reducing plaque and gingivitis in patients who brush and floss regularly.

LISTERINE® REACH

Johnson & Johnson (New Zealand) Ltd, Auckland.
DA99MT NZ6175/10

As an adjunct to brushing and flossing, Listerine antiseptic Mouthwash penetrates and kills plaque biofilm
Medicines have benefits and some may have risks. Always read the label and use only as directed. Listerine® Coolmint contains: Benzoic acid 0.12% w/v, Cineole (Eucalyptol) 0.0922% w/v, Ethanol 27.0% w/v, Thymol 0.064% w/v.

Effectiveness of mechanical tongue cleaning on breath odour and tongue coating

Authors: Van de Sleen MI et al

Summary: This systematic review selected five articles, three RCTs and two controlled clinical trials, comprising healthy individuals aged 17 years or older. It revealed consistently beneficial effects on breath odour for tongue scraping or tongue brushing versus brushing only. The authors noted that there are insufficient data regarding the effects of mechanical tongue cleaning on chronic oral malodour (halitosis).

Comment (JL): Halitosis, or oral malodour, is a relatively common problem with a reported prevalence as high as 50%. It has been found that 80–90% of all bad breath odours originate in the mouth itself, with the degradation of substances on the tongue releasing unpleasant volatile sulphur compounds. Halitosis is kept in the public consciousness by the overabundance of advertisements for mouthwashes and breath mints that promise to solve the embarrassing problem and restore interpersonal social communications and relationships. This systematic review looked at five publications, all of which showed that mechanical tongue cleaning provides an effective adjunct to toothbrushing with regards to reducing breath odour and tongue coating. Introducing daily tongue cleaning with either a brush or a scraper into the oral hygiene regimen is an effective supplementary intervention for those patients with coated tongues. As the bacterial mass is situated at the posterior dorsum of the tongue, this often neglected area must be given adequate attention.

Comment (RB): This systematic review investigated mechanical tongue cleaning as an addition to brushing and flossing to reduce oral malodour and tongue coating, as opposed to no mechanical tongue cleaning. Oral malodour is a common occurrence with multiple causal factors; one such factor is the tongue. The tongue carries the largest bacterial load of the oral tissues, predominantly on the dorsum. This review also described the different causes of oral malodour associated with the tongue and the clinical tests that could aid in identifying the location as well as the severity of malodour. The authors concluded that scraping and cleaning the dorsum of the tongue has the potential to successfully reduce oral malodour. However, there is insufficient evidence to make a strong correlation between addition of tongue scraping to oral hygiene activity and a significant reduction in oral malodour.

Reference: *Int J Dent Hyg* 2010;8(4):258–68

<http://onlinelibrary.wiley.com/doi/10.1111/j.1601-5037.2010.00479.x/abstract>

Value of bitewing radiographs for detecting approximal caries in 6-year-old children in the Netherlands

Authors: Poorterman JHG et al

Summary: The aim of this study was to determine the additional diagnostic value of bitewing radiographs in 6-year-old children. Clinical examinations were carried out in 50 children, and the findings were compared with bitewing radiographs taken on the same day. Half of the carious lesions into dentine were discovered by radiographs only and not detected clinically. With regards to restorations, the additional value of radiographs was 600%. In addition, there was a strong correlation between DMFS and the amount of plaque identified.

Comment (JL): It is always essential that the diagnostic value of taking a radiograph offsets the patient's exposure to radiation. Although taking bitewing radiographs in young children can be challenging, this study confirms that clinical examination alone considerably underestimates the prevalence of approximal caries. It also highlights that apparently sound restorations that appear clinically adequate may in fact be radiographically inadequate. It is always good to have one's practices affirmed, and helpful to have an evidence-based reason when justifying treatment decisions to parents and caregivers. This article does both.

Comment (RB): The authors of this study looked at the diagnostic value of bitewing radiographs in 50 children aged 6 years. It is known that about half of all approximal lesions are overlooked during clinical examination; this paper reported that 'about 50% of approximal dentinal lesions and 86% of inadequate restorations' were undetected clinically. This concurs with other studies on bitewing radiographs in older children. In deciduous teeth, undetected early lesions can be detrimental if left until the next recall. Radiographically detecting early lesions enables the possibility of slowing progression and/or remineralising the enamel with an appropriate preventive product. A small proportion of participants were unable to have radiographs taken due to anxiety, gag reflex or an inability to keep the holder between their teeth; the authors suggest FOTI as an additional diagnostic tool. This paper provides further confirmation that radiographs are still best practice for identifying approximal lesions.

Reference: *Int J Paediatr Dent* 2010;20(5):336–40

<http://onlinelibrary.wiley.com/doi/10.1111/j.1365-263X.2010.01058.x/abstract>

Unsweetened ice popsicles impart a positive feeling and reduce self-mutilation after paediatric dental treatment with local anaesthesia

Authors: Ram D et al

Summary: Thirty-one children participated in this study, in which 2% lidocaine 1:100 000 was used as the local anaesthetic (LA) and administered as usual; treatments carried out were fillings, pulpotomies, crowns and extractions. The study spanned two appointments. At the first, half of the children received a popsicle, the others received a toy. Each child received the other 'prize' at the second appointment. The ice-popsicles were especially made of filtered boiled water and a red food dye, and looked like a regular ice-popsicle with a wooden stick. Compared with receiving a toy, it was found that the ice significantly reduced discomfort after treatment, the children felt better and the incidence of self-mutilation was reduced.

Comment (JL): Children are particularly susceptible to biting their anaesthetised soft tissues after dental treatment and they can cause themselves considerable damage. Application of cold reduces pain by decreasing neural transmission, decreasing muscle fibre contraction and providing continuous stimuli. The purpose of this study was to assess whether an unsweetened ice popsicle would impart a positive feeling to children and reduce the tendency for self-mutilation. In a pilot study, it was found that sweetened ice popsicles were effective, but it was unknown if this was due to the cold effect or the sweetness. Both sweetened and unsweetened popsicles have now been shown to be effective for reducing self-mutilation following LA in children. Ice popsicles could replace our usual stickers and be a more beneficial reward system.

Comment (RB): The authors performed a crossover study on 31 children, aged 4–11 years, who had LA as part of their dental treatment. They suggested that giving children an unsweetened ice popsicle after a treatment involving LA, reduces the incidence of self-mutilation to the cheeks, lips and tongue. The study described that popsicles assist in distraction by keeping the teeth and tongue occupied while LA wears off, and secondly, by cold application to tissues, which reduces pain through the 'gate-control theory'. The study concluded that the ice popsicles are effective in providing distraction and cold application. For children, it is a social norm for a dental therapy visit to conclude with a small reward. The unsweetened ice popsicles appear to be a practical and cost-effective means to reduce injury, due to the ice blocks being perceived as a reward and also providing post-LA benefits in reducing the incidence of self-mutilation.

Reference: *Int J Paediatr Dent* 2010;20(5):382–8

<http://tinyurl.com/IntJPaedDent-20-382>

NEW ~ OUT NOW

Bone Health
Research Review

✱ [Click here to subscribe](#)

COMING SOON...

Smoking Cessation
Research Review

✱ [Click here to subscribe](#)

Subscribe to
Oral Health Review

go to

www.researchreview.co.nz

The prevalence and treatment outcomes of primary tooth injuries

Authors: Arıkan V et al

Summary: Fifty-one children who presented with dental trauma (99 teeth) were involved in this study. The authors found that boys were 1.5 times more likely to receive a dental injury than girls. Except for one patient, all injuries were to the maxillary arch, and the most common injury was lateral luxation (33.3%), followed by subluxation. Follow-up only was the most common treatment approach (39.4%), followed by extraction (29.3%) and root canal (12.1%). Alarming, only 16 of the 51 patients presented within 24 hours. 39.2% of traumatic injuries occurred between ages 1 and 2 years, and 23.5% at age 4 years.

Comment (JL): It has been estimated that the prevalence of traumatic dental injuries varies from 11% to 30% in children younger than 6 years of age. Not only do these injuries cause pain, they can also result in functional and aesthetic problems, and damage the developing permanent successor. It is important that the parents of our paediatric patients are made aware of the necessity to bring their children to see us as soon as possible after any injury has occurred. Not only could a more serious injury be missed, it is vital to ensure that all injuries to primary teeth are registered with ACC to ensure ongoing cover in case of damage to the permanent successor.

Comment (RB): This study records and reports on the referrals for primary tooth trauma to Ankara University paediatric department in Turkey. Over 21 months, 51 patients presented; ages ranged from 2–4 years. The majority of injuries were lateral luxations to maxillary primary anteriors. More boys presented than girls, with boys being 1.5 times more likely to be dentally injured than girls. Treatments provided to children with injured teeth were a follow-up only, extraction and root canal treatment with splinting. Young children learning to walk have limited co-ordination and are prone to falls and potential dental injury. This could result in subsequent primary tooth trauma, permanent successor tooth germ damage and soft tissue injury. The authors concluded that dental accidents should be seen immediately postinjury, even if minor. They recommend parent and teacher dental health education on dental injuries for children to ensure timely presentation and treatment.

Reference: *Eur J Dent* 2010;4(4):447–53

http://www.eurident.com/images/Volume_4/4-447-453.pdf

Independent commentary by Rebecca Baird, BHSoc (Dental Therapy) Otago.

Becky is employed as a Professional Practice Fellow, with the Bachelor of Oral Health Programme at the School of Dentistry, University of Otago, and is also a paper co-ordinator for the first-year clinical paper. Before being employed with the University of Otago, Becky worked for the Auckland Regional Dental Service as a dental therapist. Becky is currently working towards completing her Diploma in Public Health in 2011.

Independent commentary by Jonathan Leichter DMD, Cert Perio (Harvard).

Dr Leichter is currently Senior Lecturer in the Department of Oral Sciences at the University of Otago. Dr Leichter joined the faculty after 20 years in fulltime private practice in New York and Boston, 18 of which were spent in specialist practice limited to periodontology and implant dentistry. Trained at Tufts University and obtaining his specialist training at Harvard University, he has been actively involved in clinical dental implant practice since 1984. Since 2002, he has supervised and mentored postgraduate students in periodontology, endodontics and prosthodontics. His research interests and publications are in the field of periodontology, dental trauma and laser applications in dentistry.

Research Review publications are intended for New Zealand health professionals.

Mouthwash use in general population: results from adult dental health survey in Grampian, Scotland

Authors: Macfarlane TV et al

Summary: The Scottish Grampian Adult Dental Health Survey was conducted to evaluate the current state of oral health, access to dental care and a range of related behaviours. Postal questionnaires were sent to 6000 people, of which 3022 were returned and included in the study. Of the 51 questions asked, one specific question targeted mouthwash use – “How often do you rinse with a mouthwash?” Daily mouthwash use was reported by 25.1%, 19.4% used it every few days, 17.5% used it less than once a month and 38.1% had never used it. Mouthwash use was significantly higher in: i) older versus younger respondents; ii) females versus males; iii) respondents from lower versus higher levels of affluence; and iv) abstainers of alcoholic drinks versus those who consumed alcohol once daily. The proportion of people who use mouthwash was also highest among those who flossed daily, those who brushed two or more times a day, smokers and those with gum disease, ulcers and oral infections or swellings.

Comment (JL): I was not surprised that women were more likely to use a mouthwash than men, but found it interesting that people in deprived areas were more likely to use mouthwash than those in affluent areas as I presumed it would be the reverse situation. Mouthwashes are an adjunct to the primary methods of cleaning, namely brushing and flossing. They can be a valuable aid for some patients, but are not suitable for those physically unable to rinse or unable to understand simple instructions. We need to take into account the patient's current oral hygiene procedures as well as periodontal health, teeth and oral mucosa when choosing which mouthwash to prescribe, if any at all.

Comment (RB): Mouthrinses are vehicles of active ingredients to reduce soft tissue inflammation, halitosis and dental sensitivity. It also aids in the reduction of plaque levels and prevention of gingivitis. However, mouthwash is only as effective as the person's ability to rinse. In this study, 3022 Scottish participants were required to complete a questionnaire, surveying their sociodemographic statistics and oral health-related behaviours. The results illustrate that many participants had never used a mouthwash, while some used it rarely and some used it daily. Women were more likely to use mouthwash than men; this concurs with other studies that have reported that women exhibit better oral health behaviours. Mouthwash is commonly used to reduce halitosis; perhaps this is why smokers use mouthwash more than nonsmokers. Mouthwash use in this study population was associated with sociodemographic, health and behavioural factors. Taking this into account, we can better recommend or encourage the use of suitable mouthwashes for our patients.

Reference: *J Oral Maxillofac Res* 2010;1(4):e2

<http://ejomr.org/JOMR/archives/2010/4/e2/v1n4e2ht.htm>

Association between periodontal disease and osteoporosis in postmenopausal women in Jordan

Authors: Al Habashneh R et al

Summary: This cross-sectional study of 400 postmenopausal women looked at the relationship between skeletal bone mineral density (BMD) and various clinical parameters of periodontal status. It was found in a multivariate analysis that the prevalences of periodontitis and severe loss of alveolar crestal height among women who had osteoporosis was significantly higher than those among women with a normal BMD or with osteopenia (ORs 2.45 [95% CI 1.38, 4.34] and 4.20 [1.57, 11.22], respectively). The presence or absence of calculus was not a factor in the relationship between periodontitis and osteoporosis. Women who took vitamin D supplementation were found to be less likely to have periodontitis than those who did not.

Comment (JL): As osteoporosis is a rapidly growing health issue and is often under-diagnosed, an understanding of the association between the two conditions may aid health professionals in the prevention, early detection and treatment of either one of these diseases. Evaluating this relationship is, of course, complicated by the fact that both diseases have a multifactorial aetiology. After reading this article I was left with the question – is there a causal relationship between osteoporosis and periodontitis, or is the association merely the result of common predisposing factors? Either way, we need to educate our patients about oral disease risk factors and emphasise the benefits of a healthy lifestyle.

Comment (RB): Osteoporosis is a chronic progressive disease, and is the most common metabolic bone disease in the US. Osteoporosis affects a third of postmenopausal women in Jordan where low systemic bone density results in reduced bone strength. In this study, 400 postmenopausal participants had an x-ray taken to measure skeletal BMD and a periodontal exam with radiographs. The results were analysed to assess the relationship between the two. However, because both osteoporosis and periodontitis are diseases with multiple causative factors, the process to evaluate the relationship becomes complex. Participants with bone osteoporosis were more likely to have lost significant alveolar crest height and experience periodontitis. The authors highlighted that patients who are diagnosed with osteoporosis will benefit from a comprehensive preventive plan in order to keep the gingival tissue and supportive structures in optimum health. Further studies are required to understand the detailed relationships between osteoporosis and oral health in order to provide patients with adequate support and advice, and to encourage preventative oral health behaviours.

Reference: *J Periodontol* 2010;81(11):1613–21

<http://www.joponline.org/doi/abs/10.1902/jop.2010.100190>

Primary tooth emergence in Australian children: timing, sequence and patterns of asymmetry

Authors: Woodroffe S et al

Summary: In this study, one twin from each recruited pair (216 pairs) was randomly selected and tooth emergence recorded by the parent on a specifically designed chart. The participants were all of European ancestry, which the authors felt reflected the majority of Australian children. Results showed a consistent sequence: central incisor, lateral incisor, first molar, canine, second molar. Maxillary lateral incisors and mandibular central and lateral incisors were the most variable in their timing of emergence. Antimeres tended to emerge within 2–4 weeks of each other, and all teeth demonstrated a left-side preference in antimeric emergence.

Comment (JL): It is vital that those of us treating children understand the timing and sequence of tooth emergence, as a significant deviation between chronological age and dental age may be indicative of an underlying local or systemic disturbance. Although the sequence of primary tooth eruption has remained consistent over time, it was interesting to note that primary tooth emergence is occurring later than previously reported.

Comment (RB): This paper describes the eruption process of deciduous teeth as being driven by 'a highly co-ordinated underlying process'. Data from 216 twins' tooth eruptions were collected by trained parents. By doing this, the researchers claim to have found a more detailed and day-specific framework in eruption times. In turn, they comment that the results can better inform dental professionals in diagnosing eruption anomalies. The twins' primary teeth emergence sequence was slightly delayed in comparison with similar studies in non-twin children. This study reported that mandibular central incisors erupted at 8.6 months. This may represent a generational shift, as suggested by the authors, since previous studies on non-twin children have shown eruption time at 6.7 months in 1964 and 7.2 months in 2003. Antimeric teeth continue to erupt over approximately a 2-week period in pairs, with a tendency to erupt on the left side first.

Reference: *Aust Dent J* 2010;55(3):245–51

<http://onlinelibrary.wiley.com/doi/10.1111/j.1834-7819.2010.01230.x/abstract>

Xerostomia: an update for clinicians

Authors: Hopcraft MS & Tan C

Summary: This paper reviewed some of the literature to provide an evidence-based update on xerostomia. The authors highlighted: i) the difference between xerostomia – a subjective perception of dry mouth, and salivary gland hypofunction (SGH) – a reduction in the flow or chemical composition of saliva; ii) the debilitating nature of a dry mouth and its impact on quality of life; and iii) that 20% of people report a dry mouth, with an increasing prevalence in the elderly. The multidimensional continuous scale Xerostomia Inventory was recommended as a useful tool in assessing xerostomia.

Comment (JL): I always find it helpful to read review articles. Not only do they confirm what I already know, they also invariably give me something new to think about. SGH refers to the condition where salivary flow is significantly decreased with possible alteration in the chemical composition of the saliva. Xerostomia, on the other hand, is defined as the subjective perception of dry mouth and can only be assessed through direct questioning. Both SGH and xerostomia increase caries risk and can contribute to periodontal diseases and oral infections. It is important that we include an assessment of dry mouth for all elderly patients. Although aging *per se* does not significantly affect salivary flow, xerostomia is often the result of many types of medication. In addition, the interactions between certain drugs can contribute to the incidence to xerostomia, particularly in the elderly. Of interest is that polypharmacy has not been linked to increased xerostomia in younger populations. Once the correct diagnosis has been made (SGH/xerostomia/both), appropriate prevention and symptomatic relief must be put in place for these patients.

Comment (RB): This informative update is on the causes and implications of reduced saliva flow. Previous studies on prevalence of xerostomia have been limited to elderly institutionalised cohorts, which may overestimate the actual incidence of this phenomenon. Xerostomia may be associated with certain medications, and therefore the higher the number of medications taken – as seen in the elderly – the higher the prevalence of xerostomia. Xerostomia and/or reduced salivary flow impacts negatively on oral health; it also limits patients ability to eat or speak comfortably. Correct diagnosis and appropriate treatment will help to alleviate the symptoms and reduce the consequences of a dry mouth.

Reference: *Aust Dent J* 2010;55(3):238–44

<http://onlinelibrary.wiley.com/doi/10.1111/j.1834-7819.2010.01229.x/abstract>

Relationship between oral malodor and the menstrual cycle

Authors: Kawamoto A et al

Summary: This study looked at clinical parameters, such as probing depth, bleeding on probing (BOP) and presence of plaque, in a study group of 10 women with periodontitis and a control group of 12 women with healthy periodontal tissues. Volatile sulphur compounds (VSCs) were measured and an organoleptic measurement done. Saliva samples were collected for bacterial measurements to assess the relationship between malodour and bacterial number. Results of the study showed that VSCs, BOP and levels of *Prevotella intermedia* significantly increased during the ovulation phase of menstrual cycles of women with periodontitis, compared with both the follicular phase in the same women and women who were periodontally healthy.

Comment (JL): VSCs play an important role in oral malodour and are produced from food debris, cells, saliva and blood in the oral cavity. This needs to be taken into account when data from periodontal examinations and bacterial testing are analysed in women who are premenopausal as it may influence the data. From a clinical aspect, an increase in gingival inflammation, BOP and discomfort is commonly seen associated with a patient's menstrual cycle, and these changes might be worth taking into account when scheduling our patients' hygiene appointments.

Comment (RB): This Japanese study looked at sex hormones as a modifying factor in the influence of periodontal disease. In women, sex hormones regulate important biological functions, which can affect the soft tissues of the oral cavity. For example, there is increased incidence of gingivitis in puberty and pregnancy phases. During ovulation and the follicular phases of the menstrual cycle, the authors assessed the periodontium of 22 women. The VSCs and organoleptic measurements (where the participant gets to breathe on the researcher to determine the odour level) were taken, and saliva was collected. There were changes in VSC, bleeding of periodontium and an increase in oral bacterial load during menstruation in women with periodontitis. This raises the question – are we required to take a menstrual history from premenopausal women exhibiting signs of periodontal disease? Further studies are required to assess the lasting effects of sex hormones on the periodontium.

Reference: *J Periodont Res* 2010;45(5):681–7

<http://tinyurl.com/JPR-45-681>

Privacy Policy: Research Review will record your email details on a secure database and will not release them to anyone without your prior approval. Research Review and you have the right to inspect, update or delete your details at any time.

Disclaimer: This publication is not intended as a replacement for regular medical education but to assist in the process. The reviews are a summarised interpretation of the published study and reflect the opinion of the writer rather than those of the research group or scientific journal. It is suggested readers review the full trial data before forming a final conclusion on its merits.

Cervitec®
Professional bacterial control

Now as a mouth rinse!

Cervitec Liquid is a ready-to-use antimicrobial which ensures the effective distribution of the active ingredients throughout the entire oral cavity.

Ask your Territory Manager TODAY for more information!



Cervitec® Gel
Contains chlorhexidine and fluoride which prevents inflammation and cares for teeth, gingival tissue and the mucous membrane

Cervitec® Liquid
Antibacterial mouth rinse containing chlorhexidine and xylitol



**ivoclar
vivadent**
passion vision innovation

Freephone 0508 486 252

www.ivoclarvivadent.co.nz