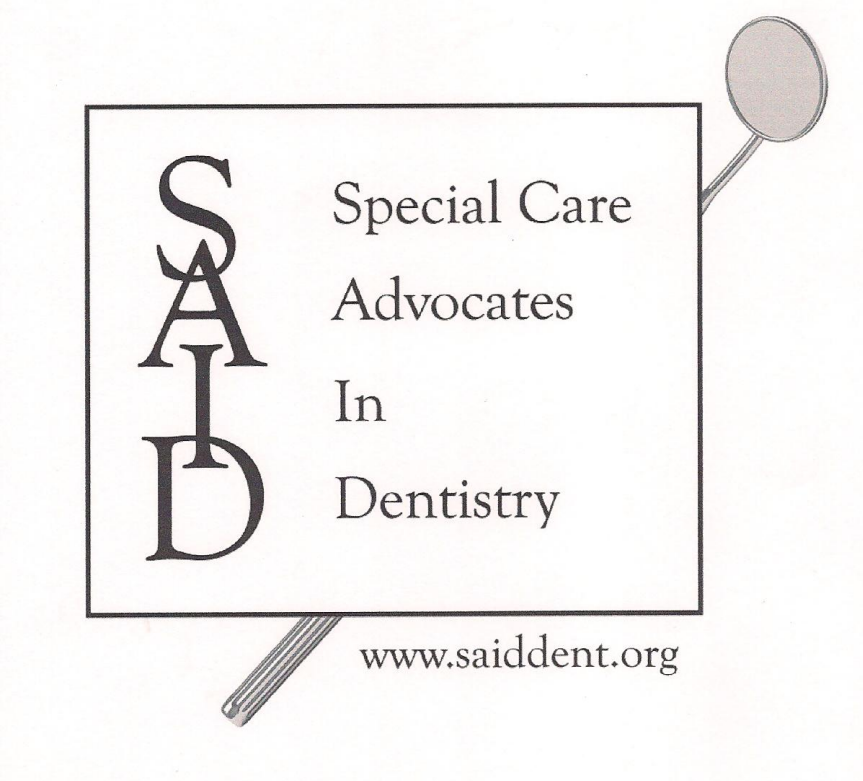
2019 ANNUAL SEMINAR CHARLESTON, SC

Special Care Advocates in Dentistry 2019 Lit. Review

(SAID's Search of Dental Literature Published in Calendar Year 2018*)



Compiled by:
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Special Acknowledgement to Janina Kaldan, MLS, AHIP of the Morristown Medical Center library for computer support and literature searches.

Recent journal articles related to oral health care
for people with mental and physical disabilities.

Search Program = PubMed
Database = Medline
Journal Subset = Dental
Publication Timeframe = Calendar Year 2016*
Language = English
SAID Search-Term Results = 1539
Initial Selection Result = 503 articles
Final Selection Result =132 articles

SAID Search-Terms Employed:

1. Intellectual disability
2. Mental retardation
3. Mental deficiency
4. Mental disorders
5. Mental health
6. Mental illness
7. Dental care for disabled
8. Dental care for chronically ill
9. Special Needs Dentistry
10. Disabled
11. Behavior management
12. Behavior modification
13. Behavior therapy
14. Cognitive therapy
15. Down syndrome
16. Cerebral palsy
17. Epilepsy
18. Enteral nutrition
19. Physical restraint
20. Immobilization
21. Protective devices
22. Moderate sedation
23. Conscious sedation
24. Analgesia
25. Anesthesia
26. Dental anxiety
27. Nitrous oxide
28. Gingival hyperplasia
29. Gingival hypertrophy
30. Autism
31. Silver Diamine Fluoride
32. Bruxism
33. Deglutition disorders
34. Community dentistry
35. Access to Dental Care
36. Gagging
37. Substance abuse
38. Syndromes
39. Tooth brushing
40. Pharmaceutical preparations

Program: EndNote X3 used to organize search and provide abstract. Copyright 2009 Thomson Reuters, Version X3 for Windows.

*NOTE: The American Dental Association is responsible for entering journal articles into the National Library of Medicine database; however, some articles are not entered in a timely manner. Some articles are entered years after they were published and some are never entered

1. Dent Clin North Am. 2018 Oct;62(4):657-663. doi:
10.1016/j.cden.2018.06.003. Epub
2018 Aug 14.

Sleep Bruxism and Pain.

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Bruxism is an oral behavior that may lead to repetitive jaw-muscle activity characterized by clenching or grinding of the teeth and/or by bracing or thrusting of the mandible with 2 distinct circadian manifestations: sleep bruxism
or awake bruxism. They share common risk factors and lead to similar consequences
for the masticatory system but may have different etiology and pathophysiology.
This oral behavior has been associated with tooth wear, masticatory muscle tenderness, headaches, and painful temporomandibular disorders. Available scientific evidence does not support the view that bruxism is a direct cause of
pain, which should be taken into account when treating/managing patients.

2. Dent Clin North Am. 2018 Oct;62(4):629-656. doi:
10.1016/j.cden.2018.06.005. Epub
2018 Aug 14.

Sleep and Orofacial Pain.

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Sleep and pain share a bidirectional relationship. Therefore, it is important for
practitioners managing patients experiencing either sleep and/or pain issues to
recognize and understand this complex association from a neurobiological perspective involving neuroanatomic and neurochemical processes. Accounting for
the influence of pain on the various aspects of sleep and understanding its impact on various orofacial pain disorders assists in developing a prudent management approach. Screening for sleep disorders benefits practitioners in identifying these individuals. Instituting evidence-based multidisciplinary management strategies using both behavioral and pharmacologic strategies enhances
the delivery of appropriate care.

3. J Oral Rehabil. 2018 Dec;45(12):990-997. doi: 10.1111/joor.12708. Epub 2018 Sep
10.

Oral function of older people with mild cognitive impairment or dementia.

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OBJECTIVES: The aim of this study was to examine and compare the oral function of
older people with mild cognitive impairment (MCI) or dementia.
METHODS: This cross-sectional observational study included participants with MCI
or dementia aged 60 years or older. Global cognitive functioning was evaluated with the Mini Mental State Examination (MMSE) and the oral function was evaluated
with subjective and objective assessments, including the perceived quality of chewing and swallowing, the function of the prostheses, the number of occluding
pairs (OP), the degree of tooth wear and the active and passive maximum mouth opening.
RESULTS: The quality of chewing and swallowing was perceived as good in, respectively, 86.0% and 90.9% of the participants. Full or partial prostheses were worn by 63.8% of the participants, and the retention was good in 58.4% of the upper and 50.0% of the lower prostheses. Participants with MCI had a median
of 3.0 (Inter Quartile Range [IQR] 0.0-7.5) occluding pairs, while participants
with dementia had a median of 0.0 (IQR 0.0-1.0) occluding pairs, U = 3838.50, P < 0.001. There was a weak positive correlation between the number of occluding
pairs and the MMSE score, r = 0.267, also when adjusted for age, r = 0.230. The
median tooth wear score was 2.0 (IQR 2.0-2.0) in participants with MCI or dementia. The active maximum mouth opening was 45.8 (SD 9.3) mm in participants
with dementia, while it was 49.8 (SD 8.1) mm in those with MCI, t(253) = 2.67, P = 0.008.
CONCLUSION: For most participants with MCI or dementia, the swallowing ability and chewing ability were perceived as good. In addition, more than half of the prostheses had good retention and occlusion. Participants with more severe cognitive impairment had fewer occluding pairs and a smaller active mouth opening. The degree of tooth wear was less than one-third of the clinical crown

in most participants with MCI or dementia.

4. J Craniofac Surg. 2018 Sep;29(6):1505-1508. doi: 10.1097/SCS.0000000000004723.

Impact of Temporomandibular Disorders and Sleep Bruxism on Oral Health-Related Quality of Life of Individuals With Complete Cleft Lip and Palate.

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The temporomandibular disorders (TMDs) and sleep bruxism (SB) affect the quality
of life (QoL) of the individuals in general. However, the literature lacks studies on individuals with cleft lip and palate (CLP). Thus, this study aimed to
evaluate the impact of TMD and SB on the oral health-related quality of life (OHRQoL) of individuals with CLP. Thirty-six individuals, both genders, aged between 30 and 50 years, at routine treatment in the Dental Prosthesis Sector of
Hospital for Rehabilitation of Craniofacial Anomalies-University of São Paulo were selected and divided into the following groups: G1-unilateral complete CLP
(n = 22) and G2-bilateral complete CLP (n = 14). Three questionnaires were applied: Oral Health Impact Profile (OHIP-14), SB self-report and Research Diagnosis Criteria for TMD. Fisher test, Mann-Whitney test, and t test were applied to verify values between TMD, SB, gender, and OHIP-14 ($P < 0.05$). The mean OHIP-14 score was of 5.80, and females had higher (8.58) OHRQoL than males
(3.31). There was association with gender and OHRQoL (t test, $P = 0.006$), TMD with OHRQoL (Mann-Whitney test, $P = 0.036$), and TMD and SB (Fisher test, $P = 0.006$). Temporomandibular disorder was diagnosed in 30% of the individuals.
Of these, 16.66% did not present SB, while 13.88% presented it. The association
TMD versus SB showed statistically significant differences and 83.33% of the individuals reporting SB also had TMD. Based on this study, the authors can conclude that: TMD impacts OHRQoL in CLP patients, females are more affected in

their OHRQoL than males, SB was strongly associated with TMD.

5. Spec Care Dentist. 2018 Sep;38(5):299-306. doi: 10.1111/scd.12314. Epub 2018 Jul
25.

Periodontal disease in Down's syndrome patients. A retrospective study.

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AIM: The purpose of this study was to assess the periodontal condition of people
with Down syndrome (DS). Furthermore, risk factors were identified for the development of periodontitis.
METHODS AND RESULTS: Data were collected at the Centre for Special Care Dentistry
(CBT) Rijnmond from the records of all 183 registered patients with DS who were
18 years of age on 31 December 2013. Patients were divided into two groups on the
basis of their periodontal status: healthy or periodontally compromised. A total
of 36.6% of the DS patients had actually incurred damage by periodontitis. The risk factors were: high age at the time of intake, large number of treatment sessions, and impossibility for the "Dutch Periodontal Screening Index" to be measured. In conclusion, the early introduction and continuous attendance of DS patients in a CBT can contributed to better results for a healthy periodontal condition.

6. Gerodontology. 2018 Dec;35(4):365-375. doi: 10.1111/ger.12357. Epub 2018 Jul 13.

Randomised clinical trial: Efficacy of strategies to provide oral hygiene activities to nursing home residents with dementia who resist mouth care.

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OBJECTIVES: The purpose of this study was to test the efficacy of MOUTh (Managing
Oral Hygiene Using Threat Reduction), a nonpharmacologic, relationship-based intervention vs. control on 2 primary outcomes for nursing home (NH) residents with dementia who resisted mouth care: (i) reduction in the occurrence and intensity of care-resistant behaviours (CRBs) and (ii) improvement in oral health. Two secondary outcomes were also examined: (i) the duration of mouth care
and (ii) the completion of oral hygiene activities.
BACKGROUND: Persons with dementia who exhibit CRBs are at risk for inadequate mouth care and subsequent systemic illnesses.
MATERIALS AND METHODS: The study used a randomised repeated measures design.
Recruitment occurred in 9 nursing homes that varied in size, ownership, reimbursement patterns and location. One hundred and one nursing home residents
with dementia were randomised at the individual level to experimental (n = 55) or
control groups (n = 46). One hundred participants provided data for the analyses.
RESULTS: Compared to the control group, persons in the experimental group had twice the odds of allowing mouth care and completing oral hygiene activities; they also allowed longer duration of mouth care (d = 0.56), but showed only small
reductions in the intensity of CRBs (d = 0.16) and small differential improvements in oral health (d = 0.18).
CONCLUSION: The data suggest that this intervention facilitates mouth care among
persons with dementia. The management of refusal behaviour may be a clinically more realistic approach than reducing or eradicating refusals.

7. J Craniofac Surg. 2018 Sep;29(6):e617-e618. doi: 10.1097/SCS.0000000000004679.

Cervicofacial Necrotizing Fasciitis and Drugs.

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Necrotizing fasciitis (NF) is a devastating disease that typically affects immunocompromised patients, chronically debilitated patients or drug users, but
can also affect healthy patients. Necrotizing fasciitis can rapidly produce septic shock and requires immediate surgical management of the necrotic tissue.
It is a bacterial infection that progresses rapidly and has a high mortality generally caused by aerobic and anaerobic bacteria. The patient was immunocompromised and drug user. During treatment, a combination of broad-spectrum antibiotic therapy with Ciprofloxacin and Metronidazole, besides
the use of activated charcoal dressing composed of carbonized fabric and impregnated with 0.15% silver nitrate enveloped by layer of fabric without activated carbon, chemical-mechanical debridement with hydrogen peroxide, 0.9% saline, and povidone iodine. According to the patient presented, for the treatment of NF there is a need for broad-spectrum antibiotic therapy associated
with surgical debridement, use of activated charcoal for antiseptic compression
and general intensive care.

8. J Clin Pediatr Dent. 2018;42(5):325-330. doi: 10.17796/1053-4625-42.5.1. Epub 2018 May 15.

Fluoride Exposure in Early Life as the Possible Root Cause of Disease In Later Life.

Nakamoto T, Rawls HR.

Fluoride, one of the most celebrated ingredients for the prevention of dental caries in the 20th century, has also been controversial for its use in dentifrices and other applications. In the current review, we have concentrated primarily on early-life exposure to fluoride and how it may affect the various organs. The most recent controversial aspects of fluoride are related to toxicity of the developing brain and how it may possibly result in the decrease of intelligence quotient (IQ), autism, and calcification of the pineal gland. In addition, it has been reported to have possible effects on bone and thyroid glands. If nutritional stress is applied during a critical period of growth and development, the organ(s) and/or body will never recover once they pass through the critical period. For example, if animals are force-fed during experiments, they will simply get fat but never reach the normal size. Although early-life fluoride exposure causing fluorosis is well reported in the literature, the dental profession considers it primarily as an esthetic rather than a serious systemic problem. In the current review, we wanted to raise the possibility of future disease as a result of early-life exposure to fluoride. It is not currently known how fluoride will become a cause of future disease. Studies of other nutritional factors have shown that the effects of early nutritional stress are a cause of disease in later life.

9. Spec Care Dentist. 2018 Jul;38(4):266-268. doi: 10.1111/scd.12292. Epub 2018 May

Depression and its effects on the success of resin-based restorations.

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AIMS: There are many factors that play into the success or failure of dental treatments, and mental health has been hypothesized to increase failure rates in treatment such as resin-based restorations. The goal of this work was to evaluate if composite resin dental restorations perform the same in individuals with

depression in comparison to matched individuals without depression. METHODS AND RESULTS: A total of 6,026 individuals from the University of Pittsburgh Dental Registry and DNA Repository project were evaluated and 326 patients with depression were selected for this study. They were matched by age, sex, ethnicity, and smoking history with 326 subjects without depression. Rates of failure of resin-based restorations were determined in both groups. Chi-square was used for all comparisons with alpha set at 0.05. We found significantly higher failure rates of resin-based restorations in patients diagnosed with clinical depression ($p < 0.00001$, OR = 1.89, 95% C.I. 1.6 to 2.23). DISCUSSION: The significantly higher failure rates in patients with clinical depression suggests that clinical depression has an effect on the success of resin-based restorations. The results of this study suggest a need for more personalized dental care for patients, which includes taking into account their mental health and its subsequent effects on oral health and hygiene, and customized definitions of follow-up time intervals.

10. Med Oral Patol Oral Cir Bucal. 2018 May 1;23(3):e335-e343. doi: 10.4317/medoral.22311.

Possible association between obesity and periodontitis in patients with Down syndrome.

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BACKGROUND: The present study was carried out to evaluate the possible association between obesity and periodontitis in patients with DS, and to explore which measure of obesity is most closely correlated to periodontitis. MATERIAL AND METHODS: A prospective observational study was made to determine whether obesity is related to periodontal disease in patients with DS. The anthropometric variables were body height and weight, which were used to calculate BMI and stratify the patients into three categories: < 25(normal weight), 25-29.9 (overweight) and ≥ 30.0 kg/m2 (obese). Waist circumference and hip circumference in turn was recorded as the greatest circumference at the level of the buttocks, while the waist/hip ratio (WHR) was calculated. Periodontal evaluation was made of all teeth recording the plaque index (PI), pocket depth

(PD), clinical attachment level (CAL) and the gingival index. We generated a multivariate linear regression model to examine the relationship between PD and
the frequency of tooth brushing, gender, BMI, WHI, WHR, age and PI.
RESULTS: Significant positive correlations were observed among the anthropometric
parameters BMI, WHR, WHI and among the periodontal parameters PI, PD, CAL and GI.
The only positive correlation between the anthropometric and periodontal parameters corresponded to WHR. Upon closer examination, the distribution of WHR
was seen to differ according to gender. Among the women, the correlation between
WHR and the periodontal variables decreased to nonsignificant levels. In contrast, among the males the correlation remained significant and even increased. In a multivariate linear regression model, the coefficients relating
PD to PI, WHR and age were positive and significant in all cases.
CONCLUSIONS: Our results suggest that there may indeed be an association between
obesity and periodontitis in male patients with DS. Also, we found a clear correlation with WHR, which was considered to be the ideal adiposity indicator in this context.

11. J Oral Rehabil. 2018 Jul;45(7):545-554. doi: 10.1111/joor.12633. Epub 2018 May 3.

Association between psychotropic medications and presence of sleep bruxism: A systematic review.

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The purpose of this study was to systematically review the literature for studies
that investigated the association between use of psychotropic medications and presence of sleep bruxism (SB). Observational studies were selected in a two-phase process. Searches were performed on six electronic databases, and a grey literature search was conducted on three databases. SB diagnosis was based
on questionnaires or clinical examinations; no polysomnography examinations were
performed. Risk of bias was assessed using the Joanna Briggs Institute Critical
Appraisal Checklist for Analytical Cross-Sectional Studies. Overall quality of evidence was evaluated according to the Grading of Recommendations Assessment, Development and Evaluation criteria. Five analytical cross-sectional studies were
included, evaluating antidepressants, anticonvulsants and psychostimulants. One
study was judged as low risk of bias, three as moderate risk and one high risk.
Antidepressants were evaluated in adult populations only; duloxetine (Odds Ratio
[OR] = 2.16; 95% Confidence Interval [95% CI] = 1.12-4.17), paroxetine
(OR = 3.63; 95% CI = 2.15-6.13) and venlafaxine (OR = 2.28; 95% CI = 1.34-3.86)
were positively associated with SB risk. No increased odds of SB were observed considering use of citalopram, escitalopram, fluoxetine, mirtazapine and sertraline. With regard to anticonvulsants, only barbiturates were associated with SB in children (OR = 14.70; 95% CI = 1.85-116.90), while no increased odds
were observed for benzodiazepine, carbamazepine and valproate. The only psychostimulant evaluated was methylphenidate, and an association with SB was observed in adolescents (OR = 1.67; 95% CI = 1.03-2.68). Findings from this SR suggested that medications such as duloxetine, paroxetine, venlafaxine, barbiturates and methylphenidate might be associated with SB; however, overall quality of evidence was considered very low, and therefore, caution is recommended.

12. Gen Dent. 2018 Mar-Apr;66(2):10-13.

Considerations for the management of patients with generalized anxiety disorder in the dental setting.

Henry A, Buchbinder W, Chaudhry S, Saraghi M, Panchal N.

13. Int J Oral Maxillofac Surg. 2018 Jul;47(7):879-887. doi:
10.1016/j.ijom.2018.02.001. Epub 2018 Mar 2.

Comparison between burning mouth syndrome patients with and without psychological problems.

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The purpose of this study was to compare clinical and socio-demographic characteristics between burning mouth syndrome (BMS) patients with and without psychological problems. Of 644 patients with symptoms of oral burning, 224 with primary BMS were selected on the basis of laboratory testing, medical history, and psychometric tests: 39 with psychological problems (age 62.5±11.5years) and 185 without psychological problems (age 58.4±11.4years). Comprehensive clinical and socio-demographic characteristics, including psychological profiles and salivary flow rates, were compared between the two groups. No significant difference in sex ratio, duration and diurnal pattern of symptoms, unstimulated whole saliva flow rate, or marital status was found between the groups. The patients with psychological problems had a significantly higher mean age, reduced stimulated whole saliva flow rate, and lower level of education than those without psychological problems. The patients with psychological problems also displayed higher rates and greater severity of various types of BMS-related symptom in most parts of the oral mucosa, higher rates of stress-related symptoms, and greater difficulties in daily activities. The severity of taste disturbance was the factor most significantly correlated with the level of psychometry. In conclusion, psychological problems in BMS patients are associated with an aggravation of BMS symptoms.

14. Dent Clin North Am. 2018 Apr;62(2):279-294. doi: 10.1016/j.cden.2017.11.007.

Role of Dentists in Prescribing Opioid Analgesics and Antibiotics: An Overview.

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Opioid analgesics and antibiotics prescribed by dentists is a useful and cost-effective measure when prescribed appropriately. Common dental conditions are best managed by extracting the offending tooth, restoring the tooth with an
appropriate filling material, performing root canal therapy, and/or fabricating a
prosthesis for the edentulous space. Unnecessary prescription of opioid analgesics and antibiotics to treat dental pain and bacterial infection is a growing public health concern. This article highlights the state of the literature on opioid analgesic and antibiotic prescribing practices in dentistry,
the impact of opioid analgesic overdose, and prevention strategies to reduce opioid analgesics and antibiotic overprescription.

15. Dent Clin North Am. 2018 Apr;62(2):245-267. doi: 10.1016/j.cden.2017.11.005.

Dental Care for Geriatric and Special Needs Populations.

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This article reviews considerations for oral health care associated with the most
common causes of mortality and morbidity in older adults. Many of these diseases
result in functional or cognitive impairments that must be considered in treatment planning to ensure appropriate, safe, and effective care for patients.
Many of these considerations parallel those of adults who have lived with developmental disabilities over a lifetime and similar principles can be applied.
Systemic diseases, conditions, and their treatments can pose significant risks to
oral health, which requires prevention, treatment, and advocacy for oral health
care as integral to chronic disease management.

16. Br Dent J. 2018 Jan 12;224(1):38-42. doi: 10.1038/sj.bdj.2018.5.

A study of oral health prevention behaviours for patients with early stage dementia.

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Background Thorough dental prevention provided at the diagnosis of early stage dementia may be able to reduce the risk of dental disease before the associated cognitive decline takes hold.Method A questionnaire was used to see how many patients with a recent diagnosis of dementia were registered with a dentist and if they were accessing preventative dental care. The questionnaire was administered to patients attending Memory Assessment Services (MAS), approximately ten weeks after initial diagnosis. A similar questionnaire was conducted among MAS staff providing insight into their own personal dental care knowledge and behaviours.Results The total number of participants in the study was 51. Eighty percent were currently registered or seen regularly by a dentist. About half of all patients attended for regular hygienist sessions. Most patients did not receive dietary advice or oral hygiene instruction, nor were offered additional fluoride supplementation.Conclusion There was clearly scope for improving oral health education and prevention for dementia patients. MAS nurses were aware of the need for good oral health for themselves and for their patients, however, weren't aware of the current best evidence for prevention as prescribed by the Delivering Better Oral Health toolkit.

17. Spec Care Dentist. 2018 Jan;38(1):46-50. doi: 10.1111/scd.12262. Epub 2017 Dec 26.

Factors associated with anterior open bite in children with developmental disabilities.

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AIM: To investigate factors associated with anterior open bite in individuals aged from 2 to 33 years with developmental disabilities.
DESIGN: This is a cross-sectional study. A total of 271 dental records were examined. The anterior open bite analyzed was determined based on clinic exam. These variables were also analyzed: gender, age, education level of mother, International Code of Diseases (ICD), mouth breathing, use of anticonvulsant drugs, hyperkinesis, pacifier use, thumb sucking, seizure, and involuntary movements. For the purposes of analysis, the individuals were categorized as being with and without anterior open bite. Variables with a p-value of < 0.25 in
the bivariate analysis were incorporated into the logistic regression models.
RESULTS: Mouth breathers had a 2.60-fold (95% CI: 1.35-5.01) greater chance of exhibiting anterior open bite than nasal breathers. Pacifier users are more likely to have an anterior open bite (3.32-fold, 95% CI: 1.62-6.77). Individuals
with reported involuntary movements had a 2.66-fold (95% CI: 1.26-5.63) greater
chance of exhibiting anterior open bite. Users of anticonvulsants drugs had a 3.05 (95% CI: 1.57-5.92) greater chance of showing anterior open bite.
CONCLUSION: Involuntary movements, mouth breathing, using anticonvulsant drugs,
and using pacifier are factors associated with anterior open bite in patients with developmental disabilities.

18. Med Oral Patol Oral Cir Bucal. 2018 Jan 1;23(1):e1-e6. doi: 10.4317/medoral.21834.

Oral findings in Williams-Beuren syndrome.

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BACKGROUND: Williams-Beuren syndrome (WBS; OMIM #194050) is a developmental disorder characterized by congenital heart disease, intellectual disability, dysmorphic facial features and ophthalmologic abnormalities. Oral abnormalities
are also described in clinical manifestations of the disease. This paper describes orofacial features in patients with WBS.
MATERIAL AND METHODS: Seventeen patients with a confirmed molecular diagnosis of
WBS were examined for oral abnormalities through clinical oral evaluations and panoramic radiography.
RESULTS: Malocclusion, specifically with dental midline deviation, and high-arched palate were the most common findings.
CONCLUSIONS: The present results contribute to knowledge on the orofacial manifestations of WBS. Since such patients with WBS may develop severe oral abnormalities, early detection and treatment can help improve their quality of life.

19. Clin Oral Investig. 2018 Jun;22(5):1915-1922. doi: 10.1007/s00784-017-2284-y.
Epub 2017 Nov 25.

Orofacial manifestations in outpatients with anorexia nervosa and bulimia nervosa focusing on the vomiting behavior.

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OBJECTIVE: This case-control study aims to evaluate the oral health status and orofacial problems in a group of outpatients with eating disorders (ED)-either anorexia nervosa (AN) or bulimia nervosa (BN)-further focusing on the influence of vomit.

MATERIALS AND METHODS: Fifty-five women outpatients with AN or BN diagnosis were
invited to participate, of which 33 agreed. ED outpatients and matched controls
were submitted to a questionnaire and clinical oral examination.
RESULTS: Multivariate analysis identified a significantly higher incidence of teeth-related complications (i.e., tooth decay, dental erosion, and self-reported
dentin hypersensitivity), periodontal disease, salivary alterations (i.e., hyposalivation and xerostomia), and oral mucosa-related complications in ED outpatients. Dental erosion, self-reported dentin hypersensitivity, hyposalivation, xerostomia, and angular cheilitis were found to be highly correlated with the vomiting behavior.
CONCLUSIONS: ED outpatients were found to present a higher incidence of oral-related complications and an inferior oral health status, compared to gender- and age-matched controls. Alterations verified within outpatients were acknowledged to be quite similar to those previously reported within inpatients,
in both of nature and severity, thus sustaining that the cranio-maxillofacial region is significantly affected by ED, even in the early/milder forms of the condition, as expectedly verified within outpatients.

20. Clin Oral Investig. 2018 Jan;22(1):93-108. doi: 10.1007/s00784-017-2264-2. Epub
2017 Nov 15.

Oral hygiene and oral health in older people with dementia: a comprehensive review with focus on oral soft tissues.

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BACKGROUND: The number of older people with dementia and a natural dentition is growing. Recently, a systematic review concerning the oral health of older people with dementia with the focus on diseases of oral hard tissues was published.
OBJECTIVE: To provide a comprehensive literature overview following a systematic approach of the level of oral hygiene and oral health status in older people with dementia with focus on oral soft tissues.
METHODS: A literature search was conducted in the databases PubMed, CINAHL, and the Cochrane Library. The following search terms were used: dementia and oral health or stomatognathic disease. A critical appraisal of the included studies was performed with the Newcastle-Ottawa scale (NOS) and Delphi list.
RESULTS: The searches yielded 549 unique articles, of which 36 were included for critical appraisal and data extraction. The included studies suggest that older people with dementia had high scores for gingival bleeding, periodontitis, plaque, and assistance for oral care. In addition, candidiasis, stomatitis, and reduced salivary flow were frequently present in older people with dementia.
CONCLUSIONS: The studies included in the current systematic review suggest that older people with dementia have high levels of plaque and many oral health problems related to oral soft tissues, such as gingival bleeding, periodontal pockets, stomatitis, mucosal lesions, and reduced salivary flow.
SCIENTIFIC RATIONALE FOR STUDY: With the aging of the population, a higher prevalence of dementia and an increase in oral health problems can be expected. It is of interest to have an overview of the prevalence of oral problems in people with dementia.
PRINCIPAL FINDINGS: Older people with dementia have multiple oral health problems related to oral soft tissues, such as gingival bleeding, periodontal pockets, mucosal lesions, and reduced salivary flow.
PRACTICAL IMPLICATIONS: The oral health and hygiene of older people with dementia is not sufficient and could be improved with oral care education of formal and informal caregivers and regular professional dental care to people with dementia.

21. J Prosthet Dent. 2018 Mar;119(3):354-362. doi:
10.1016/j.prosdent.2017.07.005.
Epub 2017 Sep 28.

Association of sleep bruxism with ceramic restoration failure: A systematic review and meta-analysis.

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STATEMENT OF PROBLEM: Ceramic restorations are popular because of their excellent
optical properties. However, failures are still a major concern, and dentists are
confronted with the following question: is sleep bruxism (SB) associated with an
increased frequency of ceramic restoration failures?
PURPOSE: The purpose of this systematic review and meta-analysis was to assess whether the presence of SB is associated with increased ceramic restoration

failure.
MATERIAL AND METHODS: Observational studies and clinical trials that evaluated the short- and long-term survival rate of ceramic restorations in SB participants
were selected. Sleep bruxism diagnostic criteria must have included at least 1 of
the following: questionnaire, clinical evaluation, or polysomnography. Seven databases, in addition to 3 nonpeer-reviewed literature databases, were searched.
The risk of bias was assessed by using the meta-analysis of statistics assessment
and review instrument (MAStARI) checklist.
RESULTS: Eight studies were included for qualitative synthesis, but only 5 for the meta-analysis. Three studies were categorized as moderate risk and 5 as high
risk of bias. Clinical and methodological heterogeneity across studies were considered high. Increased hazard ratio (HR=7.74; 95% confidence interval [CI]=2.50 to 23.95) and odds ratio (OR=2.52; 95% CI=1.24 to 5.12) were observed
considering only anterior ceramic veneers. Nevertheless, limited data from the meta-analysis and from the restricted number of included studies suggested that
differences in the overall odds of failure concerning SB and other types of ceramic restorations did not favor or disfavor any association (OR=1.10; 95% CI=0.43 to 2.8). The overall quality of evidence was considered very low according to the GRADE criteria.
CONCLUSIONS: Within the limitations of this systematic review, the overall result
from the meta-analysis did not favor any association between SB and increased odds of failure for ceramic restorations.

23. Clin Oral Investig. 2018 Jan;22(1):461-467. doi: 10.1007/s00784-017-2134 -y. Epub 2017 May 25.

Three-year survival of ART high-viscosity glass-ionomer and resin composite restorations in people with disability.

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OBJECTIVES: To assess the 3-year cumulative survival rate of atraumatic restorative treatment (ART) and conventional resin composite restorations (CRT)
placed in persons with disability.
MATERIALS AND METHODS: Patients referred for restorative care to the Haemophilia
Foundation special care service were treated by one of two specialists. Patients
and/or caregivers were provided with written and verbal information regarding treatment options and selected the alternative they preferred. Treatment was provided as selected unless this option proved clinically unfeasible when an alternative technique was proposed. The treatment protocols were ART (hand instruments/high-viscosity glass-ionomer) in the clinic or CRT (rotary instrumentation/resin composite) in the clinic or under general anaesthesia (GA).
After 6, 12, 24 and 36 months, two independent, trained and calibrated examiners
evaluated restoration survival using established ART codes. The proportional hazard model with frailty corrections gave survival estimates over 3 years.
RESULTS: Sixty-six patients (13.6 ± 7.8 years) with 16 different disability profiles participated. CRT in the clinic proved feasible for five patients (13%),
and 14 patients received CRT under GA (21%). ART was used for 47 patients (71.2%). Altogether, 298 dentine carious lesions were restored in primary and permanent teeth (182 ART; 116 CRT). The 3-year cumulative survival rates and jackknife standard errors for the 182 ART and 116 CRT restorations were 94.8 ± 2.1 and 82.8 ± 5.3%, respectively (p = 0.01).
CONCLUSIONS: The 3-year follow-up results confirm that ART is an effective treatment protocol.
CLINICAL RELEVANCE: Patients with disability, many of whom have difficulty coping
with CRT, may benefit from the ART approach.

24. Spec Care Dentist. 2018 Nov;38(6):367-372. doi: 10.1111/scd.12334. Epub 2018 Oct 23.

Evaluation of the effectiveness of a custom-made toothbrush in maintaining oral hygiene and gingival health in cerebral palsy patients.

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AIM: To evaluate and compare the efficacy of customized toothbrushes in maintenance of oral hygiene and gingival health with that of conventional toothbrushes in children with cerebral palsy.

METHODS: Thirty patients with cerebral palsy in the age group of 6 to 18 years were randomly divided into two groups-group I (normal toothbrush) and group II (customized toothbrush). Common oral hygiene instructions were given to both the groups. Before beginning the study, plaque index (PI) and modified gingival index (MGI) were recorded, following which patients were made to practice their routine twice a day brushing with either normal toothbrush or custom-made toothbrush for 3 weeks. At the end of 3 weeks, PI and MGI were rerecorded. The subjects belonging to group II were also made to perform muscle exercises using the modified brush head.

RESULTS: Significantly high percentage drop between the pre- and post-PI as well as MGI (31.55% and 30.23%, respectively) was observed in the custom-made toothbrush group, while the percentage drop of only 8.34% (PI) and 14.51% (MGI)

was seen in the normal toothbrush group.

CONCLUSIONS: Custom-made tooth brushes increased the efficiency of maintaining oral hygiene and gingival health of individuals with cerebral palsy.

25. J Craniofac Surg. 2018 Sep;29(6):1434-1436. doi: 10.1097/SCS.0000000000004698.

Van der Woude and Popliteal Pterygium Syndromes.

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: Van der Woude syndrome is the most generic form of syndromic orofacial cleft, present in approximately 2% of all cleft patients. The lower lip pits with or without cleft lip and/or palate is typical of this syndrome. Popliteal pterygium syndrome (PPS), also known as popliteal web syndrome or fasciogenito-popliteal syndrome, was first described by Trelat in 1869, the incidence is approximately 1 in 300,000 live births. The term PPS was coined by Gorlin et al in 1968 based on the most unusual anomaly, the popliteal pterygium. Popliteal pterygium syndrome shares features with van der Woude syndrome but, in addition, is characterized by genital anomalies, syndactyly of fingers and toes, and toenail dysplasia. In some

patients, oral or eyelid synechiae are present. Van der Woude syndrome and PPS are autosomal dominantly inherited disorders caused by heterozygous mutations in IRF6. OBJECTIVE:: To report the familial nature of the disease in the mother and son, and to summarize the clinical characteristics, treatment, and outcomes in both patients.

26. Oral Maxillofac Surg Clin North Am. 2018 Aug;30(3):369-379. doi:10.1016/j.coms.2018.04.011. Epub 2018 Jun 1.

The Role of Stress in the Etiology of Oral Parafunction and Myofascial Pain.

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Oral parafunction during waking comprises possible behaviors that can be measured with a comprehensive checklist or behavioral monitoring. Multiple studies lead to largely consistent findings: stressful states can trigger parafunctional episodes that contribute to myofascial pain. However, this simple causal pathway coexists with at least 3 other pathways: anxiety and stress are potent direct contributors to pain, pain results in maladaptive behaviors such as parafunction, and parafunction may be a coping response to potential threat coupled with hypervigilance and somatosensory amplification. Awake parafunction remains an

important risk factor for myofascial pain onset and overuse models alone of causation are insufficient.

27. Pediatr Dent. 2018 May 15;40(3):215-219.

Oral Health of Patients with Special Health Care Needs After General Anesthesia: A 25- Year Retrospective Study.

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PURPOSE: The purpose of this study was to compare the oral health state and dental treatment outcomes of patients with special health care needs (SHCN) after general anesthesia (GA), according to their compliance with dental checkups.

METHODS: The medical records of SHCN patients who were treated under GA in a dental hospital from 1991 to 2016 were analyzed. The 157 patients in this study were divided into regular (<small>N</small> equals 62) and irregular (n equals 95) dental checkups.

RESULTS: The mean age was 16.4 years (range equals two to 52); 96 were male, and 61 were female. In the irregular checkup group, invasive treatments like pulp

treatment and extraction were performed more frequently during the checkup period (P<0.05). More patients underwent repeated GA in the irregular group (n equals 35; 36.8 percent) compared to the regular group (n equals six; 9.7 percent; P<0.05).

CONCLUSIONS: In our study, special health care needs patients in the irregular checkup group were approximately four times more likely to undergo repeated general anesthesia than those in the regular group. A regular checkup could reduce repeated GA and severity of dental treatment. Therefore, regular checkups must be included in the treatment plan of SHCN patients.

28. Int J Dent Hyg. 2018 Nov;16(4):467-475. doi: 10.1111/idh.12346. Epub 2018 May 11.

Potential risk factors for dental caries in Type 2 diabetic patients.

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BACKGROUND: Diabetic patients are known to be at higher risk for dental caries. However, the role of potential risk factors such as blood glucose, salivary

glucose and glycaemic control in the occurrence of dental caries in type 2 diabetes (T2D) is not clearly understood so far, and therefore, it was evaluated in this study.

MATERIALS AND METHODS: This cross-sectional study was conducted on 100 T2D patients from Saudi Arabia. The caries risk assessment was evaluated using the guidelines of Caries Management by Risk Assessment (CAMBRA). Cariogenic bacteria load in saliva was determined by a chair-side test kit. The levels of fasting blood glucose (FBG), salivary glucose and HbA1c were analysed.

RESULTS: Majority of the patients had dental caries (84%), exposed root surfaces (92%) and heavy plaque (73%), whereas 66% of patients suffered from xerostomia. The frequency of patients with high counts of Streptococcus mutans and Lactobacilli (LB) were 78% and 42%, respectively. There were significant associations between dental caries risk and FBG, HbA1c and salivary glucose. After categorizing the patients into 3 categories of glycaemic control, we observed a significant association between glycaemic control and dental caries risk.

CONCLUSION: Type 2 diabetes patients are at high risk for dental caries, which is directly associated with FBG, HbA1c and salivary glucose. This is the first study measuring dental caries and its risk factors in T2D patients from Saudi Arabia.

29. Dent Clin North Am. 2018 Apr;62(2):245-267. doi: 10.1016/j.cden.2017.11.005.

Dental Care for Geriatric and Special Needs Populations.

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This article reviews considerations for oral health care associated with the most common causes of mortality and morbidity in older adults. Many of these diseases result in functional or cognitive impairments that must be considered in treatment planning to ensure appropriate, safe, and effective care for patients. Many of these considerations parallel those of adults who have lived with developmental disabilities over a lifetime and similar principles can be applied. Systemic diseases, conditions, and their treatments can pose significant risks to oral health, which requires prevention, treatment, and advocacy for oral health care as integral to chronic disease management.

30. Eur J Prosthodont Restor Dent. 2018 Mar 1;26(1):2-15. doi:
10.1922/EJPRD_01721Laverty14.

The Current Evidence on Retaining or Prosthodontically Replacing Retained Deciduous Teeth in the Adult Hypodontia Patient: A Systematic Review.

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BACKGROUND: This systematic review aims to evaluate the survival of retaining or replacing deciduous teeth in hypodontia patients with a variety of prosthetic tooth replacement options, to evaluate prognostic factors associated with retaining deciduous teeth, and report on patient based outcomes with these treatment modalities.

METHODS: MEDLINE, The Cochrane Central Register of Controlled Trials and Science Direct databases were searched (01/1980 - 08/2017) for studies reporting outcomes associated with retaining or replacing deciduous teeth via prosthetic means in adult hypodontia patients.

RESULTS: Twenty-one articles were included. The following survival figures were reported; retaining deciduous tooth/teeth (83%-93%), resin-bonded bridgework (59-96.9%) and implants (86-100%). No survival data was reported for fixed or removable partial dentures. Prognostic factors for deciduous tooth survival, quality of life and patient satisfaction data were also reported.

CONCLUSION: Within the limits of this review, retaining deciduous teeth have reasonable survival; however, studies beyond the third decade of life are lacking. Dental implants appear to be a highly successful long-term tooth replacement option with high patient satisfaction within this patient group, as have resin-bonded bridgework, albeit over the short to medium term. Tooth replacement options in the form of fixed and removable partial dentures were poorly reported upon.

31. J Clin Pediatr Dent. 2018;42(2):155-160. doi: 10.17796/1053-4628-42.2.13. Epub 2017 Oct 31.

A Retrospective Audit of Dental Treatment Provided to Special Needs Patients under General Anesthesia During a Ten-Year Period.

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OBJECTIVE: The purpose of this study was to perform a comprehensive audit of dental treatment provided to special needs patients (SNP) under general anesthesia (GA) over a ten-year period.

STUDY DESIGN: Special needs patients who received dental treatment under GA as an in-patient at Queen Mary Hospital, Hong Kong SAR during the time period January 2002 and December 2011 were included in the study. The study population was divided into three groups, based on age (<6years, 6-12 years, >12 years). One-way ANOVA was used to evaluate the effect of "age group" on duration of treatment, post-recovery time, treatment procedures and utilization of different restorativematerials. Kappa statistics were used for intra-examiner reliability.

RESULTS: A total of 275 patients (174 males and 101 females) were included in the study. The mean age of the patients at the time they received GA was 12.37±10.18 years. Dental procedures performed were mostly restorative in nature (47%). The >12 years group had significantly shorter treatment duration ($p<0.05$). No significant difference in post-operative recovery time was observed among the three age groups ($p>0.05$). The <6 years group received significantly less preventive, but more restorative procedures ($p<0.05$). Significantly fewer extractions were performed in the 6-12 years group ($p<0.05$). The use of composite restorations was significantly higher in the <6 years group; while amalgam restorations were more frequently used in the >12 years group ($P<0.05$). Stainless steel crowns were more frequently employed in SNP under 12 years of age ($p<0.05$). Intra-examiner reliability was good ($k=0.94$).

CONCLUSIONS: Most of the dental procedures performed under GA on SNP were restorative procedures. For children less than 6 years of age, had longer treatment time under GA. Composite restorations and stainless steel crowns were more frequently used in the primary dentition and amalgam restorations were more frequently employed in the permanent dentition.

32. Clin Oral Investig. 2018 Apr;22(3):1319-1325. doi: 10.1007/s00784-017-2237-5. Epub 2017 Oct 6.

Diclofenac sodium gel therapy as an alternative to actinic cheilitis.

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OBJECTIVE: Actinic cheilitis (AC) is a potentially malignant lesion caused by prolonged exposure to ultraviolet light. The aim of this research was to analyze the efficacy of diclofenac sodium 3% gel in the treatment of this condition, through clinical follow-up.

METHODS: Thirty-one patients diagnosed with AC were instructed to perform a topical application of the gel three times a day for a period of 90 days. In each visit, a digital photography was obtained for verified progress and response to treatment. Two researchers evaluated all images after treatment was completed and assigned the following scores regarding clinical aspect of the lip: 1, complete improvement; 2, partial improvement; 3, no changes; 4, worsening of the clinical condition. In addition, the patients' tolerability to the drug and their satisfaction after treatment were evaluated.

RESULTS: Twelve cases abandoned the treatment for reasons unrelated to the study. Ten participants showed total remission of all clinical features of the lesion

and three had partial improvement of the characteristics. One participant presented worsening of clinical condition, and in five cases, treatment was discontinued due to development of mild adverse effects at the site of gel application. Regarding satisfaction analyses and tolerability to the drug, from 14 patients who completed treatment without adverse effects or complications, most agreed fully that they were satisfied with the therapy (n = 11) and that the drug was not irritating to the mouth (n = 9). Patients are being monitored without clinical signs of recurrence and/or progression of the lesions.

CONCLUSION: Topical application of the drug has provided a convenient and well tolerated in most cases.

CLINICAL RELEVANCE: Diclofenac sodium gel (3%) may be a promising alternative for treatment of actinic cheilitis.

33. Oral Dis. 2018 Oct;24(7):1168-1184. doi: 10.1111/odi.12747. Epub 2017 Sep 25.

Use of antidepressants in dentistry: A systematic review.

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OBJECTIVE: Previous research has suggested that antidepressants can be used in oral health care. The aim of this systematic review was to search for scientific evidence of the efficacy of the use of antidepressants in dentistry.
MATERIALS AND METHODS: The clinical question was as follows (PICO question): dentistry patients (Patients); antidepressants (Intervention); no use or placebo or other drug (Comparison); and efficacy in oral health problems (Outcome). An electronic search was conducted in seven databases, as well as a manual search without restriction regarding language and date of publication. Two independent reviewers selected studies based on eligibility criteria, extracted data and assessed methodological quality based on the PEDro scale. The PROSPERO record is number CRD42016037442.
RESULTS: A total of 15 randomized controlled trials were associated with the use of antidepressants to control chronic or acute pain in dentistry, among other conditions such as bruxism and burning mouth syndrome. The most commonly used drug in clinical trials was amitriptyline (more than 50% of studies).
CONCLUSIONS: Antidepressants may be effective in dentistry for acute and chronic pain, but there is a large amount of methodological heterogeneity among the evaluated studies. In summary, there is rationality for the indication of this class of medicine in dentistry in specific clinical situations.

34. J Endod. 2018 Dec;44(12):1812-1816. doi: 10.1016/j.joen.2018.09.009.

Influence of the Vehicle and Antibiotic Formulation on Cytotoxicity of Triple Antibiotic Paste.

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INTRODUCTION: The aim of this study was to assess the influence of antibiotic formulations (tablet/capsule [TC] or United States Pharmacopeia [USP]-grade antibiotics) and vehicles (water [H2O] or macrogol + propylene glycol [MP]) on the cytotoxicity and pH of triple antibiotic pastes (TAPs).
METHODS: L929 fibroblasts were exposed to TAPs prepared with TC or USP-grade antibiotics mixed with H2O or MP for 72 hours. Each isolated antibiotic with each vehicle, each isolated vehicle, and the culture medium were used as controls. Cytotoxicity was evaluated by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide and neutral red assays. The pH was measured after 3 and 8 hours of immersion of the pastes in water. Data were analyzed using analysis of variance, the Bonferroni or Tukey posttests ($\alpha = 0.05$), and the Pearson correlation test ($\alpha = 0.05$).
RESULTS: The pastes prepared with TC were less cytotoxic than pastes prepared

with USP-grade antibiotics ($P < .05$), and pastes with the MP vehicle were less cytotoxic than pastes with H_2O ($P < .05$). TC TAP + MP showed the lowest cytotoxicity, whereas USP-grade TAP + H_2O showed the highest cytotoxicity ($P < .05$). All TAPs showed a pH ranging from 4.64-5.20. Irrespective of the vehicle, USP-grade TAP showed a lower pH than TC TAP ($P < .05$). TAPs with H_2O had a lower pH than TAPs with MP ($P < .05$).

CONCLUSIONS: The vehicle and the antibiotic formulations influenced the cytotoxicity and pH of TAP. The pastes prepared with TC and MP were less acidic and less cytotoxic than the type prepared with USP-grade antibiotics and H_2O.

35. Head Face Med. 2018 Nov 20;14(1):25. doi: 10.1186/s13005-018-0182-4.

Comparing oral health in patients with different levels of dental anxiety.

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BACKGROUND: Dental Anxiety is still today one of the most common fears and is therefore a great challenge for every dental practitioner. The aim of this study was to identify patients with dental anxiety using the Dental Anxiety Scale and comparing different levels of dental anxiety with oral health using DMF-T and DMF-S index.

METHODS: This study questioned 1549 patients over the course of three years (2002-2005). DAS questionnaires were handed out before treatment and the state of oral health was evaluated using DMF-T and DMF-S.

RESULTS: There is no significant relation between high anxiety and the global DMF-T Score ($p = 0.237$), missing teeth ($p = 0.034$) and filled teeth ($p = 0.237$). There is however a significant increase in destroyed teeth, the higher the level of dental anxiety in the patient ($p < 0.0001$). There is as well a significant relationship between the global DMF-S Score ($p = 0.042$) and dental anxiety. No relationship was found comparing missing surfaces ($p = 0.107$) and filled surfaces ($p = 0.516$) with dental anxiety. Destroyed 16 surfaces are, however, significantly higher in patients with more dental anxiety ($p < 0.0001$). A higher dental anxiety therefore often causes minimalistic dentistry to fail due to more teeth being destroyed.

CONCLUSIONS: Patients with dental anxiety still have a worse oral hygiene than patients without dental anxiety. It is still necessary, in this time of caries prevention rather than over-treatment, to be educated so that patients suffering dental fear receive the right treatment.

36. Prim Dent J. 2018 Sep 1;7(3):38-41.

An Update of Gorlin-Goltz Syndrome.

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Gorlin-Goltz syndrome encompasses a variety of clinical signs and symptoms including important oral manifestations which general dental practitioners should be aware of. In light of the risk of malignancy it is important to be aware of this syndrome and recognise the need for early referral for multidisciplinary management. This paper aims to discuss Gorlin-Goltz syndrome, the pathophysiology of the condition and address the wide range of clinical manifestations. The author will pay particular attention to the oral manifestations of the condition and the management of such anomalies.

37. Braz Oral Res. 2018 Oct 18;32(suppl 1):e70. doi:

10.1590/1807-3107bor-2018.vol32.0070.

Tricalcium silicate-based cements: properties and modifications.

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Mineral trioxide aggregate (MTA) has been widely used for different reparative procedures in endodontics. The extensive use of this cement for pulp capping, apexifications, apical surgeries, and revascularization is related to its ability to induce tissue repair and to stimulate mineralization. Several research studies have tested modifications in the composition of MTA-based cements in order to enhance their clinical performance. Novel formulations have been introduced in the market with the aim of increasing flowability. Important properties such as appropriate radiopacity and setting time, color stability, alkaline pH, release of calcium ions, and biocompatibility have to be considered in these new formulations. The latest research studies on the physical, chemical, and biological properties of tricalcium silicate-based cements are discussed in this critical review.

38. Braz Oral Res. 2018 Oct 18;32(suppl 1):e68. doi: 10.1590/1807-3107bor-2018.vol32.0068.
Endodontic medicine: interrelationships among apical periodontitis, systemic disorders, and tissue responses of dental materials.
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Endodontic medicine, which addresses the bidirectional relationship between endodontic infections and systemic diseases, has gained prominence in the field of endodontics. There is much evidence showing that while systemic disease may influence the pathogenesis of endodontic infection, endodontic infection can also cause systemic alterations. These alterations include more severe bone resorption and inflammation in the periapical area as well as enhanced systemic disease symptoms. Similarly, many reports have described the impact of systemic diseases on the tissue responses to dental materials. Conversely, the local use of dental materials may show systemic effects in the form of altered production of biomarkers. Thus, studies to better understand the mechanisms related to those connections are extremely important. In this context, the objective of this review was to analyze and discuss the current literature regarding the connections among these three factors-systemic diseases, endodontic infection, and endodontic dental materials-and determine how these connections may interfere in the systemic health status and the endodontic treatment outcomes, which are represented by periapical wound healing.

39. Quintessence Int. 2018;49(10):855-861. doi: 10.3290/j.qi.a41204.

Multidisciplinary dentistry for transitional care patients.

Planerova A, Pulcino T, Saunders R.

A growing patient population is adolescents and young adults who have had one or more serious medical problems and are aging into adulthood. This group of patients has unique medical needs, which has resulted in the development of a specialized area of medicine: transitional care medicine. The case reviews of two of these patients are described. Patient 1 was a 23-year-old man with hereditary pancreatitis. His genetic condition resulted in the need for pancreatic splenectomy and removal of part of his small bowel, resulting in insulin-dependent diabetes and malnutrition. These complex clinical issues and the challenges of chronic pain were further complicated by severe anxiety disorder and substance abuse. He presented to the University of Rochester Medical Center's Complex Care Center (CCC), an interdisciplinary clinic that provides care for adults with pediatric onset conditions, staffed with both dentists and physicians, with acute pain from a grossly decayed premolar tooth. His blood glucose measured > 500 mg/dL and he was experiencing an acute episode of anxiety. With the expertise and experience of center staff his care needs could be met. Patient 2 was a 32-year-old woman with chronic juvenile rheumatoid arthritis, drug-associated lupus, and mental health problems including depression. This condition requires her to be managed with broad spectrum immunosuppression to

prevent joint inflammation that results in significant joint destruction and bone loss. She presented to the CCC with an abscessed molar tooth, which prevented her from receiving her required immunotherapy, IV tocilizamab. While monitored by on-site physicians, a center dentist could safely proceed with the extraction. These cases illustrate that, as the population of transitional care patients grows, general dentists can learn to work on-site with physicians and allied health per-sonnel to meet the need.

40. J Dent Child (Chic). 2018 May 15;85(2):51-57.

Clinical Performance of the DentalVibe® Injection System on Pain Perception During Local Anesthesia in Children.

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Purpose: The purpose of this study was to clinically compare injection pain experience in children using three methods.Methods: This was a randomized clinical trial conducted among 150 children (81 girls, 69 boys), from seven to 14 years of age, who required operative dental treatment. Fifty patients were randomized into one of three groups: DentalVibe®, manual stimulation, or no stimulation (control). During the injection, the pulse rate and perceived pain, using the Wong Baker FACES Pain Rating Scale were recorded. Generalized linear models were used to analyze the data.Results: We found a statistically significant decrease in the FACES score in the DentalVibe® group compared to the control group and the manual stimulation group (P<0.001). Injection type (mandibular inferior alveolar block/long buccal injections versus maxillary infiltration injections) did not differ statistically in pain perception. The heart rate in the DentalVibe® group showed no significant difference compared to the other groups at all time points. Conclusion: The DentalVibe® may reduce pain for pediatric patients receiving dental injections.

41. J Oral Rehabil. 2019 Jan;46(1):23-32. doi: 10.1111/joor.12724. Epub 2018 Oct 23.

Orofacial pain and its potential oral causes in older people with mild cognitive impairment or dementia.

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BACKGROUND: The number of people with dementia and natural dentition is growing. As dementia progresses, the degree of self-care decreases and the risk of oral health problems and orofacial pain increases.

OBJECTIVES: To examine and compare the presence of orofacial pain and its potential causes in older people with Mild Cognitive Impairment (MCI) or dementia.

METHODS: In this cross-sectional observational study, the presence of orofacial pain and its potential causes was studied in 348 participants with MCI or

dementia with all levels of cognitive impairment in two outpatient memory clinics and ten nursing homes.
RESULTS: Orofacial pain was reported by 25.7% of the 179 participants who were considered to present a reliable pain self-report (Mini-Mental State Examination score ≥14 points), while it could not be determined in people with more severe cognitive impairment. The oral health examination of the 348 participants indicated that potential painful conditions, such as coronal caries, root caries, tooth root remnants or ulcers were present in 50.3%. There was a significant correlation between the level of cognitive impairment and the number of teeth, $r = 0.185$, $P = 0.003$, teeth with coronal caries, $r = -0.238$, $P < 0.001$, and the number of tooth root remnants, $r = -0.229$, $P = 0.004$, after adjusting for age.
CONCLUSIONS: This study indicated that orofacial pain and its potential causes were frequently present in participants with MCI or dementia. Therefore, a regular oral examination by (oral) healthcare providers in people with MCI or dementia remains imperative, even if no pain is reported.

42. J Investig Clin Dent. 2018 Nov;9(4):e12363. doi: 10.1111/jicd.12363. Epub 2018 Oct 1.
Psychological disorders and oral lichen planus: A systematic review.

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The aim of the present study was to identify and analyze scientific evidence available in the literature to answer the following question: Are psychological disorders associated with the development of oral lichen planus (OLP)? Using scientific databases (PubMed, LILACS, and Science Direct), a literature search was conducted between December 2016 and January 2017, using previously selected keywords. Two independent reviewers critically assessed the results in three stages, strictly obeying the inclusion and exclusion criteria defined in the study protocol. We assessed paper quality based on STROBE (Strengthening The Reporting of Observational studies in Epidemiology). After analysis, we selected 14 papers, of which 10 showed evidence of association between psychological disorders (in particular, stress, anxiety, and depression) and the development of OLP. The paper-quality assessment by means of STROBE showed that 13 papers presented intermediate quality and one paper presented high quality. In the present systematic review, we found an association between psychological disorders and the development of OLP.

43. Spec Care Dentist. 2018 Nov;38(6):391-394. doi: 10.1111/scd.12324. Epub 2018 Sep 26.

Oral hygiene and dentition status in children and adults with hemophilia: A case-control study.

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BACKGROUND & OBJECTIVES: People with hemophilia constitute a significant proportion of the population and an oral health care professional faces a considerable challenge while treating them. This study aimed to assess the oral health and dentition status as well as fear of dental treatment in patients with hemophilia and compare it with age-matched healthy subjects.

PATIENTS & METHODS: This single-center, case-control cross-sectional study was performed on 100 subjects with hemophilia and 100 age-matched healthy controls. Oral health and dentition status was recorded for all the subjects and scored using the simplified oral hygiene index (OHI-S), plaque index, and the dmft/DMFT index.

RESULTS: There were a total of 41 children and 59 adults in the hemophilia group and 36 children and 64 adults in the healthy group. When compared to healthy subjects it was observed that individuals with hemophilia had higher debris and calculus scores which was indicative of poor orodental status. There was no significant difference observed in the DMFT scores among the study groups.

INTERPRETATION & CONCLUSIONS: The oral hygiene of the hemophilics was poorer when

compared to the healthy controls. The findings highlight the need for

establishing interdisciplinary care for such individuals.

44. J Oral Rehabil. 2019 Jan;46(1):65-75. doi: 10.1111/joor.12721. Epub 2018 Oct 21.

Non-carious cervical lesions and risk factors: A case-control study.

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OBJECTIVES: To evaluate whether the presence of non-carious cervical lesions (NCCLs) was related to the considered risk factors and to show the corresponding odds ratio in a predictive model.
METHODS: The sample was 280 dentistry students. In an initial clinical examination, 140 cases were selected that presented one or more teeth with non-carious cervical wear. For each case, a similar sex and age control without any tooth with non-carious cervical lesions was selected. An occlusal examination and periodontal probing were performed in all cases and controls by skilled dentists. All the subjects answered a questionnaire referring to factors of brushing, bruxism, preferred chewing side, consumption of extrinsic acids and the presence of intrinsic acids. Data were analysed by means of univariate and

multivariate logistic regression.
RESULTS: Of all the study variables, only the protrusion interferences, interferences on the non-working side, the brushing force, CPITN value and the consumption of salads increase the risk of NCCLs in the univariate regression. The best predictive model was formed by the combination of CPITN variables >1, the consumption of acidic salads, self-reported bruxism, brushing force and attrition. However, it only correctly classifies 68.75% of subjects.
CONCLUSIONS: This study supports the multifactorial aetiology of NCCLs, the combination of several factors being necessary to explain their presence. The risk factors that make up the predictive model are not sufficient to explain the appearance of NCCLs. Dentists should take into account all these risk factors in prevention, diagnosis and treatment.

45. J Investig Clin Dent. 2018 Nov;9(4):e12361. doi: 10.1111/jicd.12361. Epub 2018 Sep 9.

Efficacy of adjunctive low-level laser therapy in the treatment of aggressive periodontitis: A systematic review.

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The aim of the present study was to systematically review the efficacy of low-level laser therapy (LLLT) as an adjunct to scaling and root planing (SRP) vs

SRP alone in the treatment of aggressive periodontitis (AgP). The addressed PICO (Population, Interventions, Comparisons and Outcomes) question was: Is LLLT as an adjunct to SRP effective in the treatment of AgP? Electronic databases, including MEDLINE via PubMed, Cochrane Central Register of Controlled Trials and Cochrane Oral Health Group Trials, and EMBASE, were searched until March 2018. Four clinical studies were included. Three studies showed significant improvement in periodontal outcomes among LLLT group compared to SRP alone, whereas only one study showed comparable periodontal outcomes between the adjunctive LLLT and SRP groups at follow up. The overall mean difference for clinical attachment level gain (weighted mean difference [WMD] = -1.69, 95% confidence interval [CI] = -3.46 to 0.07, P < 0.061) was not significant. However, significant difference for probing depth reduction (WMD = -0.95, 95% CI = -1.66 to 0.23, P = 0.009) was noticed between groups at follow up. Whether LLLT as an adjunct to SRP is more effective than SRP alone in the treatment of AgP remains debatable. Further randomized, clinical trials are required with long follow-up periods and standard laser parameters to reach a strong conclusion.

46. Dent Traumatol. 2018 Dec;34(6):384-393. doi: 10.1111/edt.12437. Epub 2018 Oct 21.

Evaluation of periodontal ligament cell viability in different storage media based on human PDL cell culture experiments-A systematic review.

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BACKGROUND/AIMS: The best treatment for an avulsed tooth is immediate replantation. If this is not possible, a proper transport medium is required for the maintenance of viability of the periodontal ligament cells (PDL). The aim was to systematically review the efficacy of different storage media used for the survival of PDL cells of avulsed teeth in the in vitro setting.
METHODS: The search strategy was based on the MeSH keywords in PubMed/MEDLINE:
"Transport media for avulsed teeth," "Storage media for avulsed teeth," "Knocked out teeth," "Tooth avulsion," "Biological transport of avulsed tooth," "Cell survival of avulsed tooth," "Cell viability of avulsed tooth," "Tooth replantation," and "Periodontal ligament in avulsed teeth." The "AND" and "OR" Boolean operators were applied to combine keywords. Each study was evaluated for eight criteria, including use of human PDL, in vitro cell culture models, the number of passages, types of storage media, percentages of surviving PDL cells, pH and osmolality of storage media, and the type of test used to asses PDL viability.
RESULTS: In 15 selected studies, nine storage media (HBSS, tap water, DMEM, milk, saliva, 10% and 20% propolis, Gatorade, and Viaspan) were analyzed at six time

points. For storage up to 2 hours, HBSS, DMEM, milk, 10% propolis, 20% propolis, and Viaspan conserved more than 80% of PDL viability. For storage at 24 hours, Viaspan showed best cell survival at 88.4%, followed by DMEM (70.9%) and 10% propolis (68.3%). Milk and HBSS showed similar PDL survival at 24 hours (57.2% and 57.3%, respectively).
CONCLUSIONS: Milk remains the most convenient, cheapest, and readily available solution in most situations while also being capable of keeping PDL cells alive. Further studies are required to evaluate the efficacy of more commonly found storage media besides milk.

47. Clin Oral Investig. 2018 Nov;22(8):2685-2702. doi: 10.1007/s00784-018-2611-y. Epub 2018 Sep 6.
Is depression associated with oral health outcomes in adults and elders? A systematic review and meta-analysis.

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OBJECTIVES: To systematically review the literature in order to investigate association between depression and oral diseases.
MATERIAL AND METHODS: Electronic searches were performed in five databases.

Studies testing associations between depression and oral diseases as either exposure or outcome were included. Oral disease variable included any tooth loss or edentulism, periodontal disease, and dental caries.
RESULTS: A total of 2504 articles were identified in the electronic database search. Sixteen studies were included in this systematic review being 14 included in the meta-analyses. Eleven studies considered oral health as outcome, whereas three studies considered depression as an outcome variable. Depression was associated to dental caries, tooth loss, and edentulism. Pooled estimates showed that depression increased the odds of dental caries (OR 1.27; 95% CI 1.13-1.44), tooth loss (OR 1.31; 95% CI 1.24-1.37), and edentulism (OR 1.17; 95% CI 1.02-1.34), respectively. When the oral diseases were tested as independent variable and depression as outcome, associations with both edentulism (OR 1.28; 95% CI 1.06-1.55) and periodontal disease (HR 1.73; 95% CI 1.58-1.89) were found.
CONCLUSIONS: The results of our systematic review and meta-analyses show a positive association between depression and oral diseases, specifically dental caries, tooth loss, and edentulism, in adults and elders. More longitudinal studies are required to test causal and temporal relationship between depression and oral health status.
CLINICAL RELEVANCE: Mental and oral health are among the main disabilities worldwide. This article helps to understand more about the relationship between both conditions, highlighting the importance for both clinicians and policy makers of considering individual's psychological status in management of oral health.

48. Dent Clin North Am. 2018 Oct;62(4):585-596. doi: 10.1016/j.cden.2018.05.006. Epub

2018 Jul 27.

Burning Mouth Syndrome.

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Burning mouth syndrome (BMS) is a chronic disorder for which a definitive etiopathology is not known. The BMS patient often experiences a continuous burning pain in the mouth without any clinical signs. This confusing condition can create frustration for both patient and practitioner. Ultimately, it is important for the practitioner who treats head and face pain to become knowledgeable in the recognition of the many complexities and various presentations associated with BMS. In doing so, the practitioner can be better prepared to help patients cope with this confounding disorder and gain a better quality of life.

49. Dent Clin North Am. 2018 Oct;62(4):511-523. doi: 10.1016/j.cden.2018.05.001. Epub

2018 Jul 27.

An Introduction to Orofacial Pain.

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The assessment, diagnosis, and management of orofacial pain (OFP) disorders is often a complex, multifactorial, and multidisciplinary process. Nociception leads to the perception of pain, causing the personal experience of suffering, which results in pain behavior. Many patients present with various comorbidities that may influence these conditions in a multitude of ways. The clinical presentation of OFP often includes biological, psychological, social, behavioral, and belief system components.

50. Gen Dent. 2018 Sep-Oct;66(5):61-68.
Combating antibiotic resistance: a survey on the antibiotic-prescribing habits of dentists.
Tomczyk S, Whitten T, Holzbauer SM, Lynfield R.

Adherence to clinical guidelines is recommended to promote appropriate antibiotic use in dentistry and address concerns about increasing antibiotic resistance. Guidelines for antibiotic prophylaxis before invasive dental procedures were updated in 2007 and 2015. In an effort to inform antibiotic stewardship efforts, a study was undertaken to assess the knowledge of antibiotic usage guidelines and antibiotic-prescribing practices among Minnesota dentists. During September 2015, a 22-question online survey was sent to the state dental association membership. Among 437 respondents, dentists reported a median of 4 antibiotic prophylaxis and 5 treatment prescriptions per month. Dentists reported prescribing antibiotics for prophylaxis before invasive dental procedures for patients with "high-risk conditions" (84%) and localized swelling (70%) as well as for a number of reasons that are not recommended by current guidelines, such as an upcoming vacation for

the patient (38%), gingival pain (38%), legal concerns (24%), patient demand (22%), and failed local anesthesia (21%). Dentists defined high-risk conditions as a history of infective endocarditis (75%), prosthetic cardiac valve (70%), selected congenital heart disease (68%), cardiac transplantation with cardiac valvulopathy (4%), and primary care physician recommendation (59%). In addition, some dentists assigned a high-risk category to conditions that do not fall within current guideline recommendations, including prosthetic joints (39%), poorly controlled type 2 diabetes (27%), human immunodeficiency virus (18%), chronic kidney disease (13%), mitral valve prolapse (11%), all congenital heart disease (4%), and well-controlled type 2 diabetes (1%). Respondents indicated that common challenges to stewardship of antibiotic use included perceived conflicting provider guidelines (44%), conflicting scientific evidence (44%), or lack of information on antibiotic selection (19%) or risks (23%). Dentists reported greater antibiotic use than currently recommended by existing guidelines. Antibiotic stewardship efforts in dentistry should address challenges to guideline adherence.

51. Gen Dent. 2018 Sep-Oct;66(5):46-51.
The erosive potential of additive artificial flavoring in bottled water.
Nguyen Ngoc C, Ghuman T, Ahmed SN, Donovan TE.

Acidic beverage consumption is a well-recognized contributor to extrinsic dental erosion. Although the pH values of some commercially available bottled waters are below neutral pH, water is still considered to be a safe and healthy choice. Artificial flavoring liquids or powders, known as water enhancers (WEs), have

been introduced to the market to modify the taste of water. The purposes of the present study were to measure the pH and titratable acidity of WEs and to perform gravimetric analysis of teeth immersed in solutions of WEs mixed with different brands of bottled water in order to determine the erosive potential in vitro. The pH and titratable acidity using 0.1M sodium hydroxide were calculated for 7 brands of WEs added to 3 brands of bottled water, which had different initial pH values. Extracted human molar teeth were submerged in each combination of solutions for gravimetric analysis. Distilled water was used as the positive control and citric acid as the negative control. Data were analyzed with 2-way analysis of variance and post hoc Tukey-Kramer testing (P = 0.05). The pH value (2.9-3.0) and titratable acidity (32.2-35.3 mmol/L hydroxide) of all of the experimental solutions were considered acidic, regardless of the WE brand. Average tooth structure loss after 1 month of immersion in the solutions was 4%, and surface changes were consistent with erosive dissolution. The results showed that adding a WE to water significantly increases the potential for dental erosion. The high content of citric acid in WEs is believed to be the cause. Patients should be advised to use WEs with caution.

52. Int J Prosthodont. 2018 Sep/Oct;31(5):481-484. doi: 10.11607/ijp.5803.

Effect of Over-the-Counter Topical Agents on Denture-Induced Traumatic Lesions: A Clinical Study.

Bural C, Güven MÇ, Kayacıoğlu B, Ak G, Bayraktar G, Bilhan H.

PURPOSE: To investigate the effects of over-the-counter products on the healing

of denture-induced ulcerations and patients' self-reported pain.
MATERIALS AND METHODS: A total of 140 patients with acute denture-induced ulcerations were randomized into seven treatment groups: denture grinding (control); topical application of corn oil gel (placebo); triester glycerol oxide gel; D-panthenol gel; D-panthenol mouthwash; L-arginine mouthwash; and hyaluronic acid gel. Healing and self-reported pain were assessed after 1, 3, and 7 days of treatment.
RESULTS: The percentage of healed lesions in the mandible and maxilla after 7 days was 67% and 65%, respectively. The only significance in healing was for mandibular lesions at 3 days after application of L-arginine mouthwash; at this period, the healing rate was significantly higher than d-panthenol gel, d-panthenol mouthwash, and hyaluronic acid gel ($P < .05$).
CONCLUSION: Denture grinding as the current protocol for acute denture-induced ulcerations should remain as the default.

53. Oral Health Prev Dent. 2018;16(4):345-350. doi: 10.3290/j.ohpd.a40938.

Effectiveness of Vanish XT in Reducing the Development of White Spot Lesions: An In Vitro Study.
Wiewiora C, Armbruster P, Lallier T, Ballard R.

PURPOSE: To evaluate the effectiveness of Vanish XT in preventing white spot lesions (WSLs) when placed around orthodontic brackets. The efficacy of Vanish XT was compared with that of Pro Seal, a commercially available product already proven in preventing demineralization.

MATERIALS AND METHODS: Sixty extracted human canine teeth were divided into three

groups (n = 20). The two experimental groups were treated with either Vanish XT or Pro Seal. A third group received no treatment (control). Ethidium bromide with DNA was added to and mixed with the products to produce fluorescence to verify retention of the experimental products. The teeth were submersed in a lactic acid solution for 32 days to create WSLs. All sample teeth were brushed twice daily with a non-fluoride toothpaste to evaluate retention of the experimental products. Photos were taken under fluorescence microscopy and white light at three time intervals. Demineralization was quantified utilizing computer software, and photos were analyzed to obtain values for percent surface area of demineralization and surface color change.

RESULTS: Percent surface area of WSL data, both under white light conditions and fluorometric analysis, revealed a significant difference between Pro Seal and Vanish XT when compared with the control group. No significant differences were found between Pro Seal and Vanish XT treated teeth. Fluorescence evaluation revealed that both experimental products were largely removed by 32 days of brushing and acid exposure.

CONCLUSION: Vanish XT is effective in preventing demineralization around orthodontic brackets. Its preventive efficacy is equivalent to that of Pro Seal.

54. J Endod. 2018 Oct;44(10):1462-1466. doi: 10.1016/j.joen.2018.07.010. Epub 2018 Aug 31.

Success Rate of 3 Injection Methods with Articaine for Mandibular First Molars with Symptomatic Irreversible Pulpitis: A CONSORT Randomized Double-blind Clinical Trial.

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INTRODUCTION: Previous studies have reported that it is difficult to obtain proper anesthesia in mandibular molars with symptomatic irreversible pulpitis, and supplemental injections are usually unavoidable. The aim of the present study was to determine the anesthetic efficacy of articaine in mandibular first molars with symptomatic irreversible pulpitis with 3 injection methods: an inferior alveolar nerve block (IANB), an IANB with an intraligamentary injection, and an IANB with buccal infiltration before initiating the endodontic treatment.

METHODS: Ninety-six patients (54 women and 42 men) with a diagnosis of symptomatic irreversible pulpitis in mandibular first molars were selected and randomly assigned into 3 groups (n = 32) according to the injection method as follows: group 1, a conventional IANB injection; group 2, an IANB injection, and after profound lip numbness after the IANB (after 15 minutes), buccal infiltration was administered; and group 3, an IANB injection, and after profound

lip numbness after the IANB (after 15 minutes), an intraligamentary injection was performed, and after 20 minutes from the IANB, the endodontic treatment was initiated. The anesthetic solution was articaine 4% with 1:100,000 epinephrine. Success was defined as no or mild pain on the basis of the visual analog scale recording upon access cavity preparation or initial instrumentation. Data were statistically analyzed using the chi-square and Mann-Whitney U tests, and $P < .05$ was set as significant.

RESULTS: The success rate for IANBs with an intraligamentary injection was 75%, and for IANBs with a buccal injection, it was 65.6%. For IANBs alone, the success rate was 28.1%.

CONCLUSIONS: Considering the limitations of the present study, in can be concluded that the success rate of IANBs increased with intraligamentary injections and buccal infiltrations with articaine that were performed before initiating treatment. Also, none of the injection methods showed complete success in anesthesia in all patients.

55. Arch Oral Biol. 2018 Dec;96:26-32. doi: 10.1016/j.archoralbio.2018.08.014. Epub 2018 Aug 24.

Non-syndromic tooth agenesis patterns and their association with other dental anomalies: A retrospective study.

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OBJECTIVE: This study aimed to investigate the prevalence and the factors associated with non-syndromic tooth agenesis, besides identifying its pattern of occurrence.
STUDY DESIGN: Pre-orthodontic exams of 3400 subjects, aged 8-30 years, were selected from a radiographic center in Brazil. Panoramic and periapical radiographs were analyzed to verify the presence of tooth agenesis and other six dental anomalies. Descriptive statistics were calculated using the Tooth Agenesis Code tool and, to evaluate significant associations, a negative binomial regression model was constructed. Besides, unadjusted and adjusted prevalence ratios (PR) were calculated for the bivariate and the multivariate analysis.

RESULTS: Prevalence of tooth agenesis was 3.0% (n = 68) and 41 different phenotypic patterns were observed. Teeth most often symmetrically missing were maxillary lateral incisors (13.2%) and mandibular second premolars (8.8%). Females (PR = 3.49, CI 95% = 1.96-6.19) presented more tooth agenesis. Other dental anomalies, such as palatal displacement of maxillary canine and infraocclusion of primary molar were significantly more frequent ($p < 0.001$) in subjects with agenesis.

CONCLUSION: There was a strong relationship between tooth agenesis and gender and the association with other dental anomalies was significant, with the exception of the supernumerary teeth, which seems to be independent.

56. Spec Care Dentist. 2018 Nov;38(6):373-381. doi: 10.1111/scd.12319. Epub 2018 Sep 1.

Systemic medical conditions and periodontal status in older individuals.

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AIMS: The purposes of this study are to: (1) assess the prevalence of systemic and periodontal disease in older individuals, (2) compare periodontal conditions between four age cohorts, and (3) investigate the relationship between periodontal disease and systemic medical conditions.

METHODS: Electronic records from a total of 5,000 adults were randomly selected

from the University of Minnesota School of Dentistry database. Individuals ≥60 years of age, with at least six remaining teeth in their dentition with a complete medical history and full-mouth series of radiographs were included in the study to determine the severity of periodontal disease based on the percentage of radiographic bone loss.
RESULTS: A total of 2,163 patients were included in the final analysis. The multivariable regression analysis showed that patients self-reported tobacco use and diabetes were significantly associated with moderate and severe bone loss than none to mild, whereas the opposite was found for those with joint replacement, past use of steroids and acid reflux/GERD.
CONCLUSION: A number of systemic medical conditions and tobacco use are associated with periodontitis. This reflects the importance of an interdisciplinary interaction between dental and medical professionals.

57. Med Oral Patol Oral Cir Bucal. 2018 Sep 1;23(5):e545-e551. doi: 10.4317/medoral.22545.
Tooth loss in Sjögren's syndrome patients compared to age and gender matched controls.
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BACKGROUND: To analyze the prevalence and location of tooth loss in Sjögren's syndrome (SS) patients and compare them with an age- and gender-matched control group.

MATERIAL AND METHODS: Dental charts and x-rays of 108 (SS) patients were retrieved from an academic dental center and special care dentistry department. For each SS patient, an age- and gender-matched non-SS patient was randomly selected. Medication, number of extractions and date and location of extractions were assessed. Differences between SS and non-SS patients were analyzed using Mann-Whitney U tests, Chi-square tests and Fisher's exact tests.

RESULTS: Significantly more SS patients were edentulous compared to the non-SS group (14.8% versus 1.9%, $p = 0.001$). SS patients had a 61% higher risk to have experienced one or more extractions than control patients. In the SS group, there was a non-significant tendency for more maxillary teeth to have been extracted than mandibular teeth (42:34). In the control group, the number of extractions in the maxilla and mandible were comparable (21:20). When divided into sextants, the number of SS patients with one or more extractions was significantly higher than for non-SS patients for each sextant ($p = 0.001$ to $p = 0.032$). The largest difference in the proportion of patients with one or more extractions between the SS and non-SS patients occurred in the upper anterior sextant (3.4 times more frequent).

CONCLUSIONS: SS patients are more prone to experience dental extractions compared

to patients without SS. It could be speculated that this is related to a decreased salivary secretion.

58. J Endod. 2018 Oct;44(10):1474-1479. doi: 10.1016/j.joen.2018.07.001. Epub 2018 Aug 23.

Infection Control in Teeth with Apical Periodontitis Using a Triple Antibiotic Solution or Calcium Hydroxide with Chlorhexidine: A Randomized Clinical Trial.

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INTRODUCTION: This randomized clinical study compared the antibacterial effectiveness of treatment protocols using either a triple antibiotic solution (1 mg/mL) or calcium hydroxide/chlorhexidine paste as interappointment medication in infected canals of teeth with primary apical periodontitis.
METHODS: The root canals of single-rooted teeth with apical periodontitis were prepared by using a reciprocating single-instrument technique with 2.5% sodium hypochlorite irrigation and then medicated for 1 week with either a triple

antibiotic solution (minocycline, metronidazole, and ciprofloxacin) at 1 mg/mL (n = 24) or a calcium hydroxide paste in 2% chlorhexidine gluconate (n = 23). Samples were taken from the canal at the baseline (S1), after chemomechanical preparation (S2), and after intracanal medication (S3). DNA extracts from clinical samples were evaluated for total bacterial reduction using a 16S ribosomal RNA gene-based quantitative polymerase chain reaction assay.
RESULTS: All S1 samples were positive for the presence of bacteria, and counts were substantially reduced after treatment procedures ($P < .01$). Bacterial levels in S2 and S3 samples did not significantly differ between groups ($P > .05$). S2 to S3 reduction was 97% in the antibiotic group and 39% in the calcium hydroxide/chlorhexidine group; only the former reached statistical significance ($P < .01$). There were significantly more quantitative polymerase chain reaction-negative S3 samples in the antibiotic group than in the calcium hydroxide group ($P < .05$).
CONCLUSIONS: Interappointment medication with a triple antibiotic solution at the concentration of 1 mg/mL significantly improved root canal disinfection, and its effects were at least comparable with the calcium hydroxide/chlorhexidine paste. Effectiveness and easy delivery of the antibiotic solution make it an appropriate medicament as part of a disinfecting protocol for conventional nonsurgical endodontic treatment and possibly regenerative endodontic procedures.

59. J Dent Hyg. 2018 Aug;92(4):27-34.

Effectiveness of an Educational Module on Dental Hygiene Students' Attitudes Towards Persons with Disabilities.

Jones DM, Miller SR.

Purpose: Persons with disabilities (PWDs) perceive gaps in health care providers' understanding of their health care needs are more likely to delay or not seek health care as compared to persons without disabilities. Oral health is considered an essential component of overall health, however, disparities exist in the United States, especially for persons with disabilities. Improving the education and training of dentists and dental hygienists may contribute to reducing oral health care barriers for PWDs. The purpose of this study was to investigate whether offering an education module about individuals with disabilities would change dental hygiene students' attitudes and capacity for informed empathy for PWDs.Methods: An educational module utilizing a DVD featuring authentic representation of PWDs, along with student discussions and self-reflection was developed and delivered to 165 (n=165) dental hygiene students attending a 2-year community college and a 4-year university. Students consenting to participate in the study were assessed regarding their attitudes and comfort towards caring for PWDs prior to, and following the educational module. Pre- and post-assessment measures included the validated Attitude Toward Disabled Persons, and Attitudes toward Patient Advocacy Microsocial (AMIA) scale. The Interpersonal Reactivity Index (IRI) was used as a pre-assessment measure.Results: A total of 58 (n=58) dental hygiene students, 35 (n=35) from a 4-year university and 23 (n=23) from a 2-year community college, consented for

this study, for an overall participation rate of 35%. Scores increased significantly for both student groups after delivering the education module on the AMIA patient advocacy scale. Differences in IRI scores between the 2-year and 4-year dental hygiene programs approached statistical significance.Conclusion: An education module based on informed empathy with a focus on the experiences of PWDs can result in improved attitudes toward advocacy for this population.

60. Dent Traumatol. 2018 Dec;34(6):401-405. doi: 10.1111/edt.12433. Epub 2018 Oct 16.

Frequency of crown and root dilaceration of permanent incisors after dental trauma to their predecessor teeth.

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BACKGROUND/AIMS: Dental trauma to the predecessor teeth can cause crown and root dilacerations to the successor teeth, which can interfere with the normal development of permanent teeth. The aims of this study were to verify the types

of trauma more frequent to the predecessor teeth that cause dilaceration to their successor teeth, to determine the frequency of crown and root dilacerations in permanent incisors, taking into account the child's age at the time of trauma, and to describe the types of treatment performed.
MATERIALS AND METHODS: Details of 815 anterior primary teeth with dental injury were obtained from 483 dental records of children aged 0-9 years at the time of trauma.
RESULTS: Of 815 traumatized primary teeth, 161 successor teeth were clinically and radiographically reviewed until complete eruption and had some type of sequel. Avulsion and intrusive luxation were the most frequent types of trauma to the predecessor teeth that caused dilaceration to their successor teeth. Enamel discoloration (30.4%), hypoplasia (23.6%), root (14.3%) and crown (9.9%) dilacerations were the most common sequelae observed in the successor teeth. Root and crown dilacerations were more frequent in children aged more than and up to 3 years, respectively. Tooth extraction and orthodontic treatment were the most common treatments.
CONCLUSIONS: Dentists must be aware of the relationship between the child's age at the time of trauma to the predecessor tooth and the type of sequel to the successor tooth in order to diagnose, monitor, and treat the sequel properly.

61. Dent Traumatol. 2018 Dec;34(6):429-437. doi: 10.1111/edt.12432. Epub 2018 Sep 21.

Influence of custom-made and stock mouthguard thickness on biomechanical response to a simulated impact.

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BACKGROUND/AIMS: Mouthguards (MGs) are devices that can reduce the risks of facial trauma. However, the large variety of MG types and thicknesses raises the question of which type is the most effective and beneficial for the athletes. The aim of this study was to evaluate stress distribution in the skull, teeth, and jaws as a consequence of a direct impact.

MATERIAL AND METHODS: Using modeling software, a human skull was modeled and a human jaw was created with all teeth inserted into the respective alveolus. The models were divided according to the MG type (custom-made or stock) and thickness (1, 2, and 4 mm). Two models without MG were evaluated with and without teeth contact. The geometries were exported to analysis software and the materials were considered ideal. Fixation occurred at the base of the foramen magnum. The load (500 N) was applied on the canine tooth with a ball. Maximum principal (MPa) and Von-Mises results were obtained.

RESULTS: Without any protection, the generated tensile stress was of greater magnitude causing more damage in the absence of teeth contact. The presence of a MG significantly reduced the generated stress in all structures, and the customized/individualized type was more efficient than stock MGs.

CONCLUSIONS: In extreme situations when it is impossible to use a MG, keeping the

teeth in maximum intercuspal position is less harmful. Despite this, the use of any MG is beneficial and assists in dampening the generated stress. The thicker the device, the greater the capacity for decreasing the damage in all structures. The use of individual protectors for each patient is even more beneficial for preventing trauma during at-risk activities of impact.

62. Community Dent Health. 2018 Aug 30;35(3):179-185. doi: 10.1922/CDH_4304Weiner07.

Depressive symptoms and untreated coronal dental caries among adults ages 21-64 years, NHANES 2013-2014.

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BACKGROUND: Depression has been linked to poor oral health among patients seeking

dental care. However, systematic research on the relationship between depressive symptoms and oral health is limited.

OBJECTIVE: To examine the association of depressive symptoms with untreated dental caries among adults aged 21-64 years.

BASIC RESEARCH DESIGN: Cross-sectional secondary analysis.

SETTING: The data were extracted national data collected in the United States (2013-2014 National Health Nutrition and Examination Survey).

PARTICIPANTS: The sample consisted of 3,127 non-institutionalized civilians.

MAIN OUTCOME MEASURE: Untreated coronal dental caries (yes, no) was the key outcome variable. Depressive symptom categories (none, moderate, and severe) were derived from the Patient Health Questionnaire-9 Depression Scale.

RESULTS: In the study sample, 33.4% of adults had untreated coronal dental caries. Most participants (77.9%) did not report depressive symptoms; 13.9% had mild and 8.2% had moderate or severe depressive symptoms. In unadjusted analyses, individuals with mild (Odds Ratio = 1.62 [95% CI: 1.26, 2.08] and moderate/severe depressive symptoms (Odds Ratio = 2.70 [95% CI: 1.81, 4.02]) were more likely to have untreated coronal caries as compared with individuals without depressive symptoms. When sex, race, age, education, family income-to-poverty ratio, dental visits, history of previous dental restorations, health insurance, and smoking were included into the model, the associations were no longer statistically significant (1.27 [95% CI: 0.96, 1.69] and 1.61 [95% CI: 0.95, 2.73], respectively).

CONCLUSION: The relationship between depressive symptoms and untreated coronal dental caries failed to remain significant after the addition of tobacco usage in the analysis.

63. Braz Oral Res. 2018 Aug 6;32:e81. doi: 10.1590/1807-3107bor-2018.vol32.0081.

Periodontal parameters in prediabetes, type 2 diabetes mellitus, and non-diabetic patients.

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The aim of the present study was to compare the clinical and radiographic periodontal parameters in prediabetes, type 2 diabetes mellitus (T2DM), and non-diabetic patients. Forty-one patients with prediabetes (Group 1), 43 patients with T2DM (Group 2), and 41 controls (Group 3) were included. Demographic data

were recorded using a questionnaire. Full-mouth clinical (plaque index [PI], bleeding on probing [BOP], probing depth [PD], clinical attachment loss [CAL], missing teeth [MT]) and radiographic (marginal bone loss [MBL]) parameters were measured on digital radiographs. In all groups, hemoglobin A1c (HbA1c) levels were also measured. P values less than 0.05 were considered statistically significant. The mean age and HbA1c levels of participants in Groups 1, 2, and 3 were 53.4±3.5, 60.1 ± 0.6, and 56.6 ± 2.5 years and 6.1%, 8.4%, and 4.8%, respectively. The mean duration of prediabetes and T2DM in patients from Groups 1 and 2 were 1.9 ± 0.3 and 3.1 ± 0.5 years, respectively. PI, BOP, PD, MT, CAL, and MBL were significantly higher in Groups 1 ($p < 0.05$) and 2 ($p < 0.05$) than in Group 3. There was no statistically significant difference in these parameters in Groups 1 and 2. Periodontal parameters were worse between prediabetes and T2DM patients compared with controls; however, these parameters were comparable between prediabetes and T2DM patients.

64. J Clin Pediatr Dent. 2018;42(6):442-444. doi: 10.17796/1053-4625-42.6.6. Epub 2018 Aug 7.

Human Primary Tooth Histology Six Months after Treatment with Silver Diamine Fluoride.

Bimstein E, Damm D.

OBJECTIVE: To describe the histological characteristics of a human primary tooth with deep caries next to the dental pulp 6 months after being treated with silver

diamine fluoride (SDF).
STUDY DESIGN: A tooth that was considered to be not restorable 6 months after being treated with SDF was examined with light microscopy.
RESULTS: the histologic examination revealed no carious pulp exposure, tertiary dentin, a flattened odontoblastic layer adjacent to irregular tertiary dentin, dentinal tubules with silver deposits to a depth of 1 mm and no bacteria, and a pulp with no significant inflammation.
CONCLUSIONS: The use of silver diamine fluoride as an interim treatment of deep caries on vital carious primary teeth of children, leads to histologic changes that prevent pain and pulp deterioration, and most likely facilitate pulp healing. These unique findings expand the knowledge about the effect of SDF on the human dental tissues.

65. Int J Dent Hyg. 2018 Nov;16(4):519-526. doi: 10.1111/idh.12358. Epub 2018 Jul 25.

Dry brushing: Does it improve plaque removal? A secondary analysis.
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OBJECTIVE: This article is a secondary analysis comparing the effects on plaque removal of brushing with a dry toothbrush and brushing with a prewetted toothbrush.

METHODS: The participants had been included in two previous experiments involving single-brushing exercises. The 46 non-dental participants were systemically healthy and ≥18 years of age. In the first experiment, the control intervention was brushing with a prewetted toothbrush, while during the second experiment it was brushing with a dry toothbrush. Both experiments scored plaque before and after the brushing exercises and assessed participants' perception. The data of these two previous experiments were compared in this secondary analysis.
RESULTS: Plaque score reduction following brushing with a dry toothbrush was 58%, while with a prewetted toothbrush, it was 57%. The mean plaque index score reduction of 0.08 between a dry and a prewetted toothbrush was not significant (P = .096). Prewetting the participants' toothbrush had no influence on the perception of toothbrush filament stiffness (P = .410) nor on the perception of cleaning capability (P = .449). In both experiments, brushing without dentifrice was judged to be unpleasant.
CONCLUSION: On average, following a 2-minute brushing exercise, plaque scored were reduced by 57% or more. Dry brushing did not contribute significantly to toothbrush efficacy. The participants did not find that prewetting a toothbrush influenced the cleaning capability and filament stiffness.

66. Spec Care Dentist. 2018 Sep;38(5):328-333. doi: 10.1111/scd.12317. Epub 2018 Jul 25.

Neurofibromatosis type II dental management, case report, and review of the literature.

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A 30-year-old male with features of Neurofibromatosis type II (NF2) including vision and hearing loss, imbalance, and cranial and peripheral nerve tumors, was referred for dental prosthetic rehabilitation. Treatment plan was established to rehabilitate the patient with periodontal, endodontic treatment, extractions, restorative, and prosthetic procedures. Due to severe vision impairment and hearing loss, special communication methods were required in order to achieve patient's cooperation, mainly utilizing the sense of touch. Devices such as tablets and smartphones were also used to facilitate communication and patient's comfort. The patient was followed up every 3 months. During the recalls special emphasis was given to the oral hygiene and motivation. It was possible to surpass the severe vision and hearing impairments of this special care patient and fully treat him in the dental chair under a multidiscipline protocol.

67. Oral Maxillofac Surg Clin North Am. 2018 Aug;30(3):287-289. doi: 10.1016/j.coms.2018.04.004. Epub 2018 Jul 5.

The Use of Botulinum Toxin for the Treatment of Myofascial Pain in theMasticatory Muscles.

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Although the use of botulinum toxin has been recommended for the management of myofascial pain and dysfunction, the precise mechanism of its action remains undetermined and studies on its effectiveness are equivocal. Moreover, even if such treatment may temporarily relieve the symptoms, it does not address the cause of the problem. Also, its use is not free of potential complications. On this basis, botulinum toxin does not seem to be a logical treatment of myofascial pain and dysfunction.

68. Braz Dent J. 2018 May-Jun;29(3):254-260. doi: 10.1590/0103-6440201801786.

Effect of Premedication with Anti-inflammatory Drugs on Post-Endodontic Pain: A Randomized Clinical Trial.

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In spite of advances in root canal therapy and better knowledge of pulpal and periapical inflammation, up 40% of endodontic patients report varying degrees of

pain. The aim of this present study was to compare the effect of single preoperative dose of ibuprofen or dexamethasone on post-endodontic pain. Sixty volunteers were divided into three groups (n=20 per group): PL, placebo; IB, 400 mg of ibuprofen; and DE, 8 mg of dexamethasone. The primary outcome was the post-endodontic pain intensity measured with a numerical rating scale (4, 8, 12, 24, and 48 h). Secondary outcomes included number of anesthetic cartridges used and consumption of rescue medication. Data were analyzed by one-way ANOVA, chi-square and Kruskal-Wallis tests. There was no significant difference among groups ($p>0.05$) considering the pain intensity. Only 37% of IB group patients and 28% of DE group patients used some rescue medication. On the other hand, 74% of PL group patients mentioned the consumption of rescue medication; PL group had a statistically significant difference ($p<0.05$) in comparison with IB and DE groups. The number of anesthetic cartridges used had no statistically significant difference among the groups ($p>0.05$). Significant differences were not found in the reduction of pain intensity and the number of anesthetic cartridges used. Considering the consumption of rescue medication (secondary outcome), preoperative administration of Ibuprofen or dexamethasone reduces post-endodontic pain and discomfort in comparison with a placebo. Premedication with anti-inflammatory drugs drugs could be contributed to control of the post-endodontic pain, mainly in patients more sensible for pain.

69. J Oral Rehabil. 2018 Nov;45(11):890-902. doi: 10.1111/joor.12686. Epub 2018 Jul18.

Association between obstructive sleep apnea and alcohol, caffeine and tobacco: A meta-analysis.

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The aim of this systematic review was to answer the focused question, "Is there an association between obstructive sleep apnea (OSA) and alcohol, caffeine or tobacco use?" Five electronic databases (Cinahl, Literatura Latth American and Caribbean, PubMed, Scopus, Web of Science) and 3 grey literature (Google Acadêmico, ProQuest, OpenGrey) were searched, as well as search on reference list of included papers and contacts with study authors. Observational studies were included. The Meta-Analysis of Statistics Assessment and Review Instrument (MAStARI) tool assessed the potential risk of bias (RoB) among the studies, while

the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach determined the level of evidence. Meta-Analysis was performed with RevMan 5.3 software. Among 3,442 identified studies, 14 were included. Eleven studies were classified as moderate RoB and 3 as high RoB. Meta-analysis showed OSA has no association with tobacco and presented a positive association with alcohol. The odds ratio for OSA increased almost 1.33 times (95% confidence interval [CI]; 1.10-1.62) for alcohol users. There was insufficient published data to evaluate whether OSA is associated with caffeine. The overall quality of evidence ranged from low to very low. OSA was associated with the use of alcohol, however there is not enough evidence to confirm the association with tobacco or caffeine. Due to the very low GRADE level of evidence, caution should be applied when considering these findings.

70. Bull Tokyo Dent Coll. 2018;59(2):139-144. doi: 10.2209/tdcpublication.2017-0020.

Effects of Ultrasonic Debridement on Oral Hygiene Status.

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The aim of this randomized-controlled, single-blinded study was to compare the effects of mechanical tooth cleaning (MTC) and ultrasonic debridement (UD) on

oral hygiene status in healthy young adults. Thirty-seven participants (mean age: 20.3±0.62 years) were divided into 3 groups after pre-examination: group A, receiving MTC; B, receiving MTC+UD using a universal insert (UDUI); and C, receiving MTC+UD using a probe-shaped insert (UDPI). All participants were required to abstain from oral hygiene for 24 hours after the allocated intervention, after which they were examined. A masked examiner determined the Quigley-Hein plaque index (PII) and Silness and Löe gingival index (GI) scores before the interventions and after 24 hours of non-brushing. A significant increase in the PII score was observed in group A ($p<0.001$) in comparison with that in group B (A: 0.311±0.26; B: -0.01±0.33; C: 0.13±0.27; $p<0.05$). A significant decrease in the GI score was observed in groups B and C ($p<0.05$), and the change in this score in group C significantly differed from that in group A or B (A: -0.04±0.25; B: -0.13±0.17; C: -0.33±0.2; $p<0.05$). Only MTC was insufficient to prevent plaque formation over a 24-hour period of non-brushing and decrease the GI score. Ultrasonic debridement was more effective in preventing plaque formation and decreasing the GI score, regardless of the type of insert used. The present results suggest that UD should be included as an important procedure in the provision of professional oral prophylaxis and that UDPI is as efficient for cleaning as UDUI.

71. J Contemp Dent Pract. 2018 Jun 1;19(6):690-697.

Evaluation of the Efficacy of Guava Extract as an Antimicrobial Agent on Periodontal Pathogens.

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AIM: The present study was undertaken to assess the inhibitory effect of guava extracts on Porphyromonas gingivalis and Aggregatibacteractinomycetemcomitans, to assess the time-kill curve of P. gingivalis and A. actinomycetemcomitans, and to determine the antiproteolytic activity of guava on P. gingivalis.

MATERIALS AND METHODS: Kanamycin blood agar was used to isolate P. gingivalis and

A. actinomycetemcomitans. Ethanolic guava extract (EGE) and aqueous guava extract (AGE) were prepared and the inhibitory effects of these extracts for two periodontal pathogens were tested by minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) procedures. Antibacterial activity of guava extracts was determined by well diffusion method. Antiproteolytic activity

of guava on protease of P. gingivalis was determined by gelatin liquefaction test.

RESULTS: The MIC determined for AGE and EGE was at 75 µL/mL concentration for P. gingivalis, whereas EGE exhibited the activity at 75 µL/mL on P. gingivalis. The MIC determined for AGE was at 50 µL/mL for A. actinomycetemcomitans, whereas MIC determined for EGE was at 3.12 µL/mL for A. actinomycetemcomitans. Porphyromonas gingivalis was susceptible to EGE compared with AGE. Aggregatibacter actinomycetemcomitans was more susceptible to guava extracts compared with P. gingivalis.

CONCLUSION: Guava extract may be a potential therapeutic agent for periodontitis as it shows significant activity against both P. gingivalis and A. actinomycetemcomitans.

CLINICAL SIGNIFICANCE: Guava leaves extract can be used as economical and suitable adjuvant to synthetic drugs and can be a potential therapeutic agent for periodontitis.

72. Oral Health Prev Dent. 2018;16(3):225-232. doi: 10.3290/j.ohpd.a40673.

Cowden Syndrome Associated with Severe Periodontal Disease: A Short Literature Review and a Case Report.

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PURPOSE: The aim of this literature review and case report was to point out the relationship between Cowden Syndrome (CS) and severe periodontitis. CS is a rare autosomal dominant disorder characterised by skin and oral hamartomas, and is

associated with an increased risk of cancer development.
CASE REPORT: The case of a 43-year old male patient affected by Cowden syndrome and presenting severe periodontitis was reported.
RESULTS: It can be suggested that the specific gingival morphology of the patient with CS might be a risk factor for the development of periodontal disease, as described in the present case report.
CONCLUSION: Early diagnosis is crucial in patients affected by CS. The dentist may be the first to notice any atypical changes in the oral cavity and refer the patient for further examinations. Moreover, the mucosal and skin changes have a tendency to appear prior to the malignancies associated with the syndrome. This highlights the responsibility of the dentist in the early diagnosis of this progressive pathological syndrome.

73. J Oral Sci. 2018;60(2):278-284. doi: 10.2334/josnusd.17-0164.

Impact of 1% malic acid spray on the oral health-related quality of life of patients with xerostomia.

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Dry mouth sensation, also known as xerostomia, is a common clinical problem with

an increasing prevalence. Although recent studies have reported promissory results of malic acid, none have evaluated the impact of malic acid on the oral health-related quality of life (OHRQoL) of patients with xerostomia. Thus, this study aimed to evaluate the impact of 1% malic acid, combined with fluoride and xylitol, on the OHRQoL of patients with xerostomia. We enrolled 70 patients and randomly allocated them into two groups: the intervention group (applied topical sialogogue with 1% malic acid) and the control group (applied a placebo). We assessed the OHRQoL and severity of xerostomia before and after treatment with the Spanish version of the Oral Health Impact Profile-14 questionnaire (OHIP-14sp) and a visual analogue scale (VAS), respectively. In addition, stimulated and non-stimulated salivary flow rates before and after treatments were also measured. In total, 60 patients completed the study. According to the VAS, both sprays significantly improved dry mouth sensation ($P < 0.001$). However, OHIP-14sp total scores decreased significantly in the intervention group from 20.8 ± 10.4 to 16.5 ± 9.5 ($P < 0.001$), indicating an improvement in the OHRQoL. No significant differences were observed in the control group ($P > 0.05$). Furthermore, non-stimulated salivary flow rates significantly increased in the intervention group from 0.25 ± 0.22 to 0.33 ± 0.33 mL/min ($P < 0.001$). Overall, this study demonstrated that malic acid improves the OHRQoL and dry mouth sensation in patients with xerostomia.

74. Med Oral Patol Oral Cir Bucal. 2018 Jul 1;23(4):e436-e442. doi: 10.4317/medoral.22377.

Dental status, salivary flow, and sociodemographic aspects in Sheehan Syndrome patients.

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BACKGROUND: Sheehan's syndrome (SS) is one of the leading causes of hypopituitarism in developing countries. It occurs after postpartum necrosis of the pituitary gland, and it is considered a significant public health problem. This paper, apparently unpublished, aimed to perform an analysis on oral aspects in patients with SS.

MATERIAL AND METHODS: A cross-sectional study was performed with 23 women diagnosed with SS at the Division of Endocrinology and Diabetes (Walter Cantidio University Hospital, Fortaleza, Brazil).

RESULTS: Data on sociodemographic, dental and salivary flow aspects were collected through a clinical approach and a panoramic radiograph request. The mean age was 64 ± 11.5 years old, with the sample consisting mainly of married women (56.5%), socioeconomic class C2 or D / E (78.2%) and years of education up to 8 years (69.5%). The presence of horizontal bone loss ($p<0.001$) and bilateral pneumatization of the maxillary sinus ($p=0.015$) were significant data. The mean number of absent teeth considering all subjects was 23.17±9.7, being

statistically significant (p<0.001). In relation to age, the mean number of missing teeth was higher in individuals over 65 years old (p=0.048). Reduced salivary flow was observed in 78.3% of the patients. In a bivariate analysis, considering the outcome variables missing teeth and reduced salivary flow, it was observed that economic class (p<0.001), family income (0.037) and maxillary sinus pneumatization (0.032) were statistically significant.
CONCLUSIONS: In brief, patients with SS showed severe teeth loss, reduced salivary flow, and low educational status. This study addressed important aspects regarding oral findings in SS and highlighted the importance of researches in oral medicine.

75. Med Oral Patol Oral Cir Bucal. 2018 Jul 1;23(4):e391-e400. doi: 10.4317/medoral.22286.

Oral lesions in Sjogren's syndrome: A systematic review.

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BACKGROUND: Sjogren's syndrome (SS) is an autoimmune disease related to two common symptoms: dry mouth and eyes. Although, xerostomia and hyposialia have been frequently reported in these patients, not many studies have evaluated other

oral manifestations. The aim of this systematic review was to investigate prevalence rates of oral lesions (OL) in SS patients and to compare it to a control group (CG), when available.
MATERIAL AND METHODS: An exhaustive search of the published literature of the Pubmed, Scopus, Web of Science and the Cochrane Library databases was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols (PRISMA-P) for relevant studies that met our eligibility criteria (up to September 1st 2017).
RESULTS: Seventeen cross-sectional studies and one cohort study were finally included. The results showed that SS patients presented more OL compared to non-SS patients. The most frequent types of OL registered in primary and secondary SS were angular cheilitis, atrophic glossitis, recurrent oral ulcerations and grooves or fissurations of the tongue, also when compared to a CG.
CONCLUSIONS: OL are common and more frequent in SS patients when compared to a
CG. This may be a consequence of low levels of saliva. More studies where these OL and all the possible cofounding factors are taken into account are needed.

76. Indian J Dent Res. 2018 May-Jun;29(3):358-363. doi: 10.4103/ijdr.IJDR_505_16.

A systematic analysis on possibility of water fluoridation causing hypothyroidism.

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Background: Community water fluoridation is widely used worldwide and its role in preventive dental health care is well established. However, there is sufficient evidence of the ill effects of excessive fluoride content in water, causing skeletal and dental fluorosis. Alongside, there was also extraskeletal and dental manifestations of excessive fluorides reported. They include the effect on thyroid function, but the literature regarding this is sparse.

Aim: The present systematic review aims to analyze the data from controlled studies about the effect of fluoride on thyroid function.

Materials and Methods: A systematic literature search was performed using PUBMED, MEDLINE, EMBASE, COCHRANE Library, EBSCO search, and the internet search, with language restriction to English. The search included published studies which dealt with the association of fluorine with hypothyroidism, from January 1981 to November 2015. Literature search was done using keywords: fluoride and hypothyroidism, dental fluorosis and thyroid disorders, systemic fluorosis and thyroid disease, excessive water fluoridation and hypothyroidism, thyroid and fluoride, fluorosis and its adverse effects.

Results: Out of 166 publications, related to search strategy, 37 full articles which were related with the association of fluoride and hypothyroidism were acquired for further inspection. Out of the 37 articles, 10 articles met the inclusion criteria. The data were extracted and placed in an excel sheet and were analyzed. The analysis suggested a positive correlation of excess fluoride and hypothyroidism.

Conclusion: The present systematic review suggests a positive correlation between excess fluoride and hypothyroidism. This calls the need for further well-controlled studies in this otherwise emerging alarming issue. It also calls for considerable community network through health informatics for problem sensitization.

77. J Appl Oral Sci. 2018 Jun 11;26:e20170499. doi: 10.1590/1678-7757-2017-0499.

Caries lesion remineralization with fluoride toothpastes and chlorhexidine - effects of application timing and toothpaste surfactant.

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INTRODUCTION: Habitual toothbrushing with fluoridated toothpaste followed by rinsing with antibacterial mouthwashes is a method to maintain good oral hygiene and to diminish the occurrence and severity of dental caries and periodontal disease. However, our understanding of how antimicrobial agents in mouthwashes affect fluoride-mediated caries lesion remineralization is still poor.

OBJECTIVE: The objectives of this in vitro study were a) to determine the effects of the waiting period of chlorhexidine (CHX) rinsing after fluoride toothpaste use and b) to further determine the effect of the type of toothpaste surfactant [sodium dodecyl sulfate (SDS) or cocamidopropyl betaine (CAPB)] on caries lesion remineralization associated with CHX rinsing.

MATERIAL AND METHODS: Caries lesions were formed in bovine enamel specimens and assigned to 10 treatment groups (n=18) based on Vickers surface microhardness (VHN). Lesions were then pH-cycled for 10 days with daily regimen comprised of twice daily toothpaste slurry treatments (1150 ppm fluoride, with SDS or CAPB), followed by CHX solution treatments [0, 15, 30 or 60 minutes following slurry treatment or no CHX treatment (negative control)]. VHN was measured again and the extent of lesion remineralization calculated (∆VHN).

RESULTS: ∆VHN with SDS-toothpaste was significantly lower than with CAPB-toothpaste, indicating more remineralization for the CAPB-toothpaste. ∆VHN with 0-minute waiting time was significantly lower than with 30-minute waiting time and with negative control.

CONCLUSIONS: The absence of CHX as an adjunct to fluoride toothpastes led to greater remineralization of enamel lesions compared with the immediate use of CHX treatment for both SDS- and CAPB-toothpastes. CAPB-toothpastes indicated significantly greater remineralization than SDS-toothpastes, and can be suggested for patients at high risk of caries. A 30-minute waiting time for CHX treatment is recommended after brushing.

78. Braz Oral Res. 2018 Jun 7;32:e51. doi: 10.1590/1807-3107bor-2018.vol32.0051.

Pain and temporomandibular disorders in patients with eating disorders.

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Orofacial pain and temporomandibular dysfunction may cause chronic facial pain, which may interfere with the emotional state and food intake of patients with eating disorders (ED), such as anorexia nervosa (AN) and bulimia nervosa (BN). Sixty-four patients were assigned to four groups: Group A (AN - restricting subtype): 07; Group B (AN - purging subtype): 19; Group C (BN): 16; and Group D (control): 22. Complaints of pain are more prevalent in individuals with eating

disorders (p<0.004). There are differences between the presence of myofascial pain and the number of hospitalizations (p = 0.046) and the presence of sore throat (p=0.05). There was a higher prevalence of masticatory myofascial pain and complaints of pain in other parts of the body in ED patients; however, there was no difference between ED subgroups. There was no difference in the number of self-induced vomiting between ED patients with and without myofascial pain.

79. Spec Care Dentist. 2018 Jul;38(4):216-226. doi: 10.1111/scd.12301. Epub 2018 Jun 12.

Factors associated with health and oral health-related quality of life of children and adolescents with cerebral palsy.

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AIMS: To verify factors associated with impact on Health-Related Quality of Life (HRQoL) and Oral Health-Related Quality of Life (OHRQoL) of children and adolescents with cerebral palsy (CP).

METHODS AND RESULTS: Sample of 149 individuals with CP aged 2 to 18 years and their caregivers, who provided information regarding HRQoL (PedsQL 4.0), OHRQoL (PedsQL 3.0 Oral Health, and socioeconomic factors. A calibrated investigator performed dental examinations, with dental caries, traumatic dental injury, periodontal, and occlusal evaluation. HRQoL and OHRQoL scores were transformed into a 0 to 100 scale, dichotomized in absence or presence of impact (score < 50) and analyzed by Mann-Whitney test and Poisson regression (α = .05). The mean HRQoL score was 50.3 ± 10.2. Impact on HRQoL was observed in 51.7% and associated with gender, general health perception, and communication skills. The mean OHRQoL score was 78.0 ± 24.6. The presence of impact on OHRQoL (12.1%) was associated with age, presence of gastroesophageal reflux, dental caries, and periodontal diseases.

CONCLUSION: Individuals with CP had low HRQoL and OHRQoL scores. The impact on HRQoL was shown to be associated with gender, health perception. and communication skills. Regarding OHRQoL, the presence of impact was associated with age, gastroesophageal reflux, dental caries. and periodontal diseases.

80. Dent Mater. 2018 Sep;34(9):e236-e245. doi: 10.1016/j.dental.2018.05.017. Epub 2018 Jun 8.

Bonding to caries affected dentine.

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OBJECTIVES: Dentine replacement materials are often placed over caries affected dentine (CAD). The aim of this study was to compare the bonding characteristics and interactions of selected hydraulic calcium silicate-based dentine replacement materials to CAD and sound dentine.

METHODS: Three hydraulic calcium silicate-based dentine replacement materials were assessed: Retro MTA, Biodentine and Theracal LC. Material characterization was done by scanning electron microscopy and X-ray diffraction analyses. Blocks

of sound and CAD were prepared and standardized by Vickers microhardness testing. Half of the affected and sound dentine blocks were pretreated with 5.25% NaOCl prior to material placement. The materials were stored either for 1 week or 24 weeks in 37°C in fully saturated conditions. Shear bond strength was assessed at both time periods. Radiopacity of the interfacial dentine was also evaluated to assess the remineralization potential of the dentine replacement materials.
RESULTS: The reaction of Theracal was slower than that of the water-based materials. The bond strengths of different materials did not differ after 1 week ($P>0.05$). The bond strength of Biodentine and Retro MTA increased over time but no change was observed for Theracal. NaOCl pre-treatment deteriorated the bond strength to sound dentine but improvement was observed in affected dentine. Radiopacity changes were observed after 24 weeks.
SIGNIFICANCE: Biodentine and Retro MTA showed better bonding to CAD. Pretreatment
with NaOCl improved the bond strength of dentine replacement materials to CAD.

81. Gerodontology. 2018 Dec;35(4):333-338. doi: 10.1111/ger.12345. Epub 2018 Jun 7.
Influence of dental factors on oropharyngeal dysphagia among recipients of long-term care.
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OBJECTIVE: The study evaluated the association of the sociodemographic, behavioural variables and the oral conditions with the presence of oropharyngeal dysphagia in long-term care older persons.
BACKGROUND: Due to the influence of ageing, swallowing may be altered both in people with natural teeth and in those who have dentures or tooth loss.
MATERIALS AND METHODS: This cross-sectional study evaluated 115 individuals older than 60 years, living in long-term care institutions of the State of Rio Grande do Sul in 2016. The diagnosis of dysphagia happen using a clinical speech evaluation, based on the research of signals and symptoms of alterations during deglutition, and on an oral sensory-motor evaluation. The dental clinical evaluation examined the oral cavity, teeth and dental prostheses, including a Xerostomia assessment. Poisson Regressions with robust variance was calculated were used to estimate crude and adjusted Prevalence Ratios(PR) and their IC95%.
RESULTS: The sample was mostly comprised of older women (67.0%), with more than 81 years of age (44.3%) and edentulous (54.3%). Diagnosis of oropharyngeal

dysphagia was verified in 60.9% of the participants. In the final model, older persons who presented no pair (PR=1.52(CI95%=1.02-2.40)) had a highest prevalence of oropharyngeal dysphagia, when compared to older persons who presented 8 to 14 mixed pairs, as well as those older persons who had more complaints related to symptoms of Xerostomia (PR=2.86(CI95% 1.58-5.18)).
CONCLUSION: Institutionalised older persons with a poor oral health condition are associated with a higher prevalence of oropharyngeal dysphagia, as well as with the presence of Xerostomia

82. Spec Care Dentist. 2018 Jul;38(4):249-254. doi: 10.1111/scd.12297. Epub 2018 Jun 6.

Oral manifestations and rehabilitation in Fraser syndrome: A case report.

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Fraser syndrome (FS) is a rare recessive autosomal genetic disorder characterized by multisystemic malformations typically comprising cryptophthalmos, syndactyly,

and renal defects. We report the case of a 16-year-old patient who exhibited facial asymmetry, short roots, hypodontia, and malocclusion. Oral rehabilitation included orthodontics, exodontia, and osseointegrated dental implants to improve the patient's self-esteem and eating function. We suggest short roots and hypodontia assessment in patients with FS.

83. Int J Oral Maxillofac Surg. 2018 Dec;47(12):1561-1571. doi: 10.1016/j.ijom.2018.05.015. Epub 2018 Jun 2.

Maxillomandibular advancement is a successful treatment for obstructive sleep apnoea: a systematic review and meta-analysis.

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The primary objective of this review was to establish the effectiveness of maxillomandibular advancement (MMA) as a successful treatment modality in improving airway patency in patients with obstructive sleep apnoea (OSA). A systematic and detailed search was performed using PubMed Central, covering the

period January 2000 to December 2015, with well-defined selection criteria. The authors independently conducted the study selection, data extraction, and assessed the risk of bias of the included studies. Twenty studies met the inclusion criteria. The outcome measures studied were the apnoea-hypopnoea index (AHI), respiratory disturbance index (RDI), Epworth Sleepiness Scale (ESS), lowest oxygen saturation (LSAT), and body mass index (BMI). The random-effects model was adopted for meta-analysis as moderate heterogeneity was identified. The analysis revealed significant changes in the outcome measures after the intervention. The results showed that the preoperative severity of OSA based on AHI and RDI significantly influences the outcome of MMA intervention, with a strong positive correlation between the pre MMA AHI values and the percentage change post intervention. The surgical success of MMA in patients with OSA was found to be 100% with respect to AHI and RDI scores. It is concluded that MMA is a successful treatment for OSA.

84. Braz Oral Res. 2018 May 24;32:e35. doi: 10.1590/1807-3107bor-2018.vol32.0035.

Association between metabolic syndrome and periodontitis: a systematic review and meta-analysis.

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The aim of the present study was to evaluate the association between metabolic syndrome (MS) and periodontitis (PD), through a systematic review and meta-analysis. Original observational studies assessing the association between MS and PD in adults, published before May 11th (2017), were identified through electronic searches of MEDLINE, EMBASE and Cochrane Library databases. The PRISMA
(Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guideline was used. For studies to be included, they had to mention the criteria used to diagnose MS and to have used at least one clinical measure to diagnose PD. There was no language restriction. Three reviewers independently identified eligible studies for possible inclusion in the systematic review and meta-analysis. The quality of the studies was evaluated by the Newcastle-Ottawa scale for observational studies. A random model meta-analysis was conducted. The strategies used to investigate heterogeneity were sequential analysis, subgroup analysis, univariate meta-regression and sensitivity analysis. Thirty-three studies met the inclusion criteria for the systematic review, and 26 had enough information to be included in the meta-analysis, totaling 52,504 patients. MS and PD were associated with an odds ratio of 1.38 (95%CI 1.26-1.51; I2 = 92.7%; p < 0.001). Subgroup analysis showed that complete periodontal examination (I2 = 70.6%; p < 0.001) partially explained the variability between studies. The present findings

suggest an association between MS and PD. Individuals with MS are 38% more likely to present PD than individuals without this condition. Prospective studies should be conducted to establish cause and effect relations between MS and PD.

85. Pediatr Dent. 2018 May 15;40(3):184-189.

Mineral Trioxide Aggregate Partial Pulpotomy Versus Formocresol Pulpotomy: A Randomized, Split-Mouth, Controlled Clinical Trial with 24 Months Follow-Up.

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PURPOSE: The purpose of this study was to evaluate the clinical and radiographic success rates of mineral trioxide aggregate partial pulpotomy (PP) compared to formocresol pulpotomy (FP) in human primary molars.
METHODS: In this randomized, controlled, split-mouth, clinical trial, 25 healthy five- to eight-year-olds, with 50 carious primary mandibular second molars lacking clinical and radiographic evidence of pulp pathology, were selected. The selected teeth were randomly assigned into two groups, PP and FP, for vital pulp therapy. Stainless steel crowns were placed as final restorations for both groups. Clinical and radiographic evaluation at six, 12, and 24 months used the following criteria for failure: pain; swelling; sinus tract; mobility; internal or external root resorption; furcation or periapical radiolucency; and widening of periodontal ligament space. The data were analyzed using a binary logistic generalized estimating equation model.
RESULTS: At the 12-month and 24-month follow-ups, one child and three children, respectively, were lost to follow-up. At the 24-month follow-up, the clinical, radiographic, and overall success rates of PP were 90.9 percent, 90.5 percent, and 81.8 percent versus FP success of 100 percent, 95.2 percent, and 95.2 percent, respectively.
CONCLUSION: There were no significant differences between clinical, radiographic, and overall success rate of mineral trioxide aggregate partial pulpotomy and formocresol pulpotomy overall 24 months.

86. J Appl Oral Sci. 2018;26:e20170465. doi: 10.1590/1678-7757-2017-0465. Epub 2018

May 21.

Solubility, porosity and fluid uptake of calcium silicate-based cements.

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OBJECTIVE: To evaluate the absorption/fluid uptake, solubility and porosity of White mineral trioxide aggregate (MTA) Angelus, Biodentine (BIO), and zinc oxide-eugenol (ZOE).

MATERIAL AND METHODS: Solubility was evaluated after immersion in distilled water for 7 and 30 days. Porosity was evaluated using digital inverted microscope, scanning electron microscope (SEM) and micro-computed tomography (micro-CT). For the fluid uptake test, specimens were immersed in Hank's balanced salt solution (HBSS) for 1, 7, 14 and 28 days. Fluid absorption, solubility and porosity of the materials were measured after each period. Statistical evaluation was performed using one-way analysis of variance (ANOVA) and Tukey tests, with a significance level at 5%.

RESULTS: After 7 and 30 days, BIO showed the highest solubility ($p<0.05$). All methods demonstrated that MTA had total porosity higher than BIO and ZOE ($p<0.05$). Micro-CT analysis showed that MTA had the highest porosity at the initial period, after its setting time ($p<0.05$). After 7 and 30 days, ZOE had

porosity lower than MTA and BIO ($p<0.05$). Absorption was similar among the materials ($p>0.05$), and higher fluid uptake and solubility were observed for MTA in the fluid uptake test ($p<0.05$).
CONCLUSIONS: BIO had the highest solubility in the conventional test and MTA had higher porosity and fluid uptake. ZOE had lower values of solubility, porosity and fluid uptake. Solubility, porosity and fluid uptake are related, and the tests used provided complementary data.

87. J Clin Pediatr Dent. 2018;42(5):344-348. doi: 10.17796/1053-4625-42.5.4. Epub 2018 May 15.

Molar-Incisor Hypomineralization: Positive Correlation with Atopic Dermatitis and Food Allergies.
Hernandez M, Boj J, Espasa E, Planells P, Peretz B.

AIM: Molar-incisor hypomineralization is a disturbance in dental development that involves first permanent molars as well as permanent incisors with a prevalence that ranges from 2.5% to 40%. The objective of this study was to investigate the etiology of molar-incisor hypomineralization among school children from two randomly selected towns in the province of Barcelona, Spain.
STUDY DESIGN: A cross-sectional study was conducted with 705 children ranging in age from six years-old to 14 years and 11 months-old. Full mouth examinations were carried out in accordance with the European Academy of Paediatric Dentistry criteria for the diagnosis of molar-incisor hypomineralization, from April to July 2016.

RESULTS: A total of 56 cases of molar-incisor hypomineralization were found in 22 (39.3%) boys and 34 (60.7%) girls. MIH was significantly more prevalent among those who had atopic dermatitis (OR=90.9; 33.4-247.1 CI 95%), food allergies (OR=104.2; 12.2-887.5 CI 95%), bronchitis/asthma (OR=5.3; 2.7-10.1 CI 95%), varicella (OR=96.3; 41.9-221.1 CI 95%), otitis media (OR=12.2; 6.3-23.5 CI 95%), pneumonia (OR=276.7; 35.1-2183.7 CI 95%), and febrile syndrome (OR=7.8; 4.1-14.8 CI 95%).
CONCLUSIONS: The present research reveals for the first time a statistically significant relationship between atopic dermatitis and food allergies with the presence of molar-incisor hypomineralization.

88. J Dent Educ. 2018 May;82(5):483-491. doi: 10.21815/JDE.018.053.

Assessing Dental Students' Readiness to Treat Populations That Are Underserved: A Scoping Review.

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In North America, all dental schools have adopted some form of community-based dental education (CBDE) or service-learning, but little is known about the areas being researched and reported in published studies. The aim of this study was to conduct a scoping review to determine what areas of research had been conducted to determine the effects of CBDE on dental students' readiness to treat populations that are underserved. A systematic search of articles published in English or French since 2000 was performed on July 29, 2015, and combined quantitative and qualitative synthesis of data was conducted. Of the 32 studies evaluated, 23 (72%) were quantitative, seven (22%) were qualitative, and two were multi-method. The majority (66%) used self-report methods, most frequently surveys. Participants in 50% of the studies were fourth-year dental students; the others assessed third- and fourth-year (13%), first- and second-year (6%), and first-year (13%) students. Dentists were the participants in three studies (9%), with dentists and students in one study (3%). Either the types of populations

receiving care were unspecified or four or more groups were pooled together in 25 studies (78%), while two focused on children, one on rural populations, one on elderly populations, two on persons with special health care needs, and one on low-income populations. The study areas were wide-ranging, but generally fell into three categories: student performance (37.5%), teaching approaches and evaluation methods (37.5%), and perceptions of CBDE (25%). This review identified many research gaps for determining whether students are prepared to treat populations that are underserved. The disparate nature of CBDE research demonstrates a compelling argument for determining elements that define student readiness to care for patients who are underserved and for research that includes the voices of patients, curriculum development, and more comprehensive and rigorous evaluation methodologies.

89. Gen Dent. 2018 May-Jun;66(3):75-79.
Potential erosive effect of mouthrinses on enamel and dentin.
Delgado AJ, Dias Ribeiro AP, Quesada A, Rodríguez LE, Hernández R, Wynkoop B, Dilbone DA.

This in vitro study measured the pH values, titratable acidity (TA), and erosive potential of commercially available mouthrinses. A pH analysis of 6 mouthrinses (Listerine Total Care, Listerine Ultraclean, Listerine Original, Crest Pro-Health, Scope Classic, and ACT Total Care) was performed using a calibrated pH meter, and the neutralizable acidity was measured by titrating the mouthwashes against 0.1 M of sodium hydroxide. A gravimetric analysis was performed by submerging human enamel and dentin specimens in 5 mL of each mouthrinse for a

total of 2 weeks. Specimens were weighed on a calibrated analytical balance at baseline, 24 hours, 48 hours, 96 hours, 1 week, and 2 weeks, and finally the loss of mass was calculated. The differences in erosive potential among the 6 mouthrinses were verified using nonparametric tests (Kruskal-Wallis and Mann-Whitney). The level of significance was set at 0.05. The mouthrinses were found to have the following mean pH/ TA values: Crest Pro-Health, 7.05/0.00; ACT Total Care, 6.31/5.44; Scope Classic, 5.18/0.42; Listerine Original, 3.98/9.26; Listerine Total Care, 3.43/5.88; and Listerine Ultraclean, 3.87/10.36. A significant correlation between pH and TA was observed for this dataset ($P > 0.0001$). No statistically significant difference in enamel loss among the groups was observed ($P = 0.0631$). However, a significant difference in dentin loss was observed among the 6 mouthrinses ($P = 0.0011$). Within the limitations of this in vitro study, it can be concluded that some mouthrinses have a pH lower than the critical pH of enamel and dentin. There is a significant association between acidic pH values and higher TA. Some of the tested mouthrinses presented an erosive potential on dentin.

90. Gen Dent. 2018 May-Jun;66(3):41-47.
Clinical characterization and treatment outcome of patients with burning mouth syndrome.

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Burning mouth syndrome (BMS) is a complex condition that affects the oral cavity, and data regarding effective treatment are limited. The purpose of this study was to explore the demographic and clinical information along with treatment outcomes

for patients with BMS treated in a large referral center. Clinical records of the Oral Medicine Clinic at the University of Florida College of Dentistry were retrospectively searched for patients diagnosed between 2009 and 2014. Clinical data and treatment effectiveness were recorded. The records of 64 patients were included in this study. Women represented the majority of patients (81.2%), and the average age of all patients was 65 years. The most common systemic diseases were hypertension (59.4%), psycho-logical disorders (51.6%), and gastroesophageal reflux disease (50.0%). The majority of patients were taking 5 or more medications (70.3%). Treatment frequency and efficacy were as follows: a-lipoic acid, 47.5% frequency (57 prescribed treatments of 120 total treatments) and lasting improvement reported with 45.6% of prescribed treatments; clonazepam, 17.5% frequency (21/120) and improvement reported with 33.0% of prescribed treatments; oral disintegrating clonazepam, 15.8% frequency (19/120) and improvement reported with 52.6% of prescribed treatments; and topical vitamin E, 5.0% frequency (6/120) and improvement reported with 33.0% of prescribed treatments. Chi-square analysis indicated that a significantly better response to treatment was reported by women ($P = 0.010$) and patients who reported involvement limited to the tongue rather than multifocal oral involvement ($P = 0.040$); however, the significant relationships did not persist when the variables were evaluated together using logistic regression analysis. No other clinical or demographic features showed significant differences in response to treatment. Although treatment effectiveness in this study was variable and limited for some regimens due to infrequent usage, many of the patients reported alleviation of symptoms.

91. Clin Oral Investig. 2018 Jun;22(5):1893-1905. doi: 10.1007/s00784-018-2454-6. Epub 2018 Apr 25.

Treatment modalities for burning mouth syndrome: a systematic review.

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OBJECTIVES: In the burning mouth syndrome (BMS), patients experience a burning sensation in the oral cavity with no associated injury or clinical manifestation. The etiology of this condition is still poorly understood, and therefore, treatment is challenging. The aim of this study is to perform a systematic review of treatment possibilities described in the literature for BMS.

MATERIALS AND METHODS: PubMed, Embase, and SciELO databases were searched for randomized clinical trials published between 1996 and 2016.

RESULTS: Following application of inclusion and exclusion criteria, 29 papers were analyzed and divided into five subcategories according to the type of treatment described: antidepressants, alpha-lipoic acid, phytotherapeutic agents, analgesic and anti-inflammatory agents, and non-pharmacological therapies. In each category, the results found were compared with regard to the methodology

employed, sample size, assessment method, presence or absence of adverse effects, and treatment outcomes.
CONCLUSIONS: The analysis revealed that the use of antidepressants and alpha-lipoic acid has been showing promising results; however, more studies are necessary before we can have a first-line treatment strategy for patients with BMS.
CLINICAL RELEVANCE: To review systematically the literature about Burning Mouth Syndrome treatment may aid the clinicians to choose the treatment modality to improve patients symptoms based on the best evidence.

92. BMC Oral Health. 2018 Apr 18;18(1):65. doi: 10.1186/s12903-018-0528-0.

Glass hybrid restorations as an alternative for restoring hypomineralized molars in the ART model.

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BACKGROUND: This study aimed to evaluate the survival rate of glass hybrid restorations placed under the atraumatic restorative treatment (ART) technique in

first permanent molars affected by molar incisor hypomineralization (MIH).
METHODS: Sixty teeth with severe MIH associated to carious dentin lesions without pulp involvement were included. Treatments were performed by one trained dentist using the ART approach and restored with a glass hybrid restorative system (Equia Forte, GC®) on school premises. Treatments were evaluated after 6 and 12 months by an independent examiner using the modified ART criterion. Data analysis involved descriptive statistics and actuarial success analysis.
RESULTS: The sample comprised 24 (54.54%) girls and 20 (45.45%) boys with a mean age of 10.55 (±1.25) years. In regard to the number of surfaces involved in the restorations, 29 (48.3%) comprised one surface and 31 (51.7%) two or more surfaces. Considering cavity extent, 25 (41%) presented dentin cavitation without cusp weakness, 23 (37.7%) with large dentin cavitation with cusp weakness and 13 (21.3%) with large dentin cavitation with the breakdown of one or more cusps. Only 4 teeth required local anesthesia. A success rate of 98.3% after 6 and 12 months was observed, as only one restoration failed. The only failure occurred in a restoration involving three or more sur-faces presenting the breakdown of all cusps.
CONCLUSION: Restorations using a glass hybrid restorative system and performed in the field with the ART technique proved, after 12 months of evaluation, to be an effective approach to preserving first permanent molars affected by MIH.
TRIAL REGISTRATION: REBEC-RBR-8drccq (17/06/15).

93. J Oral Rehabil. 2018 Jun;45(6):467-475. doi: 10.1111/joor.12637. Epub 2018 May 11.

Efficacy of epinephrine-free articaine compared to articaine with epinephrine (1:100 000) for maxillary infiltration, a randomised clinical trial.

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The selection of local anaesthetic in dental practice is essential to the patient's comfort and the success of the treatment. Many patients prefer anaesthesia even for short treatments. Articaine is a local anaesthetic commonly used for dental practice. The duration of the effect of articaine on the nerve fibres is not yet precisely reported. This study was aimed to evaluate the clinical efficacy of 4% articaine with and without epinephrine in treatment of occlusal caries. Thirty healthy patients were included in this randomised double-blind study. Each subject received 4% articaine with and without epinephrine (1:100 000). Maxillary infiltration was used for occlusal caries of the maxillary premolars on right and left sides. Quantitative sensory testing (QST) was performed in the innervation area of the infraorbital nerve, and pulp vitality test was performed on restoration-free canines. Duration of anaesthesia was longer when articaine with epinephrine was used. Articaine without

epinephrine showed faster recovery of sensory blockade compared to articaine with epinephrine. The epinephrine-containing agent, when compared to the plain articaine solution, showed significantly stronger and longer anaesthetic efficacy on the soft tissue by all parameters of QST. Articaine with epinephrine caused a more reliable pulpal analgesia. A pain-free treatment of the soft tissue up to 15 minutes can be performed under the vasoconstrictor-free anaesthetic without causing long-lasting numbness. Epinephrine-containing articaine delivers a longer, more effective anaesthesia and is preferable for caries treatments and longer invasive treatments of the soft tissue.

94. Int J Oral Maxillofac Surg. 2018 Jul;47(7):940-946. doi: 10.1016/j.ijom.2018.03.009. Epub 2018 Apr 10.

Assessing an oral surgery specific protocol for patients on direct oral anticoagulants: a retrospective controlled cohort study.

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Chronic therapy with the new direct oral anticoagulants (DOACs) poses new challenges for dental practitioners assessing the risk versus benefit of cessation versus non-cessation of anticoagulant therapy for dentoalveolar

procedures. A retrospective controlled cohort study was designed to evaluate a non-cessation protocol for patients taking DOACs in the setting of dental extractions. A records review covering the period 1 January 2016 to 31 December 2016 identified 43 patients on DOAC therapy; 53 dentoalveolar procedures were performed under local anaesthesia, of which 15 included varying degrees of peri-procedural cessation. A control group of 50 patients on uninterrupted warfarin therapy undergoing 59 dentoalveolar procedures was identified. The incidence, severity, and timing of bleeding events were recorded for each group. Four (10.5%) minor bleeding events were recorded in the non-cessation DOAC group and nine (15.3%) minor bleeding events in the warfarin group. No bleeding events were recorded in the DOAC cessation group. Comparison of the incidence of bleeding events between the non-cessation DOAC group and the warfarin group showed no statistically significant difference (odds ratio 0.65, P=0.56). Within the limitations of this study, dental extractions in the context of continuing DOAC therapy can be performed safely provided extra local haemostatic measures are applied.

95. Spec Care Dentist. 2018 May;38(3):146-149. doi: 10.1111/scd.12286. Epub 2018 Apr 6.

Clinical outcome of dental procedures among renal transplant recipients.

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AIMS: To compare outcomes of dental procedures among a group of renal transplant recipients who had received antibiotic prophylaxis (AP) before the procedure and another group that had not received AP.
METHODS AND RESULTS: The records of all renal transplant patients treated at the Special Care Dentistry Center (SCDC) were assessed. Dental procedures documented in the records were classified as invasive or noninvasive. All dental procedures performed were compiled, and the prescription or nonprescription of prophylactic antibiotics, and the incidence and description of postoperative complications after invasive procedures were recorded. Eighty-seven records were evaluated. Out of 190 invasive procedures all were simple dental extractions, 107 (56.3%) were preceded by AP; out of 242 noninvasive procedures, 14 (5.7%) were preceded by AP. A lack of uniformity on the type and dose of the antibiotic prescribed was observed. Four postoperative complications after invasive procedures (dental extraction) were noted and in 2 cases the procedures were preceded by AP.
CONCLUSION: This retrospective study showed no difference in postextraction outcomes between renal transplant recipients who received and who did not receive AP before dental extractions.

95. Evid Based Dent. 2018 Mar 23;19(1):28-29. doi: 10.1038/sj.ebd.6401294.

Are pharmacological treatments for oro-facial pain effective?

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Data sourcesElectronic searches of PubMed, the Cochrane Library, Embase, the National Health Service Economic Evaluation Database and HTA until March 2017. Also handsearched referenced in the original articles. Grey literature was not included.Study selectionRandomised controlled trials with more than ten participants with oro-facial pain duration of more than three months were sub grouped into: TMD-muscle pain (TMD-m), TMD-joint pain (TMD-j), burning mouth syndrome (BMS) and other oro-facial pain. Studies include any pharmacological treatment against another pharmacological, non-pharmacological treatment, placebo or no treatment. The primary outcome was change in pain intensity and the secondary outcome was the effect on quality of life.Data extraction and synthesisThree authors formed three review pairs that independently checked for inclusion. Four pairs of reviewers independently evaluated the risk of bias using the Swedish Agency for Health Technology Assessment and Assessment of Social Services tool. Two authors independently extracted data that were later assessed according to a modified GRADE system.ResultsForty-one studies, rated medium to low risk of bias, were included in qualitative analysis on patients with TMD-j pain (15 studies, n = 790), TMD-m pain (nine studies, n = 375), BMS (17 studies n = 868). For the TMD-j group five studies support NSAIDs and nine corticosteroid and hyaluronate injections. Eight of the nine TMD-m studies were included in a network meta-analysis (NMA), they support cyclobenzaprine, botulinum toxin

injections and topical treatment with Ping-On ointment. Five of the 17 BMS studies included in a NMA support topical capsaicin and clonazepam. Of the remaining 12, five showed no effect while the remaining support alpha lipoic acid, gabapentin, clonazepam, amisulpride and SSRIs.ConclusionsBased on the results of the NMA the authors concluded that clonazepam and capsaicin are effective for BMS while cyclobenzaprine, a muscle relaxant, has a positive treatment effect on TMJ-m. Evidence from the narrative synthesis suggests NSAIDs, corticosteroid and hyaluronate injections are effective for TMD-j pain.

96. Bull Tokyo Dent Coll. 2018;59(1):35-41. doi: 10.2209/tdcpublication.2017-0002.

Mineral Trioxide Aggregate for Intruded Teeth with Incomplete Apex Formation.

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The axial displacement of a tooth within the alveolar bone is called traumatic intrusive luxation. The treatment of immature permanent teeth with incomplete

root formation is a challenging procedure, as the prognosis is uncertain. The objective of the present article is to report the successful treatment of traumatic intrusive luxation in teeth with incomplete root formation, where mineral trioxide aggregate (MTA) was used as an apical plug to induce apexification. A 10-year-old boy was referred to our department for emergency treatment of dentoalveolar trauma to the maxillary central incisors. After clinical and radiographic examination, the teeth were surgically repositioned and rigidly fixed. Three months later, a pulp vitality test of both teeth elicited a negative response. Endodontic therapy with an MTA plug was used to induce apexification as root formation was incomplete. The root canals were then filled. Clinical and radiographic examination was then performed again at 2 and 4 months later. The MTA apical plug was effective in inducing apexification and maintaining both teeth.

97. Braz Oral Res. 2018 Mar 15;32:e25. doi: 10.1590/1807-3107bor-2018.vol32.0025.

In vitro effects of alcohol-containing mouthwashes on human enamel and restorative materials.

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The objective of this study was to evaluate the in vitro effects, including surface morphological characteristics and chemical elemental properties, of different mouthwash formulations on enamel and dental restorative materials, simulating up to 6 months of daily use. Human enamel samples, hydroxyapatite, composite resin, and ceramic surfaces were exposed to 3 different mouthwashes according to label directions - Listerine® Cool Mint®, Listerine® Total Care, and Listerine® Whitening - versus control (hydroalcohol solution) to simulate daily use for up to 6 months. The samples were analyzed using scanning electron microscopy (SEM), infrared spectrophotometry (μ-Fourier transform infrared microscopy), energy-dispersive X-ray (EDX) spectroscopy, and color analysis before and after exposure. No relevant changes were observed in the morphological characteristics of the surfaces using SEM techniques. The physical and chemical aspects of the enamel surfaces were evaluated using mid-infrared spectroscopy, and EDX fluorescence was used to evaluate the elemental aspects of each surface. There was no variation in the relative concentrations of calcium and phosphorus in enamel, silicon and barium in composite resin, and silicon and aluminum in the ceramic material before and after treatment. No relevant changes were detected in the biochemical and color properties of any specimen, except with Listerine® Whitening mouthwash, which demonstrated a whitening effect on enamel surfaces. Long-term exposure to low pH, alcohol-containing, and peroxide-containing mouthwash formulations caused no ultra-structural or chemical elemental changes in human enamel or dental restorative materials in vitro.

98. Oper Dent. 2018 May/Jun;43(3):272-281. doi: 10.2341/16-379-C. Epub 2018 Mar 7.

Double-blind Randomized Study to Evaluate the Safety and Efficacy of Over-the-counter Tooth-whitening Agents Containing 2.9% Hydrogen Peroxide.

Kim YM, Ha AN, Kim JW, Kim SJ.

OBJECTIVES: In this double-blind randomized study, we evaluated the safety and efficacy of over-the-counter (OTC) bleaching products that included 2.9% hydrogen peroxide (H_2O_2) with two methods of application: strip and paint-on.

METHODS AND MATERIALS: A commonly used product was selected for each type (strip and paint-on) of OTC bleaching agent. In total, 75 volunteers were assigned randomly into five groups: two test groups (strip and paint-on), two negative control groups (products without H_2O_2), and one positive control group (dentist-supervised home bleaching). The tooth shade was evaluated with a spectrophotometer and Vita shade guide at baseline and 2 weeks and 4 weeks after use. To document any adverse reactions, such as hypersensitivity or tissue irritation, all patients were examined and the Gingival Index (GI), Plaque Index (PI), and a visual analog scale (VAS) measuring the cold response were obtained.

RESULTS: There were significant differences among the five groups ($p<0.001$). The positive control showed the greatest color changes; then, in decreasing order, the strip-type test group, paint-on-type test group, and negative controls. The strip-type bleaching agent was significantly more effective than the paint-on-type agent and the negative control, while it was significantly less

effective than the dentist-supervised home bleaching. Regardless of the treatment group, the canines showed greater color changes than did the central or lateral incisors. Some cases of gingival irritation and hypersensitivity were observed, but they were mild and reversible. GI, PI, and VAS scores were not significantly changed.
CONCLUSIONS: Within the limitations of this study, the results indicated that the strip-type and paint-on-type OTC bleaching agents were significantly less efficacious than was dentist-supervised home bleaching; however, they showed acceptable safety and efficacy. The strip-type was more effective than was the paint-on-type in this study.

99. Gen Dent. 2018 Mar-Apr;66(2):47-49.

Use of trichloroacetic acid for management of oral lesions caused by human papillomavirus.

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The human papillomavirus (HPV) has an affinity for squamous cells of stratified keratinized epithelium, thus affecting the lower genital, nasal, and oral tracts.
In the oral cavity, HPV is associated with pathoses such as the verruca vulgaris (common wart), squamous cell papilloma, condyloma acuminatum (venereal wart), and focal epithelial hyperplasia (Heck disease). Among the treatments available for these lesions are cryotherapy, electrosurgery, surgical removal, laser therapy, and trichloroacetic acid (TCA). The objective of this research was to determine

the behavior of HPV-associated oral pathoses treated with TCA. A prospective cohort study was performed in 20 patients who attended a dental consultation at 2 universities in Cartagena, Colombia. Among the patients, 65% were diagnosed as having focal epithelial hyperplasia, 20% as having verrucae vulgares, and 15% as having condylomata acuminata. Application of TCA to HPV-associated oral lesions proved to be a useful nonsurgical alternative treatment, as the resolution of the lesions was achieved atraumatically in a span of 45 days with 3 applications of 30-60 seconds each.

101. Anesth Prog. Spring 2018;65(1):60-65. doi: 10.2344/anpr-65-01-10.

Anesthetic Considerations for Patients on Antidepressant Therapy - Part II.

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Millions of patients take antidepressant medications in the United States for the treatment of depression or anxiety disorders. Some antidepressants are prescribed off-label to treat problems such as chronic pain, low energy, and menstrual symptoms. Antidepressants are a broad and expansive group of medications, but the more common drug classes include tricyclic antidepressants, selective serotonin

reuptake inhibitors, serotonin-norepinephrine reuptake inhibitors, and monoamine oxidase inhibitors. A miscellaneous or "atypical" category covers other agents. Some herbal supplements that claim to have antidepressant activity will also be discussed. Part I of this series reviewed antidepressant pharmacology, adverse effects, and drug interactions with adrenergic agonists. In part II, drug-drug interactions with sedation and general anesthetics, bleeding effects, and serotonin syndrome will be discussed.

102. Spec Care Dentist. 2018 Mar;38(2):65-72. doi: 10.1111/scd.12278. Epub 2018 Mar 6.

Association between symptoms of depression and oral health conditions.

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AIMS: To investigate the symptoms of depression and oral health status in

Brazilian public healthcare system users.

MATERIALS AND METHODS: Analysis of a cross-sectional study conducted with a sample of 776 individuals aged 15 years or older, in the urban areas of Recife (Brazil), obtained by multistage sampling. Committee on Ethics in Research with Human Beings (CAAE) 0538.0.172.172-11. Depression symptoms were verified by means
of Axis II of the Research Diagnostic Criteria in Temporomandibular Disorder. For the socioeconomic level, the economic classification criteria of the Brazilian Association of Research Companies and clinical exam record charts were used to establish variables related to oral health conditions.

RESULTS: The variables discomfort on occlusion (OR = 1.882 CI = 1.384-2.560), gingival bleeding (OR = 1.384 CI = 1.002-1.912), and self-perception of oral health (OR = 1.549 CI = 1.054-2.277), remained in the regression model.

CONCLUSION: Discomfort on occlusion, self-perception of oral health, gingival bleeding, sex, and skin color were shown to be associated with the presence of depressive symptoms.

103. Oper Dent. 2018 Mar/Apr;43(2):190-200. doi: 10.2341/17-024-TR.

Effect of Toothpaste Use Against Mineral Loss Promoted by Dental Bleaching.

Vieira-Junior WF, Ferraz LN, Pini N, Ambrosano G, Aguiar F, Tabchoury C, Lima D.

AIM: To investigate the effect of different toothpaste formulations used prior to dental bleaching with 35% hydrogen peroxide (HP) on the mineral content and surface morphology of enamel.

METHODS: Seventy bovine enamel blocks (4×4×2 mm) were submitted to in vitro treatment protocols using a toothbrushing machine prior to dental bleaching or a placebo procedure (n=10) as proposed in the following groups: unbleached control (PLA), bleached control (HP), and brushing with differing toothpastes prior to HP bleaching, including: potassium nitrate toothpaste containing sodium fluoride (PN), sodium monofluorophosphate/MFP toothpaste (FT), arginine-carbonate (8% arginine) (PA) or arginine-carbonate (1.5% arginine) toothpaste (SAN), and toothpaste containing bioactive glass (NM). Phosphorus concentration in gel ([P]) was evaluated (μg of P/mg of gel), and the elemental levels (wt%) of Ca, P, and Na as well as the proportion between Ca and P and spectra graphics were determined using an energy-dispersive X-ray spectrometer (EDS). The surface morphology was assessed using scanning electron microscopy (SEM). The data were subjected to analysis of variance and the Tukey test (α=0.05).
RESULTS: HP demonstrated the greatest [P] values in gel, being statistically different from PLA. The [P] of NM was statistically similar to PLA. HP showed a significant decrease in the Ca% and Ca/P values when compared to PLA in EDS analysis. PA showed Ca/P values statistically different from HP. In accordance with SEM analysis, the PA, SAN, and NM groups presented a smooth and uniform enamel surface, while HP and FT demonstrated some alterations in morphology.
CONCLUSION: The toothpastes containing bioactive glass or arginine carbonate used prior to dental bleaching were effective in protecting enamel against mineral loss promoted by the whitening procedure.

104. Compend Contin Educ Dent. 2018 Mar;39(3):e13-e17.

Protection From Dental Erosion: All Fluorides are Not Equal.

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All fluoride sources help strengthen teeth against bacterial acids that cause caries. However, excessive exposure to dietary acids, which can result in dental erosion, presents a more aggressive level of challenge compared to caries. Despite the fact that almost all toothpastes contain fluoride, both the incidence and prevalence of dental erosion appear to be on the rise. This article: (1) describes key differences between caries and dental erosion and the ability of different fluoride sources to help prevent erosion; (2) discusses the importance of the evaluation of patients for dental erosion at the earliest stages using the Basic Erosive Wear Examination scoring system to help assess and educate patients; and (3) provides evidence-based information for making specific recommendations to patients with dental erosion. The objective of this article is to assess the comparative ability of fluoride agents to protect against dental erosion. Though all fluorides are able to help strengthen teeth against cariogenic acids, not all available sources of fluoride provide the same level of erosion protection. Daily use of a stabilized stannous fluoride dentifrice has been shown to provide the most effective means of protecting teeth against the

increasing risk of dental erosion and erosive tooth wear.

105. Dent Clin North Am. 2018 Apr;62(2):245-267. doi: 10.1016/j.cden.2017.11.005.

Dental Care for Geriatric and Special Needs Populations.

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This article reviews considerations for oral health care associated with the most common causes of mortality and morbidity in older adults. Many of these diseases result in functional or cognitive impairments that must be considered in treatment planning to ensure appropriate, safe, and effective care for patients. Many of these considerations parallel those of adults who have lived with developmental disabilities over a lifetime and similar principles can be applied. Systemic diseases, conditions, and their treatments can pose significant risks to oral health, which requires prevention, treatment, and advocacy for oral health

care as integral to chronic disease management.

106. Dent Clin North Am. 2018 Apr;62(2):207-234. doi: 10.1016/j.cden.2017.11.003.

Fluorides and Other Preventive Strategies for Tooth Decay.

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We focus on scalable public health interventions that prevent and delay the development of caries and enhance resistance to dental caries lesions. These interventions should occur throughout the life cycle, and need to be age appropriate. Mitigating disease transmission and enhancing resistance are achieved through use of various fluorides, sugar substitutes, mechanical barriers such as pit-and-fissure sealants, and antimicrobials. A key aspect is counseling and other behavioral interventions that are designed to promote use of disease transmission-inhibiting and tooth resistance-enhancing agents. Advocacy for public water fluoridation and sugar taxes is an appropriate dental public health

activity.

107. Clin Oral Investig. 2018 Sep;22(7):2593-2597. doi: 10.1007/s00784-018-2358-5. Epub 2018 Feb 15.

Correlation between plaque control and gingival health using short and extended oral hygiene intervals.

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OBJECTIVES: To evaluate the correlation between dental plaque formation and gingival health in subjects performing high oral hygiene standards over short or extended intervals.
MATERIALS AND METHODS: Fifty-two non-dental students volunteered for this study. The subjects, trained to perform high oral hygiene standards, were randomized to perform oral hygiene at 12-, 24-, 48-, or 72-h interval over 30 days. The plaque

index (PII) and the gingival index (GI) were evaluated at baseline, 15, and 30 days. For the statistical analysis, oral hygiene intervals were collapsed into daily (12 and 24 h; G12/24) and extended (48 and 72 h; G48/72) intervals. Summary statistics (mean ± SD) and Spearman correlations between the PII and the GI at baseline, 15, and 30 days were estimated.

RESULTS: At baseline, correlation coefficients between PII and GI were positive for both groups ($r = 0.29$ and $r = 0.25$). At day 15 and 30, correlation was maintained with similar baseline values for the G48/72 group. GI levels did not increase despite an increase in PII for the G12/24 group, and the correlation was lower than that observed at baseline ($r = 0.13$ vs. $r = 0.29$).

CONCLUSIONS: In subjects with high oral hygiene standards, the oral hygiene frequency governs the correlation between dental plaque formation and gingival health. Subjects performing high oral hygiene standards at daily intervals will maintain gingival health in difference to subjects using extended hygiene intervals.

CLINICAL RELEVANCE: Subjects performing high oral hygiene standards at daily intervals will maintain gingival health in difference to subjects using extended hygiene intervals.

108. Indian J Dent Res. 2018 Jan-Feb;29(1):61-66. doi: 10.4103/ijdr.IJDR_599_16.

Reactive hyperplastic lesions of the oral cavity: A retrospective survey study and literature review.

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Context: The reactive lesions are relatively common in the oral cavity because of the frequency with which the tissues are injured. They often result from a known stimulus or injury such as dental plaque, calculus, or foreign material.
Aims: : The aim of this study was to review the clinicopathologic features of reactive hyperplastic lesions (RHLs) of the oral cavity at MIDSR, Dental College and Hospital, Latur, Maharashtra, and to compare these data with those of previously reported studies.
Settings and Design: The patient case files from the Department of Oral and Maxillofacial Pathology from June 2010 to May 2016 were reviewed for cases of RHLs of the oral cavity.
Subjects and Methods: Both clinical and histopathological diagnosis of reactive lesions was selected for the study. Data including the type of the lesion, age, gender, and the site involved were collected.
Statistical Analysis Used: Descriptive statistics was applied to the data and differences in frequencies among groups were evaluated using SPSS (IBM Corporation) software.
Results: : A total of 155 histologically diagnosed cases of RHLs were obtained with a prevalence of 11.7%. The data consist of 56 (36.1%) males and 99 (63.9%)

females. The most common lesion clinically was traumatic fibroma (36.5%) and histologically fibrous hyperplasia (37.4%). The reactive lesions clinically presented as either sessile (51%) or pedunculated (49%) lesions.
Conclusions: The clinical features of reactive hyperplasia among our patients were similar to those reported previously with divergence in some analyzed data. The novelty in our study was the correlation between histopathology and clinical features which were not reported in literature till date.

109. BMC Oral Health. 2018 Feb 13;18(1):22. doi: 10.1186/s12903-018-0487-5.

Periodontitis in patients with cirrhosis: a cross-sectional study.

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BACKGROUND: Many patients with cirrhosis have poor oral health but little is known on periodontitis, and its clinical significance is largely unknown. This study aimed to examine the prevalence and predictors of periodontitis, and evaluate the association of periodontitis with nutritional and systemic inflammation status.

METHODS: 145 patients with cirrhosis were consecutively enrolled. Clinical, oral examination of plaque, pocket depth, clinical attachment level, and bleeding on probing was performed. Patients were categorized as having no-or-mild, moderate, or severe periodontitis. Predictors of severe periodontitis and the association with nutritional and systemic inflammation status were analyzed using univariable and multivariable logistic regression analyses.

RESULTS: The large majority of patients had periodontitis, 46% of them severely and 39% moderately. Predictors of severe periodontitis included smoking (odds ratio (OR) 2.93, 95% confidence interval (CI) 1.29-6.63), brushing teeth twice daily (OR 0.30, 95% CI 0.11-0.79), and visiting the dentist annually (OR 3.51, 95% CI 1.22-10.81). Cirrhosis etiology or severity was not predictors of severe periodontitis. The patients with severe periodontitis had a higher nutritional risk score than patients with moderate, mild, or no periodontitis (3, interquartile range (IQR) 3-5 vs. 3, IQR 2-4, P = 0.02).

CONCLUSIONS: Most cirrhosis patients had significant periodontitis, the severity of which was related to life style factors and was associated with higher nutrition risk score. Our results emphasize the need for further research to establish the effect of periodontitis on cirrhosis.

110. Clin Oral Investig. 2018 Sep;22(7):2543-2552. doi: 10.1007/s00784-018-2351-z. Epub 2018 Feb 8.

Effects of a sodium fluoride- and phytate-containing dentifrice on remineralisation of enamel erosive lesions-an in situ randomised clinical study.

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OBJECTIVE: The objective of this work was to evaluate effects of a dentifrice containing sodium fluoride (1150 ppm F) and the organic polyphosphate phytate (0.85% w/w of the hexa-sodium salt) on in situ remineralisation of early enamel erosive lesions and resistance to subsequent demineralisation.

MATERIALS AND METHODS: Subjects (n = 62) wore palatal appliances holding eight bovine enamel specimens with pre-formed erosive lesions. They brushed their natural teeth with the phytate test dentifrice (TD); a positive control dentifrice (PC, 1150 ppm fluoride as NaF); a reference dentifrice (RD, disodium

pyrophosphate + 1100 ppm fluoride as NaF) or a negative control dentifrice (NC, fluoride-free) in a randomised, double-blind, crossover design. Specimens were removed at 2, 4 and 8 h post-brushing and exposed to an ex vivo acid challenge. Surface microhardness (Knoop) was measured at each stage. The primary efficacy variable was relative erosion resistance (RER); other variables included the surface microhardness recovery (SMHR), acid resistance ratio (ARR) and enamel fluoride uptake (EFU).
RESULTS: After 4 h, the results for RER, ARR and EFU were in the order PC > TD = RD > NC with PC > TD = RD = NC for SMHR. Results at 2 and 8 h were generally consistent with the 4 h data. Mineralisation progressed over time. Dentifrices were generally well-tolerated.
CONCLUSIONS: In this in situ model, addition of phytate or pyrophosphate to a fluoride dentifrice inhibited the remineralising effect of fluoride. Both formulations still delivered fluoride to the enamel and inhibited demineralisation, albeit to a lesser extent than a polyphosphate-free dentifrice.
CLINICAL RELEVANCE: Addition of phytate or pyrophosphate to a fluoride dentifrice may reduce its net anti-erosive properties.

111. Oral Surg Oral Med Oral Pathol Oral Radiol. 2018 Jun;125(6):612-627. doi: 10.1016/j.oooo.2017.12.011. Epub 2017 Dec 29.

Oral potentially malignant disorders: risk of progression to malignancy.
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Oral potentially malignant disorders (OPMDs) have a statistically increased risk of progressing to cancer, but the risk varies according to a range of patient- or lesion-related factors. It is difficult to predict the risk of progression in any individual patient, and the clinician must make a judgment based on assessment of each case. The most commonly encountered OPMD is leukoplakia, but others, including lichen planus, oral submucous fibrosis, and erythroplakia, may also be seen. Factors associated with an increased risk of malignant transformation include sex; site and type of lesion; habits, such as smoking and alcohol consumption; and the presence of epithelial dysplasia on histologic examination. In this review, we attempt to identify important risk factors and present a simple algorithm that can be used as a guide for risk assessment at each stage of the clinical evaluation of a patient.

112. Eur Arch Paediatr Dent. 2018 Feb;19(1):1-22. doi: 10.1007/s40368-018-0328-x. Epub2018 Jan 25.

Biodentine™ material characteristics and clinical applications: a 3 year literature review and update.

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INTRODUCTION: Biodentine™ has frequently been acknowledged in the literature as a promising material and serves as an important representative of tricalcium silicate based cements used in dentistry.

AIM: To provide an update on the physical and biological properties of Biodentine™ and to compare these properties with those of other tricalcium silicate cements namely, different variants of mineral trioxide aggregate (MTA) such as ProRoot MTA, MTA Angelus, Micro Mega MTA (MM-MTA), Retro MTA, Ortho MTA, MTA Plus, GCMTA, MTA HP and calcium enriched mixture (CEM), Endosequence and Bioaggregate™.

STUDY DESIGN: A comprehensive literature search for publications from November 20, 2013 to November 20, 2016 was performed by two independent reviewers on Medline (PubMed), Embase, Web of Science, CENTRAL (Cochrane), SIGLE, SciELO, Scopus, Lilacs and clinicaltrials.gov. Electronic and hand search was carried out to identify randomised control trials (RCTs), case control studies, case series,

case reports, as well as in vitro and animal studies published in the English language.

CONCLUSIONS: The enhanced physical and biologic properties of Biodentine™ could be attributed to the presence of finer particle size, use of zirconium oxide as radiopacifier, purity of tricalcium silicate, absence of dicalcium silicate, and the addition of calcium chloride and hydrosoluble polymer. Furthermore, as Biodentine™ overcomes the major drawbacks of MTA it has great potential to revolutionise the different treatment modalities in paediatric dentistry and endodontics especially after traumatic injuries. Nevertheless, high quality long-term clinical studies are required to facilitate definitive conclusions

113. Community Dent Health. 2018 Mar 1;35(1):23-29. doi: 10.1922/CDH_4150Hwang07.

The relationship between depression and periodontal diseases.

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OBJECTIVE: A cross-sectional study was conducted to investigate whether depression is associated with periodontal diseases in a representative sample of South Korean adults Methods: We used data from the sixth Korea National Health

and Nutrition Examination Survey (KNHANES VI), conducted in 2014. We included in this study 4328 participants aged over 20 years (1768 males and 2560 females). Depression was assessed with the Patient Health Questionnaire (PHQ-9) and history of physician-diagnosed depression. Periodontal diseases were assessed a gingival bleeding, calculus and periodontal pockets. The data were analyzed using the chi-square test and multiple logistic regression.
RESULTS: People with any periodontal diseases tended to be old, male, married, low income, poor education, blue-collar occupation, diabetes mellitus, hypertension, overweight, smoking, not using dental floss or interdental brush in univariate analysis. Neither self-reported nor diagnosed depression was associated with the presence of any or severe periodontal disease in the total sample. In participants aged 20-29 years only, the presence of any periodontal disease was associated with self-reported depression (OR, 2.031; 95% CI, 1.011-4.078). In the same age group, the presence of severe periodontal disease was associated with both self-reported depression (OR, 6.532; 95% CI, 2.190-19.483) and diagnosed depression (OR, 7.729; 95% CI, 1.966-30.389).
CONCLUSION: Self-reported depression was significantly associated with the presence of any or severe periodontal disease, and diagnosed depression was significantly associated with severe periodontal diseases only in participants aged 20-29 years.

114. Adv Dent Res. 2018 Feb;29(1):135-140. doi: 10.1177/0022034517743750.

Silver Fluoride as a Treatment for Dental Caries.

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Medical management of caries is a distinct treatment philosophy that employs topical minimally invasive therapies that treat the disease and is not merely prevention. This strategy is justified as an alternative or supplement to traditional care by significant disease recurrence rates following comprehensive operative treatment under general anesthesia. Silver diamine fluoride (SDF) is one agent to enable effective noninvasive treatment. The announcement of breakthrough therapy designation by the Food and Drug Administration (FDA) suggests that SDF may become the first FDA-approved drug for treating caries. Since our systematic review performed in April 2015, 4 clinical trials have been completed, which inform an update to the application protocol and frequency regimen. Suggestions from these studies are to skip the rinsing step due to demonstration of safety in young children, start patients with high disease severity on an intensive regimen of multiple applications over the first few weeks, and continue with semiannual maintenance doses as previously suggested. Breakthroughs in elucidating the impact of SDF on the dental plaque microbiome inform potential opportunities for understanding caries arrest. SDF can be added to the set of evidence-based noninvasive methods to treat caries lesions in primary teeth, such as the Hall crown technique and sealing lesions with accessible margins.

115. Adv Dent Res. 2018 Feb;29(1):131-134. doi: 10.1177/0022034517740123.

Silver Diamine Fluoride: A Successful Anticarious Solution with Limits.

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Silver diamine fluoride (SDF) is a solution containing ionic silver, fluoride, and ammonia that arrests the progress of carious lesions and prevents the development of future caries. The silver particle extends into the dentin tubules and could create some bonding problems for subsequent composite resin restorations placed over SDF-treated darkened tooth structures. The fluoride penetrates deeper into the tooth with SDF as compared with other fluoride solutions, creating a fluoride reservoir in the tooth structure. The fluoride component of SDF contributes to remineralization and fluorapatite formation, producing harder, more caries-resistant tooth structures. The silver provides the antimicrobial activity for the material and inhibits biofilm formation. It has been evaluated in >20 clinical studies and reviewed in systemic reviews. The material was recently approved by the Food and Drug Administration for desensitizing cold-sensitive teeth and has been used off-label to treat carious lesions. SDF will produce a caries lesion darker (brown to black) than the original, which is the major criticism of the material. A nanoparticle-sized silver material was recently developed that may retain the antimicrobial properties of the larger-sized ion silver material without the discoloring

effects. The application of SDF is easily adapted for field use. The lesion is isolated, and the solution is painted onto the clean caries lesion and dried. This simple application process requires little equipment, and its low cost per application makes the material ideal for large populations.

116. Quintessence Int. 2018;49(3):209-217. doi: 10.3290/j.qi.a39692.

Psoriasis: A review of systemic comorbidities and dental management considerations.

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OBJECTIVE: There is a growing body of evidence to substantiate that cutaneous psoriasis is associated with an increased risk for a multitude of systemic disorders. Although there is an extensive array of medical publications regarding psoriasis, the dental literature has almost exclusively been focused on erythema migrans and occasionally, with oral psoriatic mucositis, chronic periodontitis, and psoriatic arthritis of the temporomandibular joint. This report will review the diversity of systemic comorbidities, namely cardiovascular, neurologic, renal, liver, gastrointestinal, pulmonary, endocrine, ocular, arthritic (including temporomandibular joint), nail, cutaneous, and psychologic (including suicide) disorders; neoplasia; infection; dyslipidemia; vitamin D deficiency; substance abuse; higher mortality; and oral mucosal involvement. A discussion of the oral and maxillofacial relevance of these comorbidities is also provided.

METHOD AND MATERIALS: The author conducted a PubMed search from 1975 through

August 2017 for articles on comorbidities associated with psoriasis. For select topics, some relevant case reports were examined.

RESULTS: A search on PubMed yielded almost 44,000 articles on psoriasis and nearly 1,300 with the keywords psoriasis and comorbidities. Articles selected for discussion consisted mostly of recent systematic reviews and meta-analyses. Case reports were included when there was a restricted number of psoriatic patients with a particular comorbidity.

CONCLUSION: When a patient presents with a history of psoriasis, the dental practitioner should expand the medical history process to ascertain possible correlated diseases. Information gleaned from this interview process may prompt the attending dental clinician to seek consultation with the patient's physician to gain greater insight to the severity of any prevailing comorbidities and engage in discussions for possible modifications in dental management. Knowledge of psoriatic comorbidities and their possible impact on dental care may improve clinical outcomes.

117. Oral Surg Oral Med Oral Pathol Oral Radiol. 2018 Mar;125(3):223-231. doi: 10.1016/j.oooo.2017.11.018. Epub 2017 Dec 11.

Relationship between sjögren syndrome and periodontal status: A systematic review.

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OBJECTIVE: This study aimed to examine whether Sjögren syndrome (SS) is related to periodontal status.

STUDY DESIGN: A systematic review was performed on the basis of PRISMA (PROSPERO: CRD42017055202). A search was performed in the PubMed/MEDLINE, LILACS, Web of Science, and Science Direct databases. Hand searches and review of the gray literature were also performed. Three researchers independently selected studies, extracted data, and assessed methodologic quality. Studies that correlated primary and/or secondary SS with plaque index, gingival index, probing depth, and bleeding on probing were included. The risk of bias was estimated on the basis of the Newcastle-Ottawa scale.

RESULTS: Seventeen studies were included in the review and 9 included in the meta-analysis, with a total of 518 and 544 patients, with or without SS, respectively. The mean difference of plaque index (0.29; 95% confidence interval

[CI] 0.17-0.41), gingival index (0.52; 95% CI 0.14-0.89), and bleeding on probing (9.92; 95% CI 4.37-15.47) were larger in patients with SS than in controls. In primary SS (0.47; 95% CI 0.10-0.83) and secondary SS (0.74; 95% CI 0.10-1.38), only the mean gingival index was larger compared with that in control group. The majority of the included studies were judged as having a high risk of bias.
CONCLUSIONS: The present review did not provide strong evidence that periodontal status is affected by SS.

118. Dent Traumatol. 2018 Apr;34(2):59-70. doi: 10.1111/edt.12382. Epub 2018 Feb 6.

Which is the most recommended medium for the storage and transport of avulsed teeth? A systematic review.

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BACKGROUND/AIMS: A wide variety of materials has been researched for their use as potential storage media for avulsed teeth, but it is essential to recognize the medium most recommended for improvement of the prognosis of avulsed teeth. The aim of this systematic review was to identify the most recommended medium to store and transport avulsed teeth based on the survival of periodontal ligament (PDL) cells as determined by in vitro studies.
METHODS: Only laboratory-based experimental studies on PDL cells found on adult

permanent teeth were included. Data were collected using PubMed, CINAHL plus (EBSCO host), and the Cochrane Library, along with Google Scholar and a hand search. The key terms employed were permutations of [avulsed permanent teeth* OR dental avulsion* OR knocked out teeth*] AND [storage media* OR transport media* OR biological transport* OR PDL cell viability* OR PDL cell survival*]. A customized data extraction pro forma was used to extract the data and to evaluate the quality and risk of bias.
RESULTS: The initial search yielded 978 articles, but only 67 were selected. Milk was the most recommended individual medium followed by Hank's balanced salt solution. Among natural products other than milk, propolis and coconut water were most frequently recommended. Recommendations were based on maintenance of PDL cell viability followed by ease of availability, low cost, and long shelf life.
CONCLUSIONS: Natural products are more effective in maintaining the PDL cell viability compared to synthetic products. Some storage media recommendations were also based upon practical aspects. Although natural products other than milk have more recommendations as a group, milk is the most recommended storage medium individually, based not only on PDL cell viability, but also practical considerations.

119. Clin Oral Investig. 2018 Jun;22(5):2103-2109. doi: 10.1007/s00784-017-2307-8. Epub 2017 Dec 21.

Periodontitis, tooth loss and cognitive functions among older adults.
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OBJECTIVE: This study aims to evaluate the potential association between periodontitis, the number of teeth and cognitive functions in a cohort of older adults in Sweden.
MATERIAL AND METHODS: In total, 775 individuals from 60 to 99 years of age were selected for the study. A clinical and radiographic examination was performed. The number of teeth and prevalence of periodontal pockets and bone loss was calculated and categorised. Cognitive functions were assessed using the Mini-Mental State Examination (MMSE) and clock test. The education level was obtained from a questionnaire. Data were analysed using chi-square tests and multivariate logistic regression.
RESULTS: Age and gender were associated with the prevalence of bone loss. Age and education were associated with lower number of teeth. Gender was also associated with the presence of pockets. The multivariate logistic regression analysis demonstrated a statistically significant association between prevalence of bone loss, the number of teeth and the outcome on MMSE test. This association remained even after adjustment for age, education and gender. Tooth loss was also associated with lower outcome on clock test. Presence of periodontal pockets ≥ 5 mm was not associated with cognitive test outcome.

CONCLUSIONS: A history of periodontitis and tooth loss may be of importance for cognitive functions among older adults.

CLINICAL RELEVANCE: Diseases with and inflammatory profile may have an impact on cognitive decline.

120. J Craniofac Surg. 2018 Mar;29(2):332-338. doi: 10.1097/SCS.0000000000004178.

Pierre Robin Sequence: An Evidence-Based Treatment Proposal.

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BACKGROUND: The Pierre Robin sequence (PRS) has been defined as the presence of micrognathia, glossoptosis, and respiratory obstruction in the neonatal period. Since its original description, different therapeutic approaches have been proposed obtaining different success rates, but there is no consensus about its management.

METHODS: A literature review was conducted in PubMed, Embase, and Cochrane databases, for the period of January,1985 to November, 2016. A number of 23 articles resulting from clinical studies, discussing diagnostic tests or therapeutic approaches, and directly or indirectly comparing diagnostic or treatment modalities were selected and assessed using the GRADE methodology.

RESULTS: After reviewing and analyzing the selected articles, an evidence-based algorithm for diagnosis and integral management of PRS patients was designed. CONCLUSION: Based on the anatomical principles and natural evolution of PRS, the clinical scenario must be evaluated thoroughly as a dynamic event to develop a management sequence that minimizes morbidity and mortality and accelerates patients' reinsertion to normal life.

121. Br Dent J. 2018 Jan;223(11):819-822. doi: 10.1038/sj.bdj.2017.988. Epub 2017 Dec 1.

Fluoridation and attention deficit hyperactivity disorder - a critique of Malin and Till (2015).

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A recent ecological study found a statistically significant association of attention deficit hyperactivity disorder (ADHD) prevalence in youth with exposure to fluoride in fluoridated water. However, it included only household income as a possible covariate. In contrast another study found a significant association of ADHD prevalence with residential altitude. A multiple regression analysis including water fluoridation extent, mean US state elevation and a number of possibly important social factors as covariates showed statistically significant associations of ADHD prevalence in 2011 with altitude and per capita personal

income in 2009. There was no statistically significant association of ADHD with the exposure to fluoride when these covariates were included. The ADHD-fluoridation study suffers from insufficient consideration of possible risk-modifying factors but has been widely cited because its reported findings appear advantageous to political campaigns against community water fluoridation.

122. Br Dent J. 2018 Jan;223(11):846-853. doi: 10.1038/sj.bdj.2017.992. Epub 2017 Dec 1.

Evidence summary: the relationship between oral health and dementia.

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This is the fourth and final paper of a series of reviews undertaken to explore the relationships between oral health and general medical conditions, in order to support teams within Public Health England, health practitioners and policy makers. This review aimed to explore the most contemporary evidence on whether poor oral health and dementia occurs in the same individuals or populations, to outline the nature of the relationship between these two health outcomes and to discuss the implication of any findings for health services and future research. The review was undertaken by a working group comprising consultant clinicians from medicine and dentistry, trainees, public health and academic staff. Whilst other rapid reviews in the current series limited their search to systematic reviews, this review focused on primary research involving cohort and case-control studies because of the lack of high level evidence in this new and important field. The results suggest that poor oral hygiene is associated with dementia, and more so amongst people in advanced stages of the disease. Suboptimal oral health (gingivitis, dental caries, tooth loss, edentulousness) appears to be associated with increased risk of developing cognitive impairment and dementia. The findings are discussed in relation to patient care and future research.

123. Dent Clin North Am. 2018 Jan;62(1):131-142. doi: 10.1016/j.cden.2017.08.010. Epub

2017 Oct 12.

Dental Management of Patients Who Have Undergone Oral Cancer Therapy.

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Oral cancer therapies are associated with orofacial complications that could result in dose-limiting cancer treatment and consequent suboptimal tumor control. Oral cancer treatment complications include oral mucositis, salivary gland hypofunction, odontogenic infections, pain, dermatitis, neurotoxicity, soft tissue fibrosis, trismus, osteoradionecrosis, and potential cancer recurrence. These complications significantly affect cancer survivorship, quality of life, and psychosocial status. Effective dental management of patients with oral cancer involves the coordination of care among several health care professionals before, during, and after cancer therapy. The goal is to minimize complications, and

establish optimal quality of life for survivors.

124. Dent Clin North Am. 2018 Jan;62(1):121-130. doi: 10.1016/j.cden.2017.08.009. Epub

2017 Oct 7.

Dental Treatment Planning for the Patient with Oral Cancer.

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Oral cancer therapy is associated with a multitude of head and neck sequelae that includes, but is not limited to, hyposalivation, increased risk for dental caries, osteoradionecrosis of the jaw, radiation fibrosis syndrome, mucositis, chemotherapy-induced neuropathy, dysgeusia, dysphagia, mucosal lesions, trismus, and infections. Preparing a comprehensive treatment plan for patients undergoing cancer therapy is essential to help minimize their risks for developing these oral and dental complications. In addition, dentists must take into account a patient's ongoing oncologic therapy for those patients who present to the dentist while concurrently receiving cancer treatment.

125. J Clin Periodontol. 2018 Jan;45(1):56-67. doi: 10.1111/jcpe.12830. Epub 2017 Nov 21.

Optimal dose and duration of amoxicillin-plus-metronidazole as an adjunct to non-surgical periodontal therapy: A systematic review and meta-analysis of randomized, placebo-controlled trials.

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AIM: This systematic review aimed to determine the optimum dose and duration of amoxicillin-plus-metronidazole prescribed as an adjunct to non-surgical treatment of periodontitis.
METHODS: Electronic searching identified 376 records, of which 18 were eligible blinded, randomized placebo-controlled trials. The primary outcomes assessed were periodontal pocket depth and clinical attachment level at 3 months, and secondary outcomes were adverse events and compliance. Subgroup analyses were conducted to compare lower and higher doses, and 7- and 14-day courses.
RESULTS: Meta-analysis showed a small beneficial effect of adjunctive amoxicillin-plus-metronidazole for each primary outcome, but there was <0.1 mm variation with antibiotic dose or duration. Risk differences for adverse events

in the higher dose and longer duration groups were minimally greater (0.04 and 0.05, respectively), and there was one report of anaphylaxis; 1.3% of patients were not fully compliant.
CONCLUSION: There was no clinically meaningful difference between different doses or duration of amoxicillin-plus-metronidazole at 3 months post-treatment. Without compelling evidence to suggest that any one regimen performed superiorly, principles of responsible antibiotic use generally recommend the highest dose for the shortest duration of time to reduce the risk of antibiotic resistance. Therefore, a 7-day regimen of 500/500 mg or 500/400 mg of amoxicillin and metronidazole would be most appropriate.

126. Clin Oral Investig. 2018 Apr;22(3):1355-1362. doi: 10.1007/s00784-017-2227-7. Epub 2017 Oct 8.

Efficacy of resin infiltration of proximal caries in primary molars: 1-year follow-up of a split-mouth randomized controlled clinical trial.

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OBJECTIVE: The main purpose of this split month, randomized, controlled clinical trial was evaluate the efficacy of caries infiltration in controlling the progression of non-cavitated proximal lesions in primary molars. Anxiety and time required for the caries infiltration was also evaluated.
MATERIALS AND METHODS: Fifty healthy children, 5 to 9 years, presenting two primary molars with proximal caries lesions (1/2 of the enamel or outer 1/3 of dentin), were included. Lesions were randomly allocated to the test group (fluoridated toothpaste + flossing + infiltration) or to the control group (fluoridated toothpaste + flossing). Caries risk was based on the Cariogram model. The main outcome after 1-year radiographic follow up was assessed by an independent blinded examiner A facial image scale (FIS) was applied to assess dental anxiety and time required to perform the infiltration was recorded.
RESULTS: Of the sample, 92.9% corresponded to high or medium caries risk. In 42 patients (1-year follow up), caries progression was observed in 11.9% (5/42) of the test lesions compared with 33.3% (14/42) of the control lesions ($p < 0.05$). Five control and three test lesions progressed to the middle 1/3 of dentin and were restored. No side effects were observed. Anxiety was both low before and after the treatment, and mean time required for the infiltration was 11.29 min (± 1.16 min).
CONCLUSIONS: Caries infiltration of proximal caries lesions in primary molars is

significantly more efficacious than standard therapy alone (fluoride toothpaste + flossing).
CLINICAL RELEVANCE: Caries infiltration is an applicable and well-accepted method be used in children, representing a promising micro-invasive approach.

127. Int Endod J. 2018 Mar;51(3):284-317. doi: 10.1111/iej.12843. Epub 2017 Oct 11.

Mineral trioxide aggregate and other bioactive endodontic cements: an updated overview - part II: other clinical applications and complications.

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Mineral trioxide aggregate (MTA) is a dental material used extensively for vital pulp therapies (VPT), protecting scaffolds during regenerative endodontic procedures, apical barriers in teeth with necrotic pulps and open apices, perforation repairs as well as root canal filling and root-end filling during surgical endodontics. A number of bioactive endodontic cements (BECs) have recently been introduced to the market. Most of these materials have calcium and

silicate in their compositions; however, bioactivity is a common property of these cements. These materials include the following: BioAggregate, Biodentine, BioRoot RCS, calcium-enriched mixture cement, Endo-CPM, Endocem, EndoSequence, EndoBinder, EndoSeal MTA, iRoot, MicroMega MTA, MTA Bio, MTA Fillapex, MTA Plus, Neo MTA Plus, Ortho MTA, Quick-Set, Retro MTA, Tech Biosealer, and TheraCal LC. It has been claimed that these materials have properties similar to those of MTA but without the drawbacks. In Part I of this review, the available information on the chemical composition of the materials listed above was reviewed and their applications for VPT was discussed. In this article, the clinical applications of MTA and other BECs will be reviewed for apexification, regenerative endodontics, perforation repair, root canal filling, root-end filling, restorative procedures, periodontal defects and treatment of vertical and horizontal root fractures. In addition, the literature regarding the possible drawbacks of these materials following their clinical applications is reviewed. These drawbacks include their discolouration potential, systemic effects and retreatability following use as a root filling material. Based on selected keywords, all publications were searched regarding the use of MTA as well as BECs for the relevant clinical applications. Numerous publications were found regarding the use of BECs for various endodontic applications. The majority of these investigations compared BECs with MTA. Despite promising results for some materials, the number of publications using BECs for various clinical applications was limited. Furthermore, most studies had several methodological shortcomings and low levels of evidence.

128. Int Endod J. 2018 Feb;51(2):177-205. doi: 10.1111/iej.12841. Epub 2017 Sep 21.

Mineral trioxide aggregate and other bioactive endodontic cements: an updated overview - part I: vital pulp therapy.

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Mineral trioxide aggregate (MTA) is a bioactive endodontic cement (BEC) mainly comprised of calcium and silicate elements. The cement was introduced by Torabinejad in the 1990s and has been approved by the Food and Drug Administration to be used in the United States in 1997. A number of new BECs have also been introduced to the market, including BioAggregate, Biodentine, BioRoot RCS, calcium-enriched mixture cement, Endo-CPM, Endocem, EndoSequence, EndoBinder, EndoSeal MTA, iRoot, MicroMega MTA, MTA Bio, MTA Fillapex, MTA Plus,
NeoMTA Plus, OrthoMTA, Quick-Set, RetroMTA, Tech Biosealer and TheraCal LC. It has been claimed that these materials have properties similar to those of MTA without its drawbacks. In this article, the chemical composition and the application of MTA and other BECs for vital pulp therapy (VPT), including

indirect pulp cap, direct pulp cap, partial pulpotomy, pulpotomy and partial pulpectomy, have been reviewed and compared. Based on selected keywords, all papers regarding chemical composition and VPT applications of BECs had been reviewed. Most of the materials had calcium and silicate in their composition. Instead of referring to the cements based on their chemical compositions, we suggest the term 'bioactive endodontic cements (BECs)', which seems more appropriate for these materials because, in spite of differences in their chemical compositions, bioactivity is a common property for all of them. Numerous articles were found regarding use of BECs as VPT agents for indirect and direct pulp capping, partial pulpotomy and cervical pulpotomy. Most of these investigations used MTA for VPT. In most studies, newly introduced materials have been compared to MTA. Some of the BECs have shown promising results; however, the number of their studies compared to investigations on MTA is limited. Most studies had several methodological shortcomings. Future investigations with rigorous methods and materials are needed.

129. Int J Dent Hyg. 2018 Feb;16(1):13-23. doi: 10.1111/idh.12283. Epub 2017 May 22.

Plaque removal with triple-headed vs single-headed manual toothbrushes-a systematic review.

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OBJECTIVE: The aim of this systematic review was to establish the effectiveness of brushing with a triple-headed manual toothbrush compared to a single-headed manual toothbrush on plaque removal.
MATERIALS AND METHODS: The MEDLINE-PubMed and Cochrane-CENTRAL databases were
searched. The inclusion criteria were clinical trials conducted with humans without fixed orthodontic appliances who were not dental care professionals. Papers that evaluated the effect of toothbrushing with a triple-headed manual toothbrush compared to a single-headed manual toothbrush on plaque removal were included. Data were extracted from the eligible studies, and a descriptive analysis was performed.
RESULT: The search retrieved 15 eligible publications including 18 relevant comparisons. Heterogeneity was most obvious with respect to the person who performed the brushing, either the participants themselves or a caregiver responsible for daily oral hygiene. Additionally, participant characteristics such as age and individual disabilities varied. A lack of appropriate data and a variation in the indices used allowed only a descriptive analysis. Of the 14 comparisons with self-performed brushing by the participants, the majority showed no difference between triple-headed and single-headed toothbrushes, with a few favouring the triple-headed. In the comparisons in which a caregiver performed

the brushing, three of the four showed that the triple-headed toothbrush performed significantly better on the reduction in plaque scores.
CONCLUSION: From this review emerges the recommendation that the use of a triple-headed manual toothbrush instead of a single-headed manual toothbrush might be favorable with respect to plaque removal in case a care-dependent individual is brushed by a caregiver.

130. Int Dent J. 2018 Apr;68(2):67-76. doi: 10.1111/idj.12320. Epub 2017 May 21.

Mechanisms of silver diamine fluoride on arresting caries: a literature review.

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OBJECTIVE: To review the evidence regarding the mechanisms of silver diamine fluoride (SDF) for arresting caries.
METHODS: A literature search was conducted using the keywords silver diamine fluoride, and its alternative names, in seven databases: PubMed, Embase and Scopus (English); China National Knowledge Infrastructure (Chinese); Bilioteca Virtual em Saude (Portuguese); Biblioteca Virtual en Salud Espana (Spanish); and

Ichushi-Web (Japanese). The titles and abstracts were screened. Full texts were retrieved for publications that studied mechanisms of actions of SDF, including its effects on remineralisation of carious lesions and on cariogenic bacteria.
RESULTS: A total of 1,123 publications were identified. Twenty-nine articles were included and they investigated the effect of SDF on cariogenic bacteria and dental hard tissues. Eleven studies investigated the antibacterial properties of SDF. They found that SDF was bactericidal to cariogenic bacteria, mainly Streptococcus mutans. It inhibited the growth of cariogenic biofilms on teeth. Twenty studies reported the remineralisation of demineralised enamel or dentine by SDF. They found that mineral loss of demineralised enamel and dentine was reduced after SDF treatment. A highly mineralised surface rich in calcium and phosphate was formed on arrested carious lesions. Four studies examined the effect of SDF on dentine collagen. They found that SDF inhibited collagenases (matrix metalloproteinases and cysteine cathepsins) and protected dentine collagen from destruction.
CONCLUSION: SDF is a bactericidal agent and reduces the growth of cariogenic bacteria. It inhibits demineralisation and promotes the remineralisation of demineralised enamel and dentine. It also hampers degradation of the dentine collagen.

131. Clin Oral Investig. 2018 Jan;22(1):339-347. doi: 10.1007/s00784-017-2118-y. Epub 2017 Apr 20.

Oral health in patients with renal disease: a longitudinal study from predialysis to kidney transplantation.

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OBJECTIVES: The aim of this longitudinal study was to compare the oral health of chronic kidney disease patients at the predialysis (baseline) and post-transplantation (follow-up) stages and to investigate differences in oral health between diabetic nephropathy and other kidney disease patients at follow-up.
MATERIALS AND METHODS: Fifty-three kidney disease patients (34 men) aged 31-86 years were followed up to 157 months. Clinical and radiological oral examinations, salivary and laboratory analyses, and oral health behavior questionnaires were conducted at the predialysis and follow-up stages at Helsinki University Hospital, Finland. Oral inflammatory burden was estimated by calculating deep periodontal pockets, periodontal inflammatory burden (PIBI), decayed, missing, and filled teeth (DMFT), and total dental indices (TDI). Results were analyzed using cross-tabulation Pearson chi-square or Fisher's exact

test and the Mann-Whitney U test, and the McNemar and Wilcoxon signed-rank test.
RESULTS: At the predialysis stage, patients more often had calculus and deep periodontal pockets; TDI, PIBI, number of teeth, and salivary flow rates were also statistically significantly higher compared to follow-up. At follow-up, diabetic nephropathy patients more often had Candida growth, more plaque, and used more drugs and had lower stimulated salivary flow than patients with other kidney diseases.
CONCLUSION: Oral health was better at follow-up than at the predialysis stage; however, attention should be given to the lower salivary flow rate and higher number of drugs used at that stage.
CLINICAL RELEVANCE: This study confirms the importance of treating oral infectious foci at the predialysis stage in order to prevent adverse outcomes after kidney transplantation.

132. Anesth Prog. Spring 2018;65(1):24-29. doi: 10.2344/anpr-65-01-02.

A Comparative Study of Oral Analgesics for Postoperative Pain After Minor Oral Surgery.

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We compared the effects of preoperative administration of diclofenac sodium, celecoxib, and acetaminophen on postoperative pain in patients undergoing minor oral surgery under general anesthesia. One hundred twenty-eight patients were randomly divided into 4 groups preoperatively treated with diclofenac sodium 50 mg, celecoxib 400 mg, acetaminophen 1000 mg, or placebo. Postoperative pain was managed using intravenous patient-controlled infusion of fentanyl. Assessments included levels of postoperative pain by using visual analog scale (VAS) scores at 4, 5, and 6 hours after administration of the test drug; consumption of fentanyl up to each time point; and time to first requirement for fentanyl. Our study demonstrated that, for diclofenac sodium and celecoxib in comparison with placebo, there were significantly lower VAS scores at 4, 5, and 6 hours after oral administration of the study drug; a longer period of time to first requirement for fentanyl after surgery; and less consumption of postoperative fentanyl. A similar analgesic effect versus placebo was noted for acetaminophen but only at the 5- and 6-hour time points. In contrast, no significant differences in VAS scores at 4 hours after administration or time to first requirement for fentanyl were observed between acetaminophen and placebo. Furthermore, no significant differences in measurements were observed between the study drugs at any time point. These findings suggest that oral administration of celecoxib 400 mg is suitable for controlling postoperative pain, and as effective as diclofenac sodium 50 mg. Acetaminophen 1000 mg also exerts analgesic effect with slower onset for postoperative pain.