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CENTRO DENTAL INTEGRAL

04
Traumatología

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Dr. Francisco Torres Lear

La trayectoria del Dr. Torres Lear es la historia de un descubrimiento vocacional inesperado. Aunque se licenció en Medicina con la firme intención de ser cardiólogo, el destino intervino mientras preparaba el MIR: aprobó el acceso a Odontología y lo que comenzó como un paso intermedio se transformó en su verdadera pasión. En la estomatología descubrió un "trabajo artesano de la salud" que le cautivó por completo, haciéndole comprender que había nacido para esta profesión.

Su enfoque va más allá de lo clínico; su mayor satisfacción reside en mejorar la autoestima, el bienestar y la calidad de vida de sus pacientes. Defensor acérrimo de la prevención y la higiene diaria, el Dr. Torres lidera el Centro Dental Torres bajo una premisa clara: para conseguir la felicidad del paciente, primero hay que cuidar a las personas que trabajan en la clínica, dotándolas de los mejores medios en una organización sólida y humana.

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CENTRO DENTAL INTEGRAL

01

Referencias científicas

Referencias científicas

Ali DS, Khan AA, Morrison A, Tetradis S, Mirza RD, El Rabbany M, Abrahamsen B, Aghaloo TL, Al-Alwani H, Al-Dabagh R, Anastasilakis AD, Bhandari M, Body JJ, Brandi ML, Brignardello-Petersen R, Brown JP, Cheung AM, Compston J, Cooper C, Diez-Perez A, Ferrari SL, Guyatt G, Hanley D, Harvey NC, Josse RG, Kendler DL, Khan S, Kim S, Langdahl BL, Magopoulos C, Masri BK, Morgan SL, Morin SN, Napoli N, Obermayer-Pietsch B, Palermo A, Pepe J, Peters E, Pierroz DD, Rizzoli R, Saunders DP, Stanford CM, Sulimani R, Taguchi A, Tanaka S, Watts NB, Zamudio J, Zillikens MC, Ruggiero SL. Antiresorptive Therapy to Reduce Fracture Risk and Effects on Dental Implant Outcomes in Patients With Osteoporosis: A Systematic Review and Osteonecrosis of the Jaw Taskforce Consensus Statement. Endocr Pract. 2025 May;31(5):686-698. doi: 10.1016/j.eprac.2025.02.016. PMID: 40335186. https://pubmed.ncbi.nlm.nih.gov/40335186/

ABSTRACT

Objective: Placement of a dental implant in a patient on antiresorptive therapy has been hypothesized to increase the risk of medication-related osteonecrosis of the jaw (MRONJ) and/or impact implant survival. In patients with osteoporosis, the risk of MRONJ with antiresorptive therapy is only marginally higher than observed in the general population.

Methods: The International ONJ Taskforce conducted a systematic review of the literature and evaluated the outcomes of implant placement in individuals with osteoporosis receiving antiresorptive therapy.

Results: The data were reviewed by the International Taskforce, and consensus was achieved on the following GRADEd recommendation. In patients with osteoporosis on antiresorptive therapy, the Taskforce suggests that antiresorptive therapy does not need to be stopped prior to proceeding with dental implant (weak recommendation, very low-quality evidence). Long-term bisphosphonate use maybe associated with a small increase in the risk of MRONJ (3 cases per 1000 patients; adjusted hazard ratio: 4.09, 95% CI: 2.75-6.09, P < .001, moderate certainty).

Conclusion: Current evidence does not suggest an association between antiresorptive therapy in patients with osteoporosis and dental implant failure. Implants may be safely placed in the presence of concomitant use of bisphosphonates or denosumab in patients with osteoporosis with no evidence of an increased risk of implant failure/compromise.

AlRowis R, Aldawood A, AlOtaibi M, Alnasser E, AlSaif I, Aljaber A, Natto Z. Medication-Related Osteonecrosis of the Jaw (MRONJ): A Review of Pathophysiology, Risk Factors, Preventive Measures and Treatment Strategies. Saudi Dent J. 2022 Mar;34(3):202-210. doi: 10.1016/j.sdentj.2022.01.003. Epub 2022 Jan 19. PMID: 35935720; PMCID: PMC9346931. https://pubmed.ncbi.nlm.nih.gov/35935720/

ABSTRACT

Medication-related osteonecrosis of the jaw (MRONJ) is a major problem that can occur in people taking certain medications such bisphosphonates and denosumab. It can be used to treat osteoporosis or cancer. Bisphosphonate exposure, dental diseases and procedures, age, sex, anatomical factors, medical issues, and hereditary factors are all variables that enhance the risk of MRONJ. Even though MRONJ and antiresorptive medications have a close association, the pathophysiology of MRONJ is unknown. Careful dental preparation and oral hygiene instructions significantly minimize the risk of osteonecrosis of the jaw (ONJ). It is ideal to start antiresorptive treatment after the completion of required dental treatment; it is not contraindicated and carries low risk in patients who are on oral antiresorptive medications for less than three years. Drug holidays are one proposed solution to address MRONJ. However, there is still inadequate evidence to support their effectiveness. The objectives of this literature review are to recognize the main diagnostic principles and risk factors and to review the pathophysiology, protective procedures and treatment modalities related to MRONJ. The following topics are covered in the review: epidemiology, diagnostic criteria, risk factors, pathogenesis and mechanism, MRONJ staging and symptoms, clinical and radiographic findings, treatment strategies, prevention and drug holiday.

Anitua E, Alkhraisat MH, Eguia A. On Peri-Implant Bone Loss Theories: Trying To Piece Together the Jigsaw. Cureus. 2023 Jan 1;15(1):e33237. doi: 10.7759/cureus.33237. PMID: 36733558; PMCID: PMC9890078. https://pubmed.ncbi.nlm.nih.gov/36733558/

ABSTRACT

This review aims to explore the plausibility of new theories on the etiopathogenesis of marginal bone loss (MBL) and peri-implantitis (PI) and to discuss possible underlying pathogenic mechanisms. The former concept of osteointegration of dental implants can now be conceptualized as a foreign body response histologically characterized by a bony demarcation in combination with chronic inflammation. Different risk factors can provoke additional inflammation and, therefore, pro-inflammatory cytokine release in soft tissues and bone, leading to an overpass of the threshold of peri-implant bone defensive and regenerative capacity. Progressive bone loss observed in MBL and PI is ultimately due to a localized imbalance in the receptor activator of nuclear factor kappaB ligand (RANKL)/Receptor activator of nuclear factor κ B (RANK)/osteoprotegerin (OPG) pathway in favor of increased catabolic activity. The genetic background and the severity and duration of the risk factors could explain differences between individuals in the threshold needed to reach an imbalanced scenario. MBL and PI pathogenesis could be better explained by the "inflammation-immunological balance" theory rather than a solely "infectious disease" conception. The link between the effect of biofilm and other risk factors leading to an imbalanced foreign body response lies in osteoclast differentiation and activation pathways (over)stimulation.

Ardaneh M, Fararouei M, Hassanzadeh J. Falls leading to fracture and nutrition among older adults: a case-control study. J Health Popul Nutr. 2023 Mar 13;42(1):18. doi: 10.1186/s41043-023-00361-x. PMID: 36915191; PMCID: PMC10009923. https://pubmed.ncbi.nlm.nih.gov/36915191/

ABSTRACT

Objectives: Injurious falls, especially those leading to bone fracture, are major causes of death and disability among older people. Our aim was to measure the association of nutritional factors and physical activity with falls leading to fracture among Iranian older adults.

Methods: This is the second phase of a previously published case-control study on 300 patients and 590 controls.

Results: In addition to the socio-economic factors that were reported before, our results revealed that consumption of fish, vegetables, fruits, and nuts reduced the risk of falling, whereas consumption of cheese, red meat, and sweets raised the risk of falls among the participants.

Conclusion: The results of our study suggested that diets rich in fish meat fruits and vegetables should be encouraged in the everyday life of older adults. We suggest health officials to take these important results into consideration when planning protective measures.

Asher S, Suominen AL, Stephen R, Ngandu T, Koskinen S, Solomon A. Clinical and Radiological Markers of Periodontal Status and Risk of Cognitive Decline and Incident Dementia. J Clin Periodontol. 2025 Aug;52(8):1082-1098. doi: 10.1111/jcpe.14173. Epub 2025 May 15. PMID: 40374321; PMCID: PMC12259399. https://pubmed.ncbi.nlm.nih.gov/40374321/

ABSTRACT

Aim: There is evidence linking tooth loss with dementia; however, similar findings for periodontitis are inconclusive.

Material and methods: We conducted cross-sectional (N = 4046) and longitudinal analyses (N = 2769) on data from the Health 2000 and 2011 surveys for establishing any associations of periodontal health with baseline cognition, 11-year risk of cognitive decline and 15-year risk of incident dementia (N = 4073; study period from 1 September 2000 to 31 December 2015). Periodontal health was assessed via multiple clinical and radiographic markers. Based on periodontal pocket depths (PPDs), we defined periodontitis as moderate or severe. Cognitive tests at baseline and follow-up were administered, and dementia diagnoses until 2015 were retrieved from health registers. Analyses included logistic and Cox proportional regression, accounting for reverse causality.

Results: Cross-sectionally, moderate periodontitis was associated with lower overall cognition (OR = 1.19:1.02-1.40), verbal fluency (OR = 1.16:1.00-1.35) and immediate recall (OR = 1.22:1.04-1.42); PPD with lower overall cognition (OR = 1.22:1.04-1.43) and verbal fluency (OR = 1.18:1.02-1.38); and bleeding on probing (BOP) with verbal fluency (OR = 1.26:1.07-1.48) and immediate recall (OR = 1.22:1.02-1.45). Longitudinally, moderate periodontitis was associated with the risk of decline in immediate recall (OR = 1.29:1.04-1.60) and severe periodontitis with verbal fluency (OR = 1.46:1.01-2.11); PPD with immediate recall (OR = 1.23:1.00-1.53); and BOP with verbal fluency (OR = 1.31:1.05-1.63). Edentulism was associated with multiple cognitive tests (OR range:1.71-1.88). No associations with the risk of incident dementia were observed.

Conclusions: Poor periodontal health may increase the risk of cognitive decline. Future studies into the underlying mechanisms are warranted.

Assery NM, Jurado CA, Assery MK, Afrashtehfar KI. Peri-implantitis and systemic inflammation: A critical update. Saudi Dent J. 2023 Jul;35(5):443-450. doi: 10.1016/j.sdentj.2023.04.005. Epub 2023 May 7. PMID: 37520600; PMCID: PMC10373087. https://pubmed.ncbi.nlm.nih.gov/37520600/

ABSTRACT

Peri-implantitis is an inflammatory condition induced by bacterial biofilm that affects the soft and hard tissues surrounding dental implants, compromising the success of implant therapy. Recent studies have highlighted the potential links between peri-implant health and systemic inflammation, including uncontrolled diabetes mellitus, psychological stress, cardiovascular disease, obesity, and infectious diseases such as COVID-19. As an inflammatory disease, peri-implantitis may trigger systemic inflammation by elevating circulating levels of pro-inflammatory cytokines, which could have unknown impacts on overall health. While the relationship between periodontal health and systemic conditions is better understood, the association between peri-implant disease and systemic inflammation remains unclear. Therefore, this comprehensive review aims to summarize the most recent evidence on the relationship between peri-implantitis and systemic inflammation, focusing on biological complications, microbiology, and biomarkers. This review aims to enhance our understanding of the links between peri-implantitis and systemic inflammation and promote further research in this field by discussing the latest insights and clinical implications.

Batisse C, El Osta N, Cousson PY. Full-Mouth Digital Dental Rehabilitation Under General Anesthesia in a Post-Treatment Intraoral Squamous Cell Carcinoma Patient: A Case Report. Healthcare (Basel). 2025 Apr 19;13(8):940. doi: 10.3390/healthcare13080940. PMID: 40281889; PMCID: PMC12026995. https://pubmed.ncbi.nlm.nih.gov/40281889/

ABSTRACT

Background: The treatment of head and neck cancer primarily involves surgical tumor removal combined with radiotherapy and/or chemotherapy. It often leads to significant side effects, impacting the anatomical structures of the oral cavity and resulting in major functional, esthetic, and socio-relational alterations. Case presentation: This clinical report aims to demonstrate the effectiveness of a hospital-based approach incorporating general anesthesia (GA) and computer-aided design and manufacturing (CAD/CAM) technology in the oral rehabilitation of a 58-year-old woman in remission from intraoral squamous cell carcinoma of the mandibular symphysis. The patient presented with oral pain, radiation-induced caries, reduced occlusal vertical dimension, and severely compromised teeth. Treatment Approach: The treatment plan included the removal of two non-restorable teeth, root canal treatment for the remaining teeth, and the placement of ceramic crowns and a partial removable prosthesis. Due to the complexity of the case and the patient's limitations, the treatment was performed under GA, allowing for a staged approach. Digital technologies, including intraoral scanning and CAD-CAM, enhanced precision and patient comfort. This approach facilitated tooth preservation and minimized the number of extractions while achieving satisfactory functional and esthetic outcomes. Conclusion: The case highlights the value of GA and digital techniques in managing special-needs patients with a history of irradiated head and neck cancer.

Bell J, Turabi R, Olsen SU, Sheehan KJ, Geirsdóttir ÓG. Interdisciplinary Oral Nutrition Support and Supplementation After Hip Fracture Surgery in Older Adult Inpatients: A Global Cross-Sectional Survey (ONS-STUDY). Nutrients. 2025 Jan 10;17(2):240. doi: 10.3390/nu17020240. PMID: 39861370; PMCID: PMC11767526. https://pubmed.ncbi.nlm.nih.gov/39861370/

ABSTRACT

Background: Malnutrition predicts poor outcomes following hip fracture, affecting patient recovery, healthcare performance, and costs. Evidence-based guidelines recommend multicomponent, interdisciplinary nutrition care to improve intake, reduce complications, and enhance outcomes. This study examines global variation in oral nutrition support for older (65+ years) hip fracture inpatients.

Methods: A global survey was conducted as part of a broader program to improve interdisciplinary nutrition care. The protocol was based on evidence-based guidelines, reviewed by experts, and piloted for validity. Recruitment used snowball sampling to achieve diversity across income levels, countries, and healthcare roles.

Results: The survey (July-September 2023) recruited 308 participants from 46 countries across five global regions. Respondents primarily worked in acute teaching (57.5%) and non-teaching (17.5%) hospitals, representing medical (48.4%), nursing (28.2%), and allied health (17.9%) roles. Findings revealed a global knowledge-to-practice gap in multicomponent nutrition care, across providing high-protein/energy food and fluids (median: "half the time"), post-operative provision of oral nutritional supplements (median: "half the time") and continuation for one month with assessment (median: "not very often"), and nutritional education (median: "not very often"). Only 17.9% of respondents reported routine provision ("often" and "nearly always or always") of high-protein/energy food, supplements, and education. Substantial regional variation showed Western Pacific respondents perceiving the lowest provision across multicomponent processes. Interdisciplinary, multicomponent interventions were seen as a potential opportunity requiring further exploration.

Conclusions: Major gaps persist in implementing evidence-based, interdisciplinary, multicomponent nutrition care for older adults with hip fractures. A targeted implementation approach is the next step to addressing the knowledge-to-practice gap.

Bertolini M, Clark D. Periodontal disease as a model to study chronic inflammation in aging. Geroscience. 2024 Aug;46(4):3695-3709. doi: 10.1007/s11357-023-00835-0. Epub 2023 Jun 7. PMID: 37285008; PMCID: PMC11226587. https://pubmed.ncbi.nlm.nih.gov/37285008/

ABSTRACT

Periodontal disease is a chronic inflammatory condition that results in the destruction of the teeth supporting tissues, eventually leading to the loss of teeth and reduced quality of life. In severe cases, periodontal disease can limit proper nutritional intake, cause acute pain and infection, and cause a withdrawal from social situations due to esthetic and phonetic concerns. Similar to other chronic inflammatory conditions, periodontal disease increases in prevalence with age. Research into what drives periodontal disease pathogenesis in older adults is contributing to our general understanding of age-related chronic inflammation. This review will present periodontal disease as an age-related chronic inflammatory disease and as an effective geroscience model to study mechanisms of age-related inflammatory dysregulation. The current understanding of the cellular and molecular mechanisms that drive inflammatory dysregulation as a function of age will be discussed with a focus on the major pathogenic immune cells in periodontal disease, which include neutrophils, macrophages, and T cells. Research in the aging biology field has shown that the age-related changes in these immune cells result in the cells becoming less effective in the clearance of microbial pathogens, expansion of pathogenic subpopulations, or an increase in pro-inflammatory cytokine secretions. Such changes can be pathogenic and contribute to inflammatory dysregulation that is associated with a myriad of age-related disease including periodontal disease. An improved understanding is needed to develop better interventions that target the molecules or pathways that are perturbed with age in order to improve treatment of chronic inflammatory conditions, including periodontal disease, in older adult populations.

Boston B, Ipe D, Capitanescu B, Gresita A, Hamlet S, Love R, Hadjiargyrou M, Huang CL, Nusem I, Miroiu RI, Popa-Wagner A, Warnke PH, Petcu EB. Medication-related osteonecrosis of the jaw: A disease of significant importance for older patients. J Am Geriatr Soc. 2023 Aug;71(8):2640-2652. doi: 10.1111/jgs.18414. Epub 2023 May 24. PMID: 37224415. https://pubmed.ncbi.nlm.nih.gov/37224415/

ABSTRACT

Background: Medication-related osteonecrosis of the jaw (MRONJ) is clinically defined as a non-healing jawbone ulcerative-necrotic lesion appearing after dental therapy or minor trauma in patients treated previously with anti-resorptive, anti-angiogenic or immunomodulators. Older patients with osteoporosis and cancer receive these pharmacological agents regularly. As these patients are long-term survivors, efficient treatment is of paramount importance for their quality of life.

Methods: Literature searches via PubMed were conducted to identify relevant MRONJ studies. Basic information on MRONJ classification, clinical features, and pathosphysiology is presented herein as well as various clinical studies dealing with MRONJ in patients with osteoporosis and cancer. Lastly, we discuss current managment of patients and new trends in treatment of MRONJ.

Results: Although close follow-up and local hygiene have been advocated by some authors, severe forms of MRONJ are not responsive to conservative therapy. At present, there is no "gold standard" therapy for this condition. However, as the physiopathological basis of MRONJ is represented by the anti-angiogenic action of various pharmacological agents, new methods to increase and promote local angiogenesis and vascularization have recently been successfully tested in vitro, limited preclinical studies, and in a pilot clinical study.

Conclusions: It appears that the best method implies application on the lesion of endothelial progenitor cells as well as pro-angiogenic factors such as Vascular Endothelial Growth Factor (VEGF) and other related molecules. More recently, scaffolds in which these factors have been incorporated have shown positive results in limited trials. However, these studies must be replicated to include a large number of cases before any official therapeutic protocol is adopted.

Brahmbhatt Y, Alqaderi H, Chinipardaz Z. Association Between Severe Periodontitis and Cognitive Decline in Older Adults. Life (Basel). 2024 Dec 3;14(12):1589. doi: 10.3390/life14121589. PMID: 39768299; PMCID: PMC11678878. https://pubmed.ncbi.nlm.nih.gov/39768299/

ABSTRACT

Background: Periodontal disease, a progressive inflammatory condition, disrupts the oral microbiome and releases inflammatory cytokines, leading to systemic issues, including cognitive decline. This study investigates the association between severe periodontitis and cognitive decline, exploring the role of alkaline phosphatase (ALP), an enzyme linked to systemic inflammation, as an effect modifier. (2) Methods: We analyzed cross-sectional data from the 2013-2014 National Health and Nutrition Examination Survey (NHANES). Severe periodontitis was defined using the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) case definition. A weighted multivariable logistic regression model assessed the association between severe periodontitis and cognitive decline. An interaction term examined ALP's role as an effect modifier. (3) Results: This study included 1265 participants aged 65 and older. After adjusting for confounders, each one-point increase in cognitive function score was associated with a 2% decrease in the odds of severe periodontitis (OR = 0.98; 95% CI = 0.97-0.99; p = 0.008). ALP was a significant effect modifier in the relationship between severe periodontitis and cognitive decline. (4) Conclusions: This study, using a representative U.S. adult population aged 65 and over, suggests that lower cognitive performance correlates with higher likelihood of severe periodontitis. ALP enhances the association between severe periodontitis and cognitive decline.

Brauner E, Laudoni F, Amelina G, Cantore M, Armida M, Bellizzi A, Pranno N, De Angelis F, Valentini V, Di Carlo S. Dental Management of Maxillofacial Ballistic Trauma. J Pers Med. 2022 Jun 5;12(6):934. doi: 10.3390/jpm12060934. Erratum in: J Pers Med. 2023 Mar 17;13(3):535. doi: 10.3390/jpm13030535. PMID: 35743719; PMCID: PMC9225066. https://pubmed.ncbi.nlm.nih.gov/35743719/

ABSTRACT

Maxillofacial ballistic trauma represents a devastating functional and aesthetic trauma. The extensive damage to soft and hard tissue is unpredictable, and because of the diversity and the complexity of these traumas, a systematic algorithm is essential. This study attempts to define the best management of maxillofacial ballistic injuries and to describe a standardized, surgical and prosthetic rehabilitation protocol from the first emergency stage up until the complete aesthetic and functional rehabilitation. In low-velocity ballistic injuries (bullet speed <600 m/s), the wound is usually less severe and not-fatal, and the management should be based on early and definitive surgery associated with reconstruction, followed by oral rehabilitation. High-velocity ballistic injuries (bullet speed >600 m/s) are associated with an extensive hard and soft tissue disruption, and the management should be based on a three-stage reconstructive algorithm: debridement and fixation, reconstruction, and final revision. Rehabilitating a patient with ballistic trauma is a multi-step challenging treatment procedure that requires a long time and a multidisciplinary team to ensure successful results. The prosthodontic treatment outcome is one of the most important parameters by which a patient measures the restoration of aesthetic, functional, and psychological deficits. This study is a retrospective review: twenty-two patients diagnosed with outcomes of ballistic traumas were identified from the department database, and eleven patients met the inclusion criteria and were enrolled.

Brenner JD, Atallah M, Yatsonsky D, Casabianca A, Hanna M. Higher Onset of Periprosthetic Joint Infections in Patients With Teeth Compared to Those Without Teeth. Cureus. 2024 Jul 2;16(7):e63696. doi: 10.7759/cureus.63696. PMID: 39092322; PMCID: PMC11293887. https://pubmed.ncbi.nlm.nih.gov/39092322/

ABSTRACT

Introduction: Bacteria can enter the bloodstream through simple actions such as brushing teeth, flossing, and even chewing food, increasing the chance of hematogenous seeding of prosthetic joints. Antibiotics before dental work in patients with orthopedic hardware is a topic of debate because of concerns for antibiotic resistance. Patients with dentures theoretically avoid this risk due to the lack of teeth and their maintenance. Most periprosthetic joint infections (PJIs) that occur in the first six months after surgery are due to wound infection, whereas late PJIs are more commonly caused by hematogenous seeding.

Materials and methods: Charts from patients who received primary total joint arthroplasty were interrogated for the condition of their teeth at the time of operation. If the patient had a PJI, the time from surgery and the organism responsible were noted. Multivariate linear regressions were performed for statistical analysis to compare rates of dental status, infection, comorbidities, and demographics.

Results: From the 1,500 charts reviewed, patients with teeth and edentulous had similar rates of comorbidities. PJI patients had higher rates of chronic kidney disease than patients who did not have the infection. The overall rate of infections in patients with teeth was 2.14%, close to the national average. The rate of infection in patients without teeth was 0.78%. Patients with teeth have a higher rate of infection one month or longer from surgery than edentulous patients.

Conclusions: There was an increased infection rate in patients with teeth at six months and greater since the primary total joint arthroplasty. The organisms responsible for many of the PJIs are commonly found in the mouth of humans. Having teeth is a potential risk factor for late PJI.

Brzezinski A, Mennona S, Imbergamo C, Brzezinska K, Kayiaros S. A Rare Case of Periprosthetic Joint Infection Caused by a Periodontal Pathogen, Slackia exigua: A Case Report. JBJS Case Connect. 2021 Feb 22;11(1). doi: 10.2106/JBJS.CC.20.00617. PMID: 33957639. https://pubmed.ncbi.nlm.nih.gov/33957639/

ABSTRACT

Case: A 72-year-old woman with a history of right total hip arthroplasty and subsequent revision 18 years ago developed right hip periprosthetic joint infection with significant bone destruction caused by Slackia exigua. She underwent a dental cavity filling without prophylactic antibiotics before presentation that may have contributed to development of the infection. The patient required total hip revision and prolonged antibiotic therapy to eradicate the bacteria.

Conclusion: This case is an example that certain high-risk patients undergoing invasive dental procedures are at risk of developing prosthetic joint infection.

Briguglio M, Wainwright TW, Latella M, Ninfa A, Cordani C, Colombo C, Banfi G, Fran-

cetti L, Corbella S. A Proposal for a Multidisciplinary Integrated Oral Health Network for Patients Undergoing Major Orthopaedic Surgery (IOHN-OS). Geriatrics (Basel). 2024 Mar 19;9(2):39. doi: 10.3390/geriatrics9020039. PMID: 38525756; PMCID: PMC10961760. https://pubmed.ncbi.nlm.nih.gov/38525756/

ABSTRACT

The passing of the years of life physiologically leads to the accumulation of changes in tissues in the oral cavity, influencing dentition, chewing and swallowing mechanisms, and the oral microbiota. Some diseases and medications can aggravate oral symptoms and negatively influence eating behaviours, increasing the likelihood of becoming malnourished. This could make older individuals more vulnerable to complications when undergoing major orthopaedic surgery. Hidden infection foci in the oral cavity are a recognised cause of post-operative periprosthetic joint infections. Dysfunctional oral problems might also compromise feeding after surgery when good nutrition represents a fundamental aspect of a proper recovery. To manage these shortcomings, in this article, the authors hypothesise a multidisciplinary path of care named the Integrated Oral Health Network applied to major Orthopaedic Surgery (IOHN-OS). This peri-operative initiative would include pre-operative oral health screening and risk management by a dental team, patient education programmes before and after surgery, and bedside gerodontology actions like oral care and meal and eating support for fragile individuals. The IOHN-OS has the potential to reshape the concept of suitability for major orthopaedic surgery and generate momentum for designing community-based surveillance programmes that can keep the mouths of older subjects healthy for a long time.

Carballo Á, López-Dequidt I, Custodia A, Botelho J, Aramburu-Núñez M, Machado V, Pías-Peleteiro JM, Ouro A, Romaus-Sanjurjo D, Vázquez-Vázquez L, Jiménez-Martín I, Aguiar P, Rodríguez-Yáñez M, Aldrey JM, Blanco J, Castillo J, Sobrino T, Leira Y. Association of periodontitis with cognitive decline and its progression: Contribution of blood-based biomarkers of Alzheimer's disease to this relationship. J Clin Periodontol. 2023 Nov;50(11):1444-1454. doi: 10.1111/jcpe.13861. Epub 2023 Aug 16. PMID: 37584311. https://pubmed.ncbi.nlm.nih.gov/37584311/

ABSTRACT

Aim: To assess whether periodontitis is associated with cognitive decline and its progression as well as with certain blood-based markers of Alzheimer's disease.

Materials and methods: Data from a 2-year follow-up prospective cohort study (n = 101) was analysed. Participants with a previous history of hypertension and aged ≥60 years were included in the analysis. All of them received a full-mouth periodontal examination and cognitive function assessments (Addenbrooke's Cognitive Examination (ACE) and Mini-Mental State Examination [MMSE]). Plasma levels of amyloid beta (Aκ)1-40 , Aκ 1-42 , phosphorylated and total Tau (p-Tau and t-Tau) were determined at baseline, 12 and 24 months.

Results: Periodontitis was associated with poor cognitive performance (MMSE: κ = -1.5 [0.6]) and progression of cognitive impairment (hazard ratio [HR] = 1.8; 95% confidence interval: 1.0-3.1). Subjects with periodontitis showed greater baseline levels of p-Tau (1.6 [0.7] vs. 1.2 [0.2] pg/mL, p < .001) and Aκ 1-40 (242.1 [77.3] vs. 208.2 [73.8] pg/mL, p = .036) compared with those without periodontitis. Concentrations of the latter protein also increased over time only in the periodontitis group (p = .005).

Conclusions: Periodontitis is associated with cognitive decline and its progression in elderly patients with a previous history of hypertension. Overexpression of p-Tau and Aκ 1-40 may play a role in this association.

Cho J, Feldman G, Tomlinson R, Taub D, Diecidue R. Medication-related osteonecrosis of the jaw (MRONJ) systemic review: mevalonate pathway mechanisms explored. Oral Surg Oral Med Oral Pathol Oral Radiol. 2024 Oct;138(4):475-483. doi: 10.1016/j.oooo.2024.05.014. Epub 2024 Jun 3. PMID: 38987158. https://pubmed.ncbi.nlm.nih.gov/38987158/

ABSTRACT

Medication-related osteonecrosis of the jaw (MRONJ) is a rare, but devastating condition caused by bisphosphonates, receptor activator of nuclear factor kappa-B ligand inhibitors, anti-angiogenic medications, and disease-modifying antirheumatic drugs. While the clinical spectrum of MRONJ has a wide range, there is a subgroup of patients that do not improve with antibiotics and conservative surgical debridement resulting in pathologic fractures, draining fistulas, and/or osteomyelitis. For the severely affected individuals, the only cure is surgical resection with micro-vascular free flap reconstruction. The etiology of MRONJ is unknown because of the lack of understanding of the biological underpinnings of the disorder connected to the mechanisms of action of the various medications. This limited knowledge has resulted in the classification of patients by clinical presentation rather than underlying pathology. Therefore, the aim of this article is to present a mechanistic framework of MRONJ through the mevalonate pathway in the context of the medications that are known to induce it and explore potential novel therapeutics.

Chung PC, Chan TC. Physical frailty and oral health as risk factors for low bone density in community-dwelling residents. Sci Rep. 2024 Aug 5;14(1):18131. doi: 10.1038/s41598-024-68958-8. PMID: 39103423; PMCID: PMC11300787. https://pubmed.ncbi.nlm.nih.gov/39103423/

ABSTRACT

This study aimed to explore the association between bone mineral density and physical frailty including nutrition, muscle mass, and oral function. We included participants aged 35-80 years and examined their bone mineral density, serum albumin level, body composition, and variance of hue (VOH) of two-colored gum. We also used the geriatric oral health assessment index (GOHAI). These data were used to calculate the geriatric nutritional risk index (GNRI) and skeletal muscle index (SMI). Multinomial logistic regression was performed to assess the relationship between GNRI, SMI, VOH, GOHAI, and bone mineral density after adjusting for comorbidities, including hypertension, diabetes mellitus, and previous bone fracture. We included 228 participants and classified their bone mineral density as normal, osteopenic, or osteoporotic. Older age (odds ratio (OR) 1.15, 95% confidence interval (CI) [1.08, 1.23]), low GNRI (OR 0.90, 95% CI [0.83, 0.98]), low SMI (OR 0.43, 95% CI [0.27, 0.68]), and high VOH (OR 1.08, 95% CI [1.01, 1.17]) were significantly associated with osteoporosis. Older age (OR 1.08, 95% CI [1.04, 1.11]) and low GNRI (OR 0.93, 95% CI [0.87, 0.99]) were significantly associated with osteopenia. GNRI, SMI, and VOH were significantly associated with osteoporosis among male participants. Although the multinomial logistic regression analysis indicated that GNRI, SMI, VOH, and GOHAI were not significantly associated with osteoporosis or osteopenia among

female participants, the demographic distribution showed that older age, low GNRI, and low SMI were significantly associated with bone mineral density decline. Physical frailty, including nutritional decline, muscle mass loss, and poor oral status, is associated with low bone density. This easy-to-use tool can be used to detect osteoporosis early and to prevent osteoporosis and osteoporosis-related fractures.

Davis S, Simpson E, Hamilton J, James MM, Rawdin A, Wong R, Goka E, Gittoes N, Selby P. Denosumab, raloxifene, romosozumab and teriparatide to prevent osteoporotic fragility fractures: a systematic review and economic evaluation. Health Technol Assess. 2020 Jun;24(29):1-314. doi: 10.3310/hta24290. PMID: 32588816; PMCID: PMC7357239. https://pubmed.ncbi.nlm.nih.gov/32588816/

ABSTRACT

Background: Fragility fractures are fractures that result from mechanical forces that would not ordinarily result in fracture.

Objectives: The objectives were to evaluate the clinical effectiveness, safety and cost-effectiveness of non-bisphosphonates {denosumab [Prolia®; Amgen Inc., Thousand Oaks, CA, USA], raloxifene [Evista®; Daiichi Sankyo Company, Ltd, Tokyo, Japan], romosozumab [Evenity®; Union Chimique Belge (UCB) S.A. (Brussels, Belgium) and Amgen Inc.] and teriparatide [Forsteo®; Eli Lilly and Company, Indianapolis, IN, USA]}, compared with each other, bisphosphonates or no treatment, for the prevention of fragility fracture.

Data sources: For the clinical effectiveness review, nine electronic databases (including MEDLINE, EMBASE and the World Health Organization International Clinical Trials Registry Platform) were searched up to July 2018.

Review methods: A systematic review and network meta-analysis of fracture and femoral neck bone mineral density were conducted. A review of published economic analyses was undertaken and a model previously used to evaluate bisphosphonates was adapted. Discrete event simulation was used to estimate lifetime costs and quality-adjusted life-years for a simulated cohort of patients with heterogeneous characteristics. This was done for each non-bisphosphonate treatment, a strategy of no treatment, and the five bisphosphonate treatments previously evaluated. The model was populated with effectiveness evidence from the systematic review and network meta-analysis. All other parameters were estimated from published sources. An NHS and Personal Social Services perspective was taken, and costs and benefits were discounted at 3.5% per annum. Fracture risk was estimated from patient characteristics using the QFracture® (QFracture-2012 open source revision 38, Clinrisk Ltd, Leeds, UK) and FRAX® (web version 3.9, University of Sheffield, Sheffield, UK) tools. The relationship between fracture risk and incremental net monetary benefit was estimated using non-parametric regression. A probabilistic sensitivity analysis and scenario analyses were used to assess uncertainty.

Results: Fifty-two randomised controlled trials of non-bisphosphonates were included in the clinical effectiveness systematic review and an additional 51 randomised controlled trials of bisphosphonates were included in the network meta-analysis. All treatments had beneficial effects compared with placebo for vertebral, non-vertebral and hip fractures, with hazard ratios varying from 0.23 to 0.94, depending on treatment and fracture type. The effects on vertebral fractures and the percentage change in bone mineral density were statistically significant for all treatments. The rate of serious adverse events varied across trials (0-33%), with most between-group differences not being statistically significant for comparisons with placebo/no active treatment, non-bisphosphonates or bisphosphonates. The incremental cost-effectiveness ratios were > £20,000 per quality-adjusted life-year for all non-bisphosphonate interventions compared with no treatment across the range of QFracture and FRAX scores expected in the population eligible for fracture risk assessment. The incremental cost-effectiveness ratio for denosumab may fall below £30,000 per quality-adjusted life-year at very high levels of risk or for high-risk patients with specific characteristics. Raloxifene was dominated by no treatment (resulted in fewer quality-adjusted life-years) in most risk categories.

Limitations: The incremental cost-effectiveness ratios are uncertain for very high-risk patients.

Conclusions: Non-bisphosphonates are effective in preventing fragility fractures, but the incremental cost-effectiveness ratios are generally greater than the commonly applied threshold of £20,000-30,000 per quality-adjusted life-year.

Dibello V, Custodero C, Cavalcanti R, Lafornara D, Dibello A, Lozupone M, Daniele A, Pilotto A, Panza F, Solfrizzi V. Impact of periodontal disease on cognitive disorders, dementia, and depression: a systematic review and meta-analysis. Geroscience. 2024 Oct;46(5):5133-5169. doi: 10.1007/s11357-024-01243-8. Epub 2024 Jun 28. PMID: 38943006; PMCID: PMC11336026. https://pubmed.ncbi.nlm.nih.gov/38943006/

ABSTRACT

A growing body of research suggested that there was a link between poor periodontal health and systemic diseases, particularly with the early development of cognitive disorders, dementia, and depression. This is especially true in cases of changes in diet, malnutrition, loss of muscular endurance, and abnormal systemic inflammatory response. Our study aimed to determine the extent of these associations to better target the multi-level healthy aging challenge investigating the impact of periodontal disease on cognitive disorders (cognitive impairment and cognitive decline), dementia, and depression. We conducted a comprehensive literature search up to November 2023 using six different electronic databases. Two independent researchers assessed the eligibility of 7363 records against the inclusion criteria and found only 46 records that met the requirements. The study is registered on PROSPERO (CRD42023485688). We generated random effects pooled estimates and 95% confidence intervals (CI) to evaluate whether periodontal disease increased the risk of the investigated outcomes. The quality assessment revealed moderate quality of evidence and risk of bias. Periodontal disease was found to be associated with both cognitive disorders (relative risk (RR) 1.25, 95% CI 1.11-1.40, in the analysis of cross-sectional studies); cognitive impairment (RR 3.01, 95% CI 1.52-5.95 for longitudinal studies, cognitive decline); and dementia (RR 1.22, 95% CI 1.10-1.36). However, no significant increased risk of depression among subjects with periodontal disease was found (RR 1.07, 95% CI 0.95-1.21). Despite the association with two of the three explored outcomes, the available evidence on periodontal diseases and dementia, cognitive disorders, and depression is controversial due to several limitations. Therefore, further investigations involving validated and standardized tools are required.

Dibello V, Lobbezoo F, Solfrizzi V, Custodero C, Lozupone M, Pilotto A, Dibello A, Santarcangelo F, Grandini S, Daniele A, Lafornara D, Manfredini D, Panza F. Oral health indicators and bone mineral density disorders in older age: A systematic review. Ageing Res Rev. 2024 Sep;100:102412. doi: 10.1016/j.arr.2024.102412. Epub 2024 Jul 9. PMID:

38992442. https://pubmed.ncbi.nlm.nih.gov/38992442/

ABSTRACT

As we age, maintaining good oral health becomes increasingly crucial for performing daily tasks. Age-related physiological decline can disrupt various biological systems, causing a significant challenge for geriatric dentistry. A systematic review of the literature using six different electronic databases was conducted to investigate the relationship between oral health indicators and bone mineral density disorders in older adults. The study is registered as a priori protocol on PROSPERO (CRD42023403340). A minimum age of 60 years was the main inclusion criterion for all original research articles. Two independent researchers assessed the eligibility of 19,362 records against the inclusion criteria and found 12 articles fitting the eligibility requirements. Five different indicators of poor oral health [number of teeth, periodontal disease, general oral health (dental caries prevalence and dental treatment needs), masticatory function, and occlusal force)] were found related to three outcomes linked to bone mineral density disorders (osteoporosis, fractures, and decreased bone mineral density), regardless of the adopted assessment tools. The number of teeth was negatively associated with fractures and a decreased bone mineral density, while periodontal disease was positively associated with osteoporosis and a decreased bone mineral density. Masticatory function was associated only with osteoporosis, while general oral health was associated only with fractures and occlusal force only with bone mineral density. The oral health indicator most frequently associated with outcomes linked to bone mineral density disorders was the number of teeth. The present findings could help to assess the contribution of each oral health indicator to the development of bone mineral density disorders in older age.

Dioguardi M, Di Cosola M, Copelli C, Cantore S, Quarta C, Nitsch G, Sovereto D, Spirito F, Caloro GA, Cazzolla AP, Aiuto R, Cascardi E, Greco Lucchina A, Lo Muzio L, Ballini A, Mastrangelo F. Oral bisphosphonate-induced osteonecrosis complications in patients undergoing tooth extraction: a systematic review and literature updates. Eur Rev Med Pharmacol Sci. 2023 Jul;27(13):6359-6373. doi: 10.26355/eurrev_202307_32996. PMID: 37458653. https://pubmed.ncbi.nlm.nih.gov/37458653/

ABSTRACT

Objective: Bisphosphonates, the most common anti-resorptive medications, are internalized by osteoclasts, where they inhibit the macrophage colony-stimulating factor (M-CSF) pathway, preventing their differentiation, inhibiting anchorage to the cell membrane, and inducing apoptosis. In patients undergoing oral bisphosphonate therapy, oral surgery involves a high risk of developing drug-related osteonecrosis of the jaws (BRONJ/MRONJ), among the possible complications.

Materials and methods: A systematic search was carried out on the PubMed, Scopus and Cochrane Library search engines, using the keywords "oral bisphosphonates AND tooth extraction", "third molar extraction AND oral bisphosphonates". In addition, we manually evaluated the articles included in references from other sources and an analysis of the Gray Literature was performed. A secondary outcome was to evaluate the assessment of pharmacological (antibiotics) use in the BRONJ/MRONJ management. The revision protocol followed the indications of the Cochrane Handbook, and was registered in the INPLASY database, while the drafting of the manuscript was based on PRISMA.

Results: The results of the systematic review, after the study identification and selection process, included a total of 7 studies: 4 retrospective studies, 2 prospective studies and 1 case report. The main complication was represented by osteonecrosis of the jaws, which appears to be related to the duration of treatment with bisphosphonates; in addition, data regarding the anatomical location of post-extraction sites, the sex and age of patients, comorbidities and various systemic risk factors were extrapolated. The most frequent post-extraction complication in patients treated with oral bisphosphonates is osteonecrosis of the jaws, with a significant prevalence in the posterior region of the mandible. In some cases, delayed healing of the surgical wound was also found; moreover, the duration of exposure to oral bisphosphonates influences the onset of complications.

Conclusions: Ongoing studies continue to unravel the role of the oral environment response in alveolar bone homeostasis and how it might contribute to the induction of BRONJ/MRONJ. Approaching the problem from this perspective could provide new directions for the prevention of BRONJ/MRONJ and expand our understanding of the unique oral microenvironment.

Egerci OF, Yapar A, Dogruoz F, Selcuk H, Kose O. Preventive strategies to reduce the rate of periprosthetic infections in total joint arthroplasty; a comprehensive review. Arch Orthop Trauma Surg. 2024 Dec;144(12):5131-5146. doi: 10.1007/s00402-024-05301-w. Epub 2024 Apr 18. PMID: 38635048; PMCID: PMC11602800. https://pubmed.ncbi.nlm.nih.gov/38635048/

ABSTRACT

The increasing frequency of total hip (THA) and knee arthroplasties (TKA) is marred by the rise in periprosthetic joint infections (PJIs) and surgical site infections (SSIs), with PJIs incurring costs over $1.62 billion as of 2020 and individual case management averaging $90,000. SSIs additionally burden the U.S. healthcare economy with billions in expenses annually. PJI prevalence in primary THA and TKA ranges from 0.5% to 2.4%, spiking to 20% in revisions and representing 25% of TKA revision causes. Projections estimate up to 270,000 annual PJI cases by 2030. Often caused by gram-positive bacteria, particularly methicillin-resistant staphylococci, these infections demand preventive measures. This review dissects PJI prevention across preoperative, intraoperative, and perioperative phases, aligning with evidence-based CDC and WHO guidelines. Preoperative measures include managing diabetes, obesity, tobacco use, Staphylococcus aureus screening and nasal decolonization, nutritional optimization, and management of inflammatory arthropathies. Intraoperatively, antibiotic prophylaxis, skin preparation, operative room environmental controls, surgical technique precision, and irrigation options are scrutinized. Perioperative concerns focus on anticoagulation, blood management, and infection risk mitigation. Integrating these strategies promotes a patient-centric care model, aiming to reduce PJI incidence, improve patient outcomes, and increase care cost-effectiveness in joint arthroplasty.

Fenske F, Krause L, Meyer S, Kujat B, Repmann J, Neuhaus M, Zimmerer R, Roth A, Lethaus B, Ziebolz D, Schmalz G. Oral Health Screening for Risk Reduction for Early Periprosthetic Joint Infections of Hip and Knee Endoprostheses-Results of a Prospective Cohort Study. J Clin Med. 2023 Jul 3;12(13):4451. doi: 10.3390/jcm12134451. PMID: 37445486; PMCID: PMC10342984. https://pubmed.ncbi.nlm.nih.gov/37445486/

ABSTRACT

This prospective observational study had two aims: (I) to assess whether a preoperative dental screening before endoprosthesis (EP) implantation with need-based dental intervention would decrease the prevalence of periprosthetic joint infection (PJI) and (II) to evaluate whether instructed orthopedic surgeons would achieve similar results in oral screening as dentists. The preoperative oral health statuses of the patients, prior to EP insertion, were either evaluated by the patients' general dentists (Ia) or, if the patient had not visited a general dentist, by an instructed orthopedic surgeon (Ib). Both the dentist and orthopedic surgeon used standardized risk estimation (low risk, moderate risk, and high risk) for an oral-health-related infectious complication after EP insertion, including a recommendation for further management of the patient. If required, a need-based dental rehabilitation was performed. In addition, retrospective data evaluation of a comparison group (II) was performed, which had not been screened orally preoperatively. A total of 777 patients (screening group (I): n = 402, of which 229 were screened by a dentist (Ia), 173 were screened by an orthopedic surgeon (Ib); comparison group (II): n = 375) were included. No general association between early infection rate and preoperative oral screening in general was found (1% PJI in screening group (I), 1.6% PJI in comparison group (II); p = 0.455). However, screening performance (dentist vs. orthopedic surgeon) had a significant impact on the prevalence of developed PJIs (p = 0.021). Thereby, 100% of observed infections in the screening group (I) occurred in the group with previous oral screening by an orthopedic surgeon (Ib). Furthermore, the C-reactive protein (CRP) value at discharge was significantly lower when general preoperative oral screening had been performed (group I vs. group II, p = 0.03). Only preoperative oral screening by a dentist had the potential to reduce oral-focus-associated EP infections; therefore, increased attention should be paid to the further promotion of interdisciplinary work between dentists and orthopedic surgeons. Dental screenings, using objectifiable criteria, as applied in this study, seem reasonable but require further validation in larger cohorts.

Fenske F, Kujat B, Krause L, Meyer S, Sander AK, Repmann J, Neuhaus M, Haak R, Roth A, Lethaus B, Ziebolz D, Schmalz G. Preoperative dental screening can reduce periprosthetic infections of hip and knee endoprostheses in the first month after surgery: results of a cohort study. Infection. 2024 Apr;52(2):535-543. doi: 10.1007/s15010-023-02128-2. Epub 2023 Dec 7. PMID: 38060067; PMCID: PMC10954939. https://pubmed.ncbi.nlm.nih.gov/38060067/

ABSTRACT

Purpose: The oral cavity and, in particular, potential oral foci might pose a risk of periprosthetic joint infection (PJI). The aim of this cohort study was to determine whether practical preoperative dental screening would reduce the prevalence of early PJI in the first month after surgery.

Methods: Patients attending a specialized endoprosthesis implantation clinic between 2018 and 2022 were recruited. Two groups were examined. The test group consisted of patients attending the clinic between 2020 and 2022 and who were referred to their family dentist using a standardized form. The comparison group consisted of patients who were treated in the clinic between 2018 and 2020. They were not referred to their family dentist. The two groups were compared for the prevalence of PJI. Univariate analysis followed by multiple logistic regression was performed to confirm risk factors for PJI in this cohort.

Results: 2560 individuals (test group: 1227, comparison group: 1333) were included. The prevalence of PJI was significantly lower in the test group (0.8% vs. 1.8%, p = 0.04). Multiple logistic regression with PJI as the dependent variable showed that a dental referral was a strong predictor of a lower prevalence of PJI (OR: 0.43, CI95 0.205-0.917, p = 0.03). Male gender was also strongly associated with a higher frequency of PJI (OR: 2.68, CI95 1.32-5.42, p = 0.01). Age (OR: 1.06, CI95 1.01-1.10, p = 0.01) and BMI (OR: 1.11, CI95 1.05-1.17, p < 0.01) had little effect on the risk of PJI.

Conclusion: Dental referral using a standardized form can reduce the prevalence of early PJI. Accordingly, orthopedists and dentists should collaborate in this practical way.

Gasmi Benahmed A, Gasmi A, Tippairote T, Mujawdiya PK, Avdeev O, Shanaida Y, Bjørklund G. Metabolic Conditions and Peri-Implantitis. Antibiotics (Basel). 2022 Dec 29;12(1):65. doi: 10.3390/antibiotics12010065. PMID: 36671266; PMCID: PMC9854649. https://pubmed.ncbi.nlm.nih.gov/36671266/

ABSTRACT

Dental implants to replace lost teeth are a common dentistry practice nowadays. Titanium dental implants display a high success rate and improved safety profile. Nevertheless, there is an increasing peri-implantitis (PI), an inflammatory disease associated with polymicrobial infection that adversely affects the hard and soft tissues around the implant. The present review highlights the contribution of different metabolic conditions to PI. The considerations of both local and systemic metabolic conditions are crucial for planning successful dental implant procedures and during the treatment course of PI. Un- or undertreated PI can lead to permanent jaw bone suffering and dental implant losses. The common mediators of PI are inflammation and oxidative stress, which are also the key mediators of most systemic metabolic disorders. Chronic periodontitis, low-grade tissue inflammation, and increased oxidative stress raise the incidence of PI and the underlying systemic metabolic conditions, such as obesity, diabetes mellitus, or harmful lifestyle factors (cigarette smoking, etc.). Using dental biomaterials with antimicrobial effects could partly solve the problem of pathogenic microbial contamination and local inflammation. With local dentistry considering factors, including oral microbiota and implant quality control, the inclusion of the underlying systemic metabolic conditions into the pre-procedure planning and during the treatment course should improve the chances of successful outcomes.

Gordon AM, Ng MK, Erez O, Wong CH, Mont MA. The Importance of Oral History: Does Dental Implant Placement or Caries One Year Before or After Primary Total Knee Arthroplasty Increase Medical Complications and Periprosthetic Joint Infections? J Arthroplasty. 2023 Mar;38(3):476-483. doi: 10.1016/j.arth.2022.10.013. Epub 2022 Oct 14. PMID: 36252742. https://pubmed.ncbi.nlm.nih.gov/36252742/

ABSTRACT

Background: Consensus regarding prior dental problems on the outcomes of total knee arthroplasty (TKA) patients is lacking. Therefore, our objectives were to determine the association of dental caries or dental implant placement in TKA patients on the following: (1) medical complications; (2) health care utilization (lengths of stay and readmissions); (3) implant-related complications; and (4) expenditures.

Methods: A retrospective query was performed using an administrative claims database for 3 patient

cohorts undergoing primary TKA from 2010 to 2020. Patients who had a history of dental caries or implant placement 1 year prior to TKA (n = 1,466) and 1 year after TKA (n = 1,127) were case-matched to patients who did not have a dental history by age and comorbidities. Outcomes included 90-day complications, health care utilization parameters, 2-year implant complications, and expenditures. Logistic regression models computed odds ratios (OR) of complications and readmissions. P values less than 0.005 were significant.

Results: Patients who had a dental implant placement prior to TKA had higher frequency of complications (20.05 versus 14.01%; OR: 1.53, P < .0001), including myocardial infarctions (2.52 versus 1.23%; OR: 2.08, P = .0002) and pneumonia (2.52 versus 1.24%; OR: 2.06, P = .0002). Lengths of stay (3.28 versus 2.98 days; P = .255), readmission rates (4.71 versus 4.28%; P = .470), and implant-related complications including periprosthetic joint infections (3.14 versus 2.63%; OR: 1.20, P = .279) were similar between patients lacking dental history. Expenditures were higher in patients who had a postoperative and preoperative dental history ($19,252 versus $19,363 versus 17,980; P < .001).

Conclusion: Dental caries or implant placement may reflect overall worse medical condition resulting in more complications and higher costs after TKA. Dental history screening preoperatively may assist arthroplasty surgeons in minimizing complications.

Guasti L, Cianferotti L, Pampaloni B, Tonelli F, Martelli F, Iantomasi T, Brandi ML. Evaluation of food and nutrient intake in a population of subjects affected by periodontal disease with different levels of bone mineral density. Front Endocrinol (Lausanne). 2023 Feb 14;14:1098366. doi: 10.3389/fendo.2023.1098366. PMID: 36864837; PMCID: PMC9971598. https://pubmed.ncbi.nlm.nih.gov/36864837/

ABSTRACT

Introduction: Both osteoporosis and periodontitis are pathologies characterized by an imbalance in the bone tissue. Vitamin C is an important factor involved in maintaining the health of the periodontium; its deficiency causes characteristic lesions to periodontal tissues such as bleeding and redness of the gums. Among the essential minerals for the health of the periodontium we find instead calcium.Objectives of the study: The objectives of the proposed study are to study the association between the presence of osteoporosis and periodontal disease. We tried to identify the possible connections between particular dietary patterns and therefore the etiopathogenesis of periodontal disease and secondarily of osteoporosis. Materials and methods: 110 subjects were recruited in a single-center observational cross-sectional study carried through the collaboration between the University of Florence and the private institute of dentistry Excellence Dental Network based in Florence, suffering of periodontitis, 71 osteoporotic/osteopenic and 39 non-osteoporotic/osteopenic. Anamnestic data and information on eating habits were collected.

Results: The population showed eating habits that do not meet the intake levels recommended by the L.A.R.N. Regarding the relationship between nutrient intake and plaque index, it appears that in the population, the higher the intake of vitamin C through food, the lower the plaque index value is. This result could reinforce the scientific evidence that there is a protective factor in the onset of periodontal disease by the consumption of vitamin C which to date is still the subject of investigation. In addition, the same type of trend would also have been observed for calcium intake, but a larger sample size would be required to make this effect significant.

Conclusions: The relationship between osteoporosis and periodontitis and the role of nutrition in influencing the evolution of these pathologies still seems to be deeply explored. However, the results obtained seem to consolidate the idea that there is a relationship between these two diseases and that eating habits play an important role in their prevention.

Hong SW, Lee J, Kang JH. Associations between oral health status and risk of fractures in elder adults. Sci Rep. 2023 Jan 24;13(1):1361. doi: 10.1038/s41598-023-28650-9. PMID: 36694031; PMCID: PMC9873794. https://pubmed.ncbi.nlm.nih.gov/36694031/

ABSTRACT

Oral health condition, bone mineral density, skeletal muscle mass, fall, fracture, and frailty seem to be strongly interconnected. This study aimed to investigate associations between probability of osteoporotic fractures and oral health in the elderly. In total, 2322 Korean subjects from the 2008-2009 Korea National Health and Nutritional Examination Survey aged over 65 years were included. The 10-year probabilities of major and hip fractures were calculated using the Fracture Risk Assessment (FRAX) tool. Data on anthropometry, skeletal bone mineral density, sociodemographic characteristics, physical activity, individual history of fractures and falls, parental history of osteoporosis, number of teeth, metabolic syndrome, the Decayed, Missing, and Filled permanent Teeth index, and Community Periodontal Index (CPI), were collected. Participants were classified into three groups based on FRAX score for major osteoporotic fractures. A multivariate linear regression analysis was conducted to analyze associations between FRAX scores and oral health-related factors, adjusting for confounding factors. BMI, presence of metabolic syndrome, number of teeth, dental patterns, and CPI score showed significant differences among three groups in males and females. Results from multivariate linear regression analysis demonstrated significant relationships between total tooth number and probabilities of fracture in male and female elderly. The interdisciplinary approach for handling osteoporosis and sarcopenia including dentists, physicians is necessary to facilitate a better quality of life in the elderly.

Igase M, Igase K, Hino S, Uchida D, Okada Y, Ochi M, Tabara Y, Ohyagi Y. Association of Periodontitis with Mild Cognitive Impairment in Older Adults. JAR Life. 2024 Dec 4;13:108-112. doi: 10.14283/jarlife.2024.16. PMID: 39649137; PMCID: PMC11622601. https://pubmed.ncbi.nlm.nih.gov/39649137/

ABSTRACT

Background: Early detection of cognitive decline, including mild cognitive impairment, is expected to provide a better prognosis. Several studies have suggested an association between periodontitis and mild cognitive impairment.

Objectives/design: To test the hypothesis that there is an association between severe periodontitis and mild cognitive impairment in community residents who participated in a dental health check-up program.

Participants/setting: Community residents who participated in our dental health checkup program were enrolled (age=67.5±9.9, 62.9% female).

Measurements: Mild cognitive impairment was tested using the MCI screening test. Periodontitis was

diagnosed based on a widely used clinical periodontal parameter, the probing pocket depth. Statistical analysis was based on logistic regression models adjusted for potential confounders.

Results: Among 321 subjects, mild cognitive impairment was detected in 41. Severe periodontitis (probing pocket depth > 6mm) was detected in 123 cases, with a higher prevalence of mild cognitive impairment in the severe periodontitis group (65.9%) than in the unimpaired group (34.3%). The inclusion of four variables (age, education, functional teeth, and presence of severe periodontitis) in a multivariate logistic regression model revealed a statistically significant difference in the association between severe periodontitis and mild cognitive impairment (odds ratio = 4.024, $p < 0.001$).

Conclusions: A strong association was seen between severe periodontitis and mild cognitive impairment. Severe periodontitis appears to be a risk factor for mild cognitive impairment, and patients with severe periodontitis should be assessed for mild cognitive impairment.

Kai N, Tsukamoto Y, Urabe K, Tani A, Inai Y, Okadome A, Kashiwazaki H, Mizutani S, Wada N. Factors That Influence the Judgment of Oral Management Necessity in Preoperative Oral Screening. Int J Environ Res Public Health. 2021 Nov 22;18(22):12236. doi: 10.3390/ijerph182212236. PMID: 34831991; PMCID: PMC8617779. https://pubmed.ncbi.nlm.nih.gov/34831991/

ABSTRACT

Oral management during the perioperative period is important to prevent the development of postoperative complications. However, there are no unified systems to examine the oral status of patients and very few studies have focused on preoperative oral screening. In this study, we examined the oral status of patients who underwent oral screening at a University Hospital. A total of 1173 patients who underwent oral screening for perioperative management from April 2020 to July 2021 were enrolled. The subjects' medical data were retrospectively extracted from the dental records, and finally, the data of 1081 patients aged ≥20 years were analyzed. Oral screening based on seven categories was performed by dentists or dental hygienists. Our cumulative results determined whether patients required oral management during the perioperative period. "Poor oral hygiene" was the most frequent category (24%) of all oral categories examined. Logistic analysis revealed that tooth mobility had the highest odds ratio (21.476; 95% confidence interval: 11.462-40.239; $p < 0.001$) for oral management necessity during the perioperative period. Our study suggests that poor oral hygiene is most frequently observed in preoperative oral screening. Moreover, tooth mobility in preoperative oral screening may influence the judgment of oral management necessity during the perioperative period.

Kaneko T, Hayakawa K, Miyazaki T. Poor preoperative oral status is associated with early wound infection after joint replacement surgery. Eur J Orthop Surg Traumatol. 2025 Apr 30;35(1):177. doi: 10.1007/s00590-025-04304-6. PMID: 40307613. https://pubmed.ncbi.nlm.nih.gov/40307613/

ABSTRACT

Purpose: Joint replacement surgery has become prevalent; however, postoperative wound infections remain a significant concern. The role of preoperative oral health in influencing infection risk in patients

undergoing joint replacement is poorly understood. In this study, we aimed to investigate the association between the preoperative oral status and risk of wound infection after joint replacement surgery.

Methods: In this retrospective observational study, data from patients who underwent hip or knee replacement surgery at our hospital between January 2020 and December 2022 were analyzed. Preoperative oral health parameters including plaque control records (PCRs), bleeding indices, and rates of probed pocket depth ≥ 4 mm, were assessed. Postoperative wound infection rates up to postoperative day 90 were determined, and associations were assessed using univariate and multivariate logistic regression analyses.

Results: We included 330 patients (mean age 75.3 ± 8.1 years) in our analysis. The results of multivariate logistic regression analysis revealed significant associations between elevated risk of early postoperative wound infection and a higher body mass index [odds ratio (OR) 1.27; 95% confidence interval (CI) 1.10-1.49; $p = 0.002$) as well as a higher PCR rate (OR 1.04; 95% CI 1.01-1.07; $p = 0.02$).

Conclusion: These findings emphasize the importance of preoperative oral health optimization in reducing surgical complications after joint replacement surgery.

Kase Y, Morikawa S, Okano Y, Hosoi T, Yasui T, Taki-Miyashita Y, Yakabe M, Goto M, Ishihara K, Ogawa S, Nakagawa T, Okano H. Multi-organ frailty is enhanced by periodontitis-induced inflammaging. Inflamm Regen. 2025 Feb 3;45(1):3. doi: 10.1186/s41232-025-00366-5. PMID: 39894806; PMCID: PMC11789345. https://pubmed.ncbi.nlm.nih.gov/39894806/

ABSTRACT

Background: The incidence of periodontitis is high in older individuals. However, its impact on multi-organ frailty remains unclear. We developed mouse models with varying severity and duration of periodontitis to examine its effects.

Methods: We generated mouse models with mild and severe periodontitis, categorizing the disease duration into 3-month and 5-month periods for analysis. The organs assessed for frailty included the gastrocnemius muscle, soleus muscle, brain, and femur.

Results: Our study found that periodontitis induced systemic inflammation resembling inflammaging and other symptoms characteristic of age-induced frailty. Notably, muscle impairment developed specifically in slow-twitch muscles, and the femur emerged as the most vulnerable bone, exhibiting reduced bone mineral density even with mild and short-duration periodontitis. This condition resulted in the co-occurrence of bone fragility and slow-twitch muscle dysfunction. Cognitive function assessment revealed increased activated microglia and decreased adult neurogenesis in the hippocampus, impairing spatial learning. Thus, periodontitis induced both physical and cognitive frailties. Therapeutic intervention for the periodontitis, which halted the exacerbation of bone resorption markers, did not restore femur bone mineral density.

Conclusion: This study underscores the role of periodontitis in inducing multifaceted organ frailty with vulnerability, varying by organ, and the necessity of early intervention, particularly regarding bone density loss.

Kasprzak P, Skała W, Gniadek M, Kobiernik A, Pulik Ł, Łęgosz P. Diagnostic Challenges and Risk Stratification of Periprosthetic Joint Infection in Patients with Inflammatory Arthritis. J Clin Med. 2025 Jun 17;14(12):4302. doi: 10.3390/jcm14124302. PMID: 40566045; PMCID: PMC12194071. https://pubmed.ncbi.nlm.nih.gov/40566045/

ABSTRACT

Background/Objectives: Accurate detection of periprosthetic joint infection (PJI) in patients with inflammatory arthritis (IA), including rheumatoid arthritis (RA), remains challenging due to overlapping inflammatory parameters and the influence of immunosuppressive regimens. Methods: A narrative review was conducted using PubMed/MEDLINE (2010-2025). Search terms included "periprosthetic joint infection", "inflammatory arthritis", "rheumatoid arthritis", "diagnosis", "biomarkers", "synovial fluid", and "immunosuppression". Eventually, 50 studies were included. Results: IA patients diagnosed with PJI are more frequently younger, female, and present with a higher burden of comorbidities and an increased rate of false-positive histological findings and culture-negative infections. Standard biomarkers, such as serum C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), as well as synovial fluid white blood cell count and polymorphonuclear leukocyte percentage, have a low to moderate value for diagnosing PJI in patients with IA. Optimal thresholds for these tests differ from those recommended by the Musculoskeletal Infection Society (MSIS). Alpha-defensin has demonstrated superior diagnostic performance among synovial fluid biomarkers included in MSIS criteria. Novel markers, such as serum bactericidal permeability-increasing protein (BPI) and neutrophil elastase-2 (ELA-2), as well as synovial C-reactive protein and calprotectin, along with molecular techniques like polymerase chain reaction (PCR), are showing increasing potential. Conclusions: Disease and treatment-related confounders hinder PJI diagnosis in IA. Adjusted thresholds and IA-specific approaches are needed. Further research should validate emerging biomarkers, among which BPI, ELA-2, and synovial CRP show the greatest diagnostic potential and guide perioperative immunosuppressive strategies.

Khan AA, Morrison A, Hanley DA, Felsenberg D, McCauley LK, O'Ryan F, Reid IR, Ruggiero SL, Taguchi A, Tetradis S, Watts NB, Brandi ML, Peters E, Guise T, Eastell R, Cheung AM, Morin SN, Masri B, Cooper C, Morgan SL, Obermayer-Pietsch B, Langdahl BL, Al Dabagh R, Davison KS, Kendler DL, Sándor GK, Josse RG, Bhandari M, El Rabbany M, Pierroz DD, Sulimani R, Saunders DP, Brown JP, Compston J; International Task Force on Osteonecrosis of the Jaw. Diagnosis and management of osteonecrosis of the jaw: a systematic review and international consensus. J Bone Miner Res. 2015 Jan;30(1):3-23. doi: 10.1002/jbmr.2405. PMID: 25414052. https://pubmed.ncbi.nlm.nih.gov/25414052/

ABSTRACT

This work provides a systematic review of the literature from January 2003 to April 2014 pertaining to the incidence, pathophysiology, diagnosis, and treatment of osteonecrosis of the jaw (ONJ), and offers recommendations for its management based on multidisciplinary international consensus. ONJ is associated with oncology-dose parenteral antiresorptive therapy of bisphosphonates (BP) and denosumab (Dmab). The incidence of ONJ is greatest in the oncology patient population (1% to 15%), where high doses of these medications are used at frequent intervals. In the osteoporosis patient population, the incidence of ONJ is estimated at 0.001% to 0.01%, marginally higher than the incidence in the general population (<0.001%). New insights into the pathophysiology of ONJ include antiresorptive effects of BPs and Dmab, effects of BPs on gamma delta T-cells and on monocyte and macrophage function, as well as the role of local bacterial infection, inflammation, and necrosis. Advances in imaging include the use of cone beam computerized tomography assessing cortical and cancellous architecture with lower radiation exposure, magnetic resonance imaging, bone scanning, and positron emission tomography, although plain films often suffice. Other risk factors for ONJ include glucocorticoid use, maxillary or mandibular bone surgery, poor oral hygiene, chronic inflammation, diabetes mellitus, ill-fitting dentures, as well as other drugs, including antiangiogenic agents. Prevention strategies for ONJ include elimination or stabilization of oral disease prior to initiation of antiresorptive agents, as well as maintenance of good oral hygiene. In those patients at high risk for the development of ONJ, including cancer patients receiving high-dose BP or Dmab therapy, consideration should be given to withholding antiresorptive therapy following extensive oral surgery until the surgical site heals with mature mucosal coverage. Management of ONJ is based on the stage of the disease, size of the lesions, and the presence of contributing drug therapy and comorbidity. Conservative therapy includes topical antibiotic oral rinses and systemic antibiotic therapy. Localized surgical debridement is indicated in advanced nonresponsive disease and has been successful. Early data have suggested enhanced osseous wound healing with teriparatide in those without contraindications for its use. Experimental therapy includes bone marrow stem cell intralesional transplantation, low-level laser therapy, local platelet-derived growth factor application, hyperbaric oxygen, and tissue grafting.

Khunthananithi P, Lertpimonchai A, Sritara C, Srithanyarat SS, Thienpramuk L, Mongkornkarn S. Decreased bone mineral density is associated with an increased number of teeth with periodontitis progression: a 5-year retrospective cohort study. Clin Oral Investig. 2023 Dec 28;28(1):51. doi: 10.1007/s00784-023-05463-8. PMID: 38153562; PMCID: PMC10754725. https://pubmed.ncbi.nlm.nih.gov/38153562/

ABSTRACT

Objective: Longitudinal studies on the systemic bone loss-periodontitis relationship are limited with disparate results. The aim of this study was to investigate the association between bone mineral density (BMD) and periodontitis progression, controlling for other covariables in a Thai population.

Materials and methods: In 2,418 participants, BMD values of the lumbar spine, femoral neck, and total hip were measured with dual-energy X-ray absorptiometry at baseline. Each participant's BMD status was classified as normal, osteopenia, or osteoporosis. Full mouth periodontal examinations on 6 sites/tooth were performed at baseline and 5-year follow-up visits. Periodontitis progression was defined as a tooth presenting an additional proximal CAL loss of ≥ 3 mm or an additional lost tooth with a baseline CAL ≥ 5 mm. The risk effects of BMD status on the number of teeth with periodontitis progression were analyzed using multivariate Poisson regression.

Results: Baseline BMD status of osteoporosis was associated with an increased number of teeth with periodontitis progression in the subgroups of postmenopausal women, non-smokers, and participants with periodontitis stage III/IV with adjusted risk ratios of 1.31 (95% CI = 1.09-1.58), 1.19 (95% CI = 1.04-1.36), and 1.13 (95% CI = 1.00-1.28), respectively.

Conclusion: Baseline BMD in the osteoporosis range increased the risk of having a greater number of teeth with periodontitis progression in specific participant subgroups.

Clinical relevance: Decreased BMD is a potential factor affecting periodontitis progression risk in some individuals. Multidisciplinary approaches in educating and maintaining patients' bone-oral health may help improve their quality of life.

Knoedler L, Kauke-Navarro M, Knoedler S, Niederegger T, Hofmann E, Heiland M, Koerdt S, Nahles S, Baecher H. Oral health and rehabilitation in face transplant recipients - a systematic review. Clin Oral Investig. 2025 Jan 6;29(1):47. doi: 10.1007/s00784-024-06078-3. PMID: 39760761; PMCID: PMC11703954. https://pubmed.ncbi.nlm.nih.gov/39760761/

ABSTRACT

Background: Facial transplantation (FT) provides advanced solutions for severe facial defects by incorporating complex tissues such as bone, skin, oral mucosa and nerves. Oral health plays a critical role in FT, impacting both functional outcomes and transplant prognosis. Despite its importance, literature on oral health in FT recipients remains sparse.

Methods: This systematic review adhered to PRISMA guidelines. We searched PubMed, EMBASE, Web of Science, and CENTRAL for studies on oral health in FT patients up to August 4, 2024. Eligible studies were evaluated using the Newcastle-Ottawa Scale (NOS) and Level of Evidence (LOE). Data extracted included study design, general information on FT, patient demographics, oral examination techniques, and outcomes.

Results: Out of 6,984 articles reviewed, 19 met the inclusion criteria, all consisting of case reports or case series involving 48 FT cases. Of these, 25 cases provided relevant oral health and rehabilitation data. All studies showed a LOE of IV, with an average NOS score of 4.3 ± 0.5. Most FT cases involved male recipients (n = 20, 80%), while the majority of FTs were conducted in the United States (n = 10, 40%) and France (n = 7, 28%). Oral mucosa biopsy was the most common examination method (n = 11, 44%). Malocclusion was reported in 48% (n = 12) of cases, with revision surgeries occurring in 36% (n = 9). Post-FT dental treatments included tooth extractions (n = 7, 28%), fillings (n = 3, 12%), and endodontic treatments (n = 2, 8%). Dental implants were placed in 32% (n = 8) of cases, with one case (4%) reporting failed osseointegration.

Conclusion: Routine oral health assessments are essential for FT patients to prevent complications and improve clinical outcomes. However, there is a lack of high-quality research on oral health in FT recipients, underscoring the need for further studies to establish standardized care protocols.

Clinical relevance: This review emphasizes the urgent need for standardized oral health protocols in FT patients to minimize infection risks and optimize long-term transplant success and overall patient health.

Kohler JG, Holte AJ, Glass NA, Bedard NA, Brown TS. Dental Screening in Elective Total Joint Arthroplasty: Risk Factors for Failure. J Arthroplasty. 2021 May;36(5):1548-1550. doi: 10.1016/j.arth.2020.12.026. Epub 2021 Jan 19. PMID: 33478892. https://pubmed.ncbi.nlm.nih.gov/33478892/

ABSTRACT

Background: Active dental infection at the time of total joint arthroplasty (TJA) or in the acute postoperative period following TJA is thought to increase the risk of periprosthetic joint infection (PJI). Many surgeons recommend preoperative dental screening. This study aimed to identify how many elective TJA patients failed preoperative dental screening and what patient risk factors were associated with failure.

Methods: A consecutive series of elective, primary TJA was reviewed from 8/1/2016 to 8/1/2017. We studied 511 operations in 511 patients. All patients were referred for preoperative dental screening per protocol. Dental screening failure was defined as required dental intervention by the dentist. Screening failure rate was calculated for and logistic regression was used to evaluate the relationship between odds of screening failure and patient demographic data.

Results: In 94 of the 511 total cases (18.5%), patients failed dental screening and required dental procedures prior to TJA. Reasons for failure included tooth extractions, root canals, abscess drainage, and carious lesions requiring filling. Patient characteristics associated with failed dental screening included male gender (odds ratio 1.56, 95% confidence interval 1.0006-2.468, P = .047) and current smoker (odds ratio 3.6, 95% confidence interval 1.650-7.927, P = .001).

Conclusion: Universal dental screening prior to primary TJA resulted in 18.5% of patients needing an invasive dental intervention. Universal dental screening results in extra cost and time for patients and providers. Although male gender and active smoking were associated with increased odds of requiring an invasive dental procedure, more work is needed to develop targeted screening to improve perioperative workflow and limit unnecessary dental evaluations for patients.

Kubo R, Tajiri R, Yamada H, Nakayama H, Miyamoto T. Bisphosphonates with high bone-resorption-capacity promote osteonecrosis of the jaw development after tooth extraction in mice. J Bone Miner Metab. 2025 Jul;43(4):370-383. doi: 10.1007/s00774-025-01608-9. Epub 2025 May 28. PMID: 40434545; PMCID: PMC12279590. https://pubmed.ncbi.nlm.nih.gov/40434545/

ABSTRACT

Introduction: Medication-Related Osteonecrosis of the Jaw (MRONJ) is a condition marked by osteonecrosis of the jaw bone and other symptoms seen following invasive surgical procedures in patients administered bone-modifying agents. Once disease develops, a patient's ADL levels are significantly compromised. However, the pathogenesis of this disease is not clearly understood. Bisphosphonates (BPs) are bone resorption inhibitors commonly used to treat osteoporosis. Although not confirmed, it is generally believed that MRONJ risk is higher in the presence of injectable rather than oral formulations. Here, we assessed risk of developing ONJ in mice in the presence of 3 different BPs-zoledronate, ibandronate, or alendronate-that are administered clinically intravenously or via infusion.

Materials and methods: Eight-week-old wild-type mice were administered zoledronate, alendronate, ibandronate or PBS vehicle subcutaneously once a week for 2 weeks. Then the right first molars in the mandible were extracted. Six-weeks later, osteonecrosis development was analyzed by histochemistry.

Results: Among mice administered BPs, mice treated with zoledronate exhibited the highest frequency of osteocytes exhibiting osteonecrosis. Bone mineral density was higher in mice receiving zoledronate, alendronate, or ibandronate than in PBS control mice, but effects of the 3 drugs were comparable. Moreover, formation of multi-nuclear osteoclasts in vitro was most strongly inhibited by zoledronate, followed by alendronate and ibandronate.

Conclusion: Administration of BPs with high osteoclastogenesis inhibitory potential, such as zoledronate, increases risk of ONJ development after tooth extraction more than treatment with other agents tested, even at equivalent dosage.

Kwan SA, Lau V, Fliegel BE, Baker C, Courtney PM, Deirmengian GK. Routine Preoperative Dental Clearance for Total Joint Arthroplasty: Is There a Benefit? Cureus. 2023 Jul 4;15(7):e41352. doi: 10.7759/cureus.41352. PMID: 37546155; PMCID: PMC10399090. https://pubmed.ncbi.nlm.nih.gov/37546155/

ABSTRACT

Background Periprosthetic joint infections (PJIs) place significant psychological and financial burdens on patients and healthcare systems. One measure to reduce the risk of PJIs is preoperative dental screening, for which there is no current consensus recommendation. This study aims to determine whether there is a difference in the rate of PJI and microorganism profile in patients who did and did not obtain preoperative dental clearance. Methodology A retrospective review was conducted among patients undergoing primary total hip arthroplasty and total knee arthroplasty from 2017 to 2021. A cohort of 8,654 patients who underwent routine dental clearance was matched with a cohort of patients who did not. Surgeons who changed their dental clearance protocol were also identified, and the rates of PJIs were compared before and after. Results No statistically significant difference was seen in the rate of PJIs between patients who did and did not undergo routine preoperative dental clearance. No statistically significant difference was seen in the rate of PJIs before and after for surgeons who changed their dental clearance protocol. The microorganism profile between the groups was also found to be without differences. Conclusions Eliminating dental clearance from routine preoperative clearance does not appear to increase the rates of acute PJIs following elective total joint arthroplasty (TJA) or to change the organism profile of the infections that did occur. It may be reasonable to not require routine preoperative dental clearance or to practice selective dental clearance in patients undergoing elective TJA, especially given the increased financial cost and delay in care experienced by patients.

Latimer JM, Maekawa S, Shiba T, Fretwurst T, Chen M, Larsson L, Sugai JV, Kostenuik P, Mitlak B, Lanske B, Giannobile WV. Healing sequelae following tooth extraction and dental implant placement in an aged, ovariectomy model. JBMR Plus. 2024 Aug 31;8(10):ziae113. doi: 10.1093/jbmrpl/ziae113. PMID: 39347482; PMCID: PMC11427826. https://pubmed.ncbi.nlm.nih.gov/39347482/

ABSTRACT

At present, a lack of consensus exists regarding the clinical impact of osteoporosis on alveolar bone metabolism during implant osseointegration. While limited preclinical and clinical evidence demonstrates a negative influence of osteoporosis on dental extraction socket healing, no preclinical studies offer data on

the results of implant placement in 6-mo-old, ovariectomized (OVX) Sprague-Dawley rats. This study aimed to investigate the outcomes of dental tooth extraction socket healing and implant placement in a rodent model of osteoporosis following daily vehicle (VEH) or abaloparatide (ABL) administration. Micro-CT and histologic analysis demonstrated signs of delayed wound healing, consistent with alveolar osteitis in extraction sockets following 42 d of healing in both the VEH and ABL groups. In a semiquantitative histological analysis, the OVX-ABL group demonstrated a tendency for improved socket regeneration with a 3-fold greater rate for moderate socket healing when compared to the OVX-VEH group (43% vs 14%), however, this finding was not statistically significant (p=.11). No significant differences were observed between vehicle and test groups in terms of implant outcomes (BMD and bone volume/total volume) at 14- and 21-d post-implant placement. Abaloparatide (ABL) significantly increased BMD of the femoral shaft and intact maxillary alveolar bone sites in OVX animals, demonstrating the therapeutic potential for oral hard tissue regeneration. The present model involving estrogen-deficiency-induced bone loss demonstrated an impaired healing response to dental extraction and implant installation.

Laurila M, Mäntynen P, Mauno J, Suojanen J. Prosthetic Oral Rehabilitation with CAD/CAM Suprastructures in Patients with Severe Tissue Deficits: A Case Series. Dent J (Basel). 2023 Dec 13;11(12):289. doi: 10.3390/dj11120289. PMID: 38132427; PMCID: PMC10742847. https://pubmed.ncbi.nlm.nih.gov/38132427/

ABSTRACT

This article presents the outcomes of prosthetic oral rehabilitation using CAD/CAM telescopic bar overdentures in patients with oral cancer (n = 3), severe facial trauma (n = 2), or various syndromes (n = 1), all suffering from severe tissue deficits and requiring complex and comprehensive oral rehabilitation. The aim was to assess the durability and functionality of implant-retained prosthetic structures, ensuring easy oral hygiene and minimizing specialized follow-up needs. The data for this study were sourced from a retrospective cohort at Helsinki University Hospital. The prosthetic reconstruction encompassed the Atlantis 2in1 and the Createch removable telescopic systems. Thus, 40 implants were placed (4 to 7 per patient), with prosthetic structures in the maxilla (n = 4 patients), in the mandible (n = 1), and in both jaws (n = 1). Two patients experienced no complications, two patients had part of the acrylic resin break, and one patient experienced loosening of the bar structure. All complications associated with prosthetic structures were successfully managed, and none of the implants were lost. The follow-up time ranged from 7 to 126 months. This rehabilitation is proved to be an effective solution for patients with complex oral conditions, facilitating both functional restoration and ease of maintenance. These findings underscore the importance of individualized treatment approaches in cases of tissue deficits.

Lee SH, Chang SS, Lee M, Chan RC, Lee CC. Risk of osteonecrosis in patients taking bisphosphonates for prevention of osteoporosis: a systematic review and meta-analysis. Osteoporos Int. 2014 Mar;25(3):1131-9. doi: 10.1007/s00198-013-2575-3. Epub 2013 Dec 17. PMID: 24343364. https://pubmed.ncbi.nlm.nih.gov/24343364/

ABSTRACT

Summary: We aimed to systematically review observational studies evaluating use of bisphosphonates (BPs) and risk of osteonecrosis of jaw (ONJ) or other sites among non-cancer patients.

Introduction: PubMed, EMBASE, and Cochrane Library were screened from database inception to Dec 2012.

Methods: Two reviewers independently identified cohort and case-control studies evaluating the use of oral or intravenous (IV) BPs and the risk of ONJ and extracted the characteristics of the studies and risk estimates. Pooled estimates of odds ratios and 95 % confidence intervals (CI) were derived by random effects meta-analysis. Subgroup analyses were carried according to patients' characteristics and route of BP use.

Results: We identified 12 studies, including 2,652 cases and 1,571,997 controls. Use of BPs was associated with a significantly increased risk of ONJ or ON of other sites [odds ratio (OR) 2.32; 95 % CI 1.38-3.91; I (2) = 91 %]. The summary OR was 2.91 (95 % CI 1.62-5.22; I (2) = 85.9 %) for adjusted studies. Use of BPs were associated with higher risk on ONJ (OR 2.57; 95 % CI 1.37-4.84; I (2) = 92.2 %) than ON of other sites (OR 1.79; 95 % CI 0.71-4.47; I (2) = 83.3 %). Meta-regression analysis did not find design characteristics or outcome definitions to be significant sources of heterogeneity.

Conclusion: The available evidence suggests that use of BPs in cancer patients is associated with a substantial risk for ONJ. Patients receiving IV BP are at highest risk.

Lee ES, Tsai MC, Lee JX, Wong C, Cheng YN, Liu AC, Liang YF, Fang CY, Wu CY, Lee IT. Bisphosphonates and Their Connection to Dental Procedures: Exploring Bisphosphonate-Related Osteonecrosis of the Jaws. Cancers (Basel). 2023 Nov 10;15(22):5366. doi: 10.3390/cancers15225366. PMID: 38001626; PMCID: PMC10670230. https://pubmed.ncbi.nlm.nih.gov/38001626/

ABSTRACT

Bisphosphonates are widely used to treat osteoporosis and malignant tumors due to their effectiveness in increasing bone density and inhibiting bone resorption. However, their association with bisphosphonate-related osteonecrosis of the jaws (BRONJ) following invasive dental procedures poses a significant challenge. This review explores the functions, mechanisms, and side effects of bisphosphonates, emphasizing their impact on dental procedures. Dental patients receiving bisphosphonate treatment are at higher risk of BRONJ, necessitating dentists' awareness of these risks. Topical bisphosphonate applications enhance dental implant success, by promoting osseointegration and preventing osteoclast apoptosis, and is effective in periodontal treatment. Yet, systemic administration (intravenous or intraoral) significantly increases the risk of BRONJ following dental procedures, particularly in inflamed conditions. Prevention and management of BRONJ involve maintaining oral health, considering alternative treatments, and careful pre-operative and post-operative follow-ups. Future research could focus on finding bisphosphonate alternatives with fewer side effects or developing combinations that reduce BRONJ risk. This review underscores the need for further exploration of bisphosphonates and their implications in dental procedures.

Li Y, Guo M, Fei Y, Liu Y, Al-Ghammari A, Chen S, Yin Y, Niu S, Shan E, Cui Y, Li X. Association between oral health and physio-cognitive decline syndrome of older adults in China and its sex differences: a cross-sectional study. BMC Geriatr. 2025 Feb 28;25(1):137. doi: 10.1186/s12877-025-05801-3. PMID: 40021985; PMCID: PMC11871684. https://pubmed.ncbi.nlm.nih.gov/40021985/

ABSTRACT

Background: Physio-Cognitive Decline Syndrome (PCDs) is characterized by the coexistence of MIND (mobility impairment, no disability) and CIND (cognitive impairment, no dementia), which predicts dementia risk. Deteriorating oral health can contribute to malnutrition, cognitive decline, and physical frailty, all of which may exacerbate PCDs symptoms. This study investigates the association between oral health and PCDs, exploring sex differences in this relationship.

Method: A cross-sectional analysis of the baseline data from the Nanjing Brain Health Cohort included 252 participants aged 60 and older, assessing physical mobility (6-meter walk test, grip strength), cognitive function (MoCA), and oral health (natural teeth count, denture use, tongue and lip motor function, masticatory and swallowing ability, Oral Frailty Index). Logistic regression models were used to examine associations between oral health and PCDs.

Results: Among participants, 15.5% were classified as having PCDs. The odds of having PCDs were lower with a higher number of teeth (OR = 0.939, 95% CI: 0.890-0.991, p = 0.021), while impaired tongue and lip motor function increased the odds of PCDs (OR = 3.811, 95% CI: 1.059-13.717, p = 0.041). In females, the odds of MIND and CIND were lower with a greater number of teeth and denture use. For males, the odds of PCDs were higher with oral frailty (OR = 5.202, 95% CI: 1.429-18.940, p = 0.012).

Conclusions: Findings underscore the significant association between oral health and the odds of PCDs among older adults, with sex-specific effects. For women, maintaining natural teeth and proper denture use are associated with lower odds of MIND and CIND, while for men, oral frailty is linked to higher odds of PCDs. Healthcare providers should consider oral health and incorporate sex-specific strategies.

Lin TY, Wang PY, Lin CY, Hung SC. Association of the oral microbiome with cognitive function among older adults: NHANES 2011-2012. J Nutr Health Aging. 2024 Aug;28(8):100264. doi: 10.1016/j.jnha.2024.100264. Epub 2024 May 20. PMID: 38772098. https://pubmed.ncbi.nlm.nih.gov/38772098/

ABSTRACT

Background: An association between the gut microbiome and cognitive function has been demonstrated in prior studies. However, whether the oral microbiome, the second largest microbial habitant in humans, has a role in cognition remains unclear.

Design, setting, participants: Using weighted data from the 2011 to 2012 National Health and Nutrition Examination Survey, we examined the association between oral microbial composition and cognitive function in older adults. The oral microbiome was characterized by 16S ribosomal RNA gene sequencing. Cognitive status was assessed using the Consortium to Establish a Registry for Alzheimer's Disease immediate recall and delayed recall, Animal Fluency Test, and Digit Symbol Substitution Test (DSST). Subjective memory changes over 12 months were also assessed. Linear and logistic regression models were conducted to quantify the association of κ -diversity with different cognitive measurements controlling for potential confounding variables. Differences in κ -diversity were analyzed using permutational analysis of variance.

Results: A total of 605 participants aged 60-69 years were included in the analysis. Oral microbial κ -di-

versity was significantly and positively correlated with DSST (κ , 2.92; 95% CI, 1.01-4.84). Participants with higher oral microbial κ -diversity were more likely to have better cognitive performance status based on DSST (adjusted odds ratio, 2.35; 95% CI, 1.28-4.30) and were less likely to experience subjective memory changes (adjusted odds ratio, 0.43; 95% CI, 0.25-0.74). In addition, κ -diversity was statistically significant for the cognitive performance status based on DSST (P = 0.031) and subjective memory changes (P = 0.023).

Conclusions: Oral microbial composition was associated with executive function and subjective memory changes among older adults among older U.S. adults in a nationally representative population sample. Oral dysbiosis is a potential biomarker or therapeutic target for cognitive decline. Further work is needed to elucidate the mechanisms underpinning the association between the oral microbiome and cognitive function.

Liñares A, Dopico J, Blanco C, Pico A, Sobrino T, Blanco J, Leira Y. The systemic impact of non-surgical treatment of peri-implantitis with or without adjunctive systemic metronidazole: Secondary analysis of a randomized clinical trial. Clin Oral Implants Res. 2024 Dec;35(12):1519-1530. doi: 10.1111/clr.14339. Epub 2024 Aug 2. PMID: 39093380; PMCID: PMC11629454. https://pubmed.ncbi.nlm.nih.gov/39093380/

ABSTRACT

Objectives: The aim of this study was to evaluate the systemic effect of non-surgical peri-implantitis treatment (NSPIT) with or without the administration of systemic metronidazole.

Methods: In this secondary analysis from a previously published clinical trial (NCT03564301), peri-implantitis patients were randomized into two groups: test, receiving NSPIT plus 500 mg of oral systemic metronidazole three times a day for 7 days (n = 10); and control group, receiving NSPIT plus placebo (n = 11). Serum samples were obtained at baseline, 3 and 6 months after therapy to determine levels of inflammatory biomarkers, lipid fractions and complete blood counts.

Results: Both treatment modalities produced improvements in clinical and radiographic parameters. After 6 months from NSPIT, a substantial reduction in C-reactive protein (6.9 mg/dL; 95% CI: 3.7 to 9.9, p < .001) and low-density lipoprotein cholesterol (21.8 mg/dL; 95% CI: -6.9 to 50.5, p = .013) as well as a modest increase in neutrophils counts (0.4 × 103/μL; 95% CI: -0.4 to 1.1, p = .010) was observed in the control group while the test group showed a significant reduction of TNF-κ (110.1; 95% CI: 38.9 to 181.4, p = .004).

Conclusions: NSPIT showed a short-term beneficial systemic effect regardless of adjunctive use of systemic metronidazole.

Liu F, Song S, Ye X, Huang S, He J, Wang G, Hu X. Oral health-related multiple outcomes of holistic health in elderly individuals: An umbrella review of systematic reviews and meta-analyses. Front Public Health. 2022 Oct 27;10:1021104. doi: 10.3389/fpubh.2022.1021104. PMID: 36388333; PMCID: PMC9650948. https://pubmed.ncbi.nlm.nih.gov/36388333/

ABSTRACT

Background and aims: Along with an aging population, exploring the impact of oral health on holistic health and determining exact outcomes in elderly individuals are important in both scientific research and clinical practice. Significant increase in the number of systematic reviews shows that oral health can directly or indirectly affect the overall health of elderly people physically, mentally and socially. To systematically collate, appraise, and synthesize the current evidence, we carried out an umbrella review of the impacts of oral health on holistic health in elderly individuals.

Methods: A systematic reviews and meta-analyses search was performed in the major databases PubMed, MEDLINE, Web of Science and the Cochrane Library from inception to February 1, 2022, according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement. The JBI (Joanna Briggs Institute) Critical Appraisal Checklist for Systematic Reviews and Research Syntheses was referred to assess methodological quality, and the GRADE (Grading of Recommendations, assessment, Development, and Evaluation working group classification) was used to assess the quality of evidence for each outcome included in the umbrella review.

Results: Out of 1,067 records, a total of 35 systematic reviews were included. Respiratory diseases, malnutrition, age-related oral changes, frailty, cognitive impairment, depression and poor quality of life were identified as seven key outcomes that affect the physical, mental and social health of elderly individuals. Meanwhile, three intervention measures of oral health were summarized as (i) more rigorous and universal scales, (ii) dental cleaning and denture installation, and (iii) improving self-awareness regarding oral care.

Conclusions: Evidence showed that oral health can significantly affect holistic health, and the diverse oral diseases directly lead to multiple health outcomes in elderly individuals. Clear high-quality evidence revealed that oral health is strongly associated with seven health outcomes covering physical, mental, and social levels, which directly corresponds to holistic health, and impacts the quality of life of elderly individuals. Such the results remind the importance of oral care in public health, and further studies need to be conducted to verity more specific association between oral health and other chronic diseases.

Iușan SAL, Lucaciu OP, Petrescu NB, Mirică IC, Toc DA, Albu S, Costache C. Exploring Peri-Implantitis Risk-Factors: A Cross-Sectional Study. Dent J (Basel). 2025 Mar 28;13(4):148. doi: 10.3390/dj13040148. PMID: 40277478; PMCID: PMC12026288. https://pubmed.ncbi.nlm.nih.gov/40277478/

ABSTRACT

Background/Objectives: With the increasing use of dental implants in edentulous patients and the high prevalence of peri-implantitis, understanding its microbial and risk factors is crucial. This study investigated Romanian patients from two private dental clinics in Cluj-Napoca, Romania, diagnosed with peri-implantitis, focusing on identifying the predominant bacterial species at affected sites compared with healthy implant sites. Additionally, we examined the impact of factors such as smoking, gender, age, and prosthetic restoration type on disease prevalence. Methods: This cross-sectional study, conducted between January 2023 and December 2024, included randomly selected patients who met the predefined inclusion and exclusion criteria. We enrolled 22 patients and 50 implants in the study. Data collected from medical records, clinical evaluations, and microbiological assessments were subsequently entered into a computerized database. Clinical data were analyzed using Social Science Statistics software(Jeremy Staangroom 2018). Bacterial samples were assessed, incubated, and subsequently identified using the Vitek 2 Compact System (BioMérieux, Marcy-l' Étoile, France). Results: Peri-implantitis incidence was found to be

independent of gender, more prevalent in the mandible, and equally affected smokers and non-smokers. The disease involves a complex polymicrobial infection, with pathogenic bacteria triggering the condition and opportunistic bacteria sustaining it. Conclusions: Peri-implantitis is a complex polymicrobial infection that arises from the interaction of strict pathogenic bacteria and opportunistic bacteria. Peri-implantitis results from intricate interactions of local, systemic, and microbial factors. Identifying its causes is essential for developing effective treatments, with future research emphasizing the role of opportunistic bacteria in disease progression.

Martins LHI, Ferreira DC, Silva MT, Motta RHL, Franquez RT, Bergamaschi CC. Frequency of osteonecrosis in bisphosphonate users submitted to dental procedures: A systematic review. Oral Dis. 2023 Jan;29(1):75-99. doi: 10.1111/odi.14003. Epub 2021 Sep 22. PMID: 34402147. https://pubmed.ncbi.nlm.nih.gov/34402147/

ABSTRACT

Objective: To determine the frequency of osteonecrosis of the jaw in bisphosphonate users submitted to dental procedures.

Methods: This systematic review searched the sources: MEDLINE, EMBASE, Web of Science, Scopus, and Virtual Health Library, with no restriction on language or publication date. Reviewers, in pairs and independently, selected the studies, extracted their data, and assessed the risk of bias. Meta-analyses were pooled using the DerSimonian and Laird random effects model.

Results: A total of 27 studies (5391 participants) were included. The most reported bisphosphonates were zoledronate (n = 17 studies) and alendronate (n = 19) for treating cancers (n = 11) and osteoporosis (n = 16), respectively. Twelve studies were of low methodological quality. The frequency of osteonecrosis was 2.7% (95% CI: 0.9-5.2%) and proved higher for intravenous [6.9% (0.7-17.3%)] than oral [0.2% (0.9-5.2%)] bisphosphonate use. No association between longer treatment duration and greater frequency of osteonecrosis was observed.

Conclusions: Higher frequency of osteonecrosis was observed in intravenous bisphosphonate users submitted to dental extraction. Further studies collecting more detailed information on the bisphosphonates used and of greater methodological rigor are warranted to confirm these findings and better inform prescribers, dental surgeons, and other professionals on risks of bisphosphonate use in this patient group.

Miyasato K, Kobayashi Y, Ichijo K, Yamaguchi R, Takashima H, Maruyama T, Abe M. Oral Frailty as a Risk Factor for Malnutrition and Sarcopenia in Patients on Hemodialysis: A Prospective Cohort Study. Nutrients. 2024 Oct 13;16(20):3467. doi: 10.3390/nu16203467. PMID: 39458463; PMCID: PMC11510359. https://pubmed.ncbi.nlm.nih.gov/39458463/

ABSTRACT

Background: Oral frailty is a concept that encompasses various aspects of impaired oral function in elderly people, leading to reduced food intake and less dietary diversity, which can result in sarcopenia and physical frailty. However, there have been no studies on the relationship between oral frailty and malnutrition, sarcopenia, and physical frailty in patients on hemodialysis (HD).

Methods: This prospective observational cohort study assessed the oral status of patients on HD. The patients were divided into an oral frailty group and non-oral frailty group using the Oral Frailty Index-8. Malnutrition was assessed using the Geriatric Nutritional Risk Index (GNRI), the Nutritional Risk Index for Japanese Hemodialysis Patients (NRI-JH), and the Short-Form Mini-Nutritional Assessment (MNA-SF). Sarcopenia was assessed using the Asian Working Group for Sarcopenia 2019's criteria. Physical frailty was assessed using the Japanese version of the Cardiovascular Health Study criteria. One year later, the changes in nutritional status, sarcopenia, and physical frailty risk categories were compared between the oral frailty and non-oral frailty groups.

Results: The study enrolled 201 patients (non-oral frailty group, 123; oral frailty group, 78). After 1 year, the oral frailty group had a significantly higher proportion of patients with worsening nutrition status (GNRI, $p = 0.0011$; NRI-JH, $p = 0.0019$; MNA-SF, $p < 0.001$) and sarcopenia ($p = 0.0024$). There was no significant between-group difference in the proportion of patients in a worse risk category for physical frailty after 1 year.

Conclusions: Oral frailty predicts future malnutrition and the progression of sarcopenia in HD patients. In particular, our results strongly suggested that oral frailty was a strong determinant of worsening malnutrition and sarcopenia in HD patients aged ≥65 years.

Obermeier KT, Dewenter I, Malenova Y, Fliefel R, Kaeppler G, Otto S. Sclerotic bone: a sign of bone reaction in patients with medication related osteonecrosis of the jaw. Sci Rep. 2024 Apr 4;14(1):7914. doi: 10.1038/s41598-024-57635-5. PMID: 38575664; PMCID: PMC10994931. https://pubmed.ncbi.nlm.nih.gov/38575664/

ABSTRACT

Medication-related osteonecrosis of the jaw (MRONJ) is a serious adverse reaction associated with antiresorptive drugs such as bisphosphonates and denosumab. When dealing with advanced and/or multiple MRONJ lesions undergoing surgical therapy, the extent of surgery is often a topic of discussion. The aim of this study was to identify the differences in bone density in and around the MRONJ lesion before and after surgical treatment to evaluate the needed surgical extend of the modelling osteotomy. In this retrospective study 26 patients with MRONJ lesions that were surgically treated in our department were observed. Length, width and bone density were measured in panoramic radiograph pre and postoperatively with the Imaging processing software Sidexis and ImageJ (Fiji). The necrotic area, the surrounding sclerotic area as well as the healthy contralateral side were observed. Measurements were performed by two independent observers. Pearson correlation was calculated to determine the interobserver variability. Bone density was significantly reduced in the necrotic bone area compared to the healthy unaffected contralateral reference side. The sclerotic bone area surrounding the necrosis showed increased bone density compared to the contralateral unaffected reference side. The density of the sclerotic bone area was increased in the previously affected MRONJ area in the postoperative panoramic radiograph. The pre and postoperative density showed no significant correlation to healing behaviour. The focus of the modelling osteotomy in surgical treatment of mature MRONJ lesions should be predominantly on the parts that appear necrotic and less dense in the panoramic radiograph as sclerotic areas might be an expression of bone reaction.

Park JH, Park MS, Kim HJ, Lee H, Kim JW, Song TJ. Better oral hygiene is associated with a reduced risk of osteoporotic fracture: a nationwide cohort study. Front Endocrinol (Lausanne). 2023 Sep 14;14:1253903. doi: 10.3389/fendo.2023.1253903. PMID: 37780632; PMCID: PMC10539647. https://pubmed.ncbi.nlm.nih.gov/37780632/

ABSTRACT

Background: The aim of this study was to examine the longitudinal association between oral health parameters and osteoporotic fracture.

Methods: The study included participants who received oral health screening by dentists from the National Health Screening cohort database of Korea between 2003 and 2006. The primary outcome was osteoporotic fracture occurrence, which was defined using specific international classification of diseases-10 codes; vertebral fracture (S22.0, S22.1, S32.0, S32.7, T08, M48.4, M48.5, and M49.5), hip fracture (S72.0 and S72.1), distal radius fracture (S52.5 and S52.6), and humerus fracture (S42.2 and S42.3). The presence of periodontitis and various oral health examination findings, such as missing teeth, caries, frequency of tooth brushing, and dental scaling, were analyzed using a Cox proportional hazard model to assess their association with osteoporotic fracture occurrence.

Results: The analysis included a total of 194,192 participants, among whom 16,683 (8.59%) developed osteoporotic fracture during a median follow-up of 10.3 years. Poor oral health status, including periodontitis (adjusted hazard ratio [aHR]: 1.09, 95% confidence interval [CI]: 1.01-1.18, p = 0.039), a higher number of missing teeth (≥15; aHR: 1.59, 95% CI: 1.45-1.75, p < 0.001), and dental caries (≥6; aHR: 1.17, 95% CI: 1.02-1.35, p = 0.030), was associated with an increased risk of osteoporotic fracture. On the other hand, better oral hygiene behaviors such as brushing teeth frequently (≥3 times per day; aHR: 0.82, 95% CI: 0.78-0.86, p < 0.001) and having dental scaling within 1 year (aHR: 0.87, 95% CI: 0.84-0.90, p < 0.001) were negatively associated with the occurrence of osteoporotic fracture.

Conclusion: The study found that poor oral health, such as periodontitis, missing teeth, and dental caries, was associated with an increased risk of osteoporotic fracture. Conversely, good oral hygiene behaviors like frequent teeth brushing and dental scaling within 1 year were associated with a reduced risk. Further research is needed to confirm this association.

Putowski Z, Miłobędzka M, Kisiołek M, Szczeklik W, Jaeschke R, Puc P, Szczeklik K. Preoperative dental assessment for the reduction of periprosthetic joint infections in patients undergoing total joint replacement: a systematic review and meta-analysis. Anaesthesiol Intensive Ther. 2024;56(4):217-223. doi: 10.5114/ait.2024.145278. PMID: 39917967; PMCID: PMC11736908. https://pubmed.ncbi.nlm.nih.gov/39917967/

ABSTRACT

The requirement for preoperative dental assessment (PDA) to prevent periprosthetic joint infection (PJI) after total joint arthroplasty (TJA) seems to be a common practice at least in some orthopaedic centres. There are few studies which have examined this intervention. Routine referral of patients for routine PDA increases costs and potentially prolongs the time to the procedure. In order to investigate the effect of PDA on the frequency of PJI after TJA, we conducted a systematic review with meta-analysis of observational studies including adult patients undergoing TJA. The search for eligible studies was performed across MEDLINE, EMBASE, Web of Science, and Google Scholar databases. The intervention group consisted of patients who had undergone PDA, while the control group consisted of patients without PDA. The main outcome was the presence of PJI. In addition to traditional meta-analysis, a Bayesian analysis and trial sequential analysis were performed. The analysis included five observational studies. Considering PJI as an outcome, the total risk of bias was assessed as serious. A total of 23 175 patients were included in those studies, of whom 12 324 had a PDA. There was no effect of PDA versus no PDA on the incidence of PJI (OR 0.86, 95% CI: 0.50-1.49; I^2 = 42%). Bayesian analysis showed that the posterior probability of PDA reducing the frequency of PJI was 69.1%. Thus it was concluded that, in patients undergoing TJA, it remains unknown whether PDA influences the occurrence of postoperative PJI. There is insufficient evidence to support performing this intervention routinely. The health care systems and individual organisations will likely need to make decisions on continuation of such programmes on the basis of this limited amount of information.

Qi J, Liu E, Guo YF, Hu JM, Liu YT, Chen G, Yue HQ. Association between periodontal disease and osteoporosis in postmenopausal women: a protocol for systematic review and meta-analysis. BMJ Open. 2021 Sep 13;11(9):e049277. doi: 10.1136/bmjopen-2021-049277. PMID: 34518261; PMCID: PMC8438846. https://pubmed.ncbi.nlm.nih.gov/34518261/

ABSTRACT

Introduction: Periodontal disease and osteoporosis are common chronic diseases, especially for the postmenopausal women. Several original studies explore the association, but there still controversial. Therefore, we will conduct this systematic review and meta-analysis to assess the association between periodontal disease and osteoporosis in postmenopausal women.

Methods and analysis: This study adheres to the Preferred Reporting Items for Systematic Reviews and Meta-analyses for Protocols. We will systematically search Medline/PubMed, Embase, Cochrane Central Register of Controlled Trials, Web of Science and Scopus from inception to August 2021 to collect all relevant publications, with no restrictions on publication date or languages. Study selection, data extraction and risk of bias assessment will be conducted independently by two trained reviewers independently. The Cochrane's tool for assessing risk of bias, Newcastle-Ottawa Scale and Agency for Healthcare Research and Quality will be used for the risk of bias assessment. OR, HR and risk ratio with 95% CI were considered as the effect size for dichotomous outcomes, weighted mean dik erence with 95% CI were calculated as the effect size for continuous outcomes. Random-effects models will be used. Heterogeneity between studies will be assessed via the forest plot and I^2. Publication bias will detected by funnel plots, Begg's test and Egger's test. The subgroup analyses and sensitivity ananlyses will also be used to explore and interpret the heterogeneity.

Ruggiero SL, Dodson TB, Aghaloo T, Carlson ER, Ward BB, Kademani D. American Association of Oral and Maxillofacial Surgeons' Position Paper on Medication-Related Osteonecrosis of the Jaws-2022 Update. J Oral Maxillofac Surg. 2022 May;80(5):920-943. doi: 10.1016/j.joms.2022.02.008. Epub 2022 Feb 21. PMID: 35300956. https://pubmed.ncbi.nlm.nih.gov/35300956/

ABSTRACT

Strategies for management of patients with, or at risk for, medication-related osteonecrosis of the jaws (MRONJ) - formerly referred to as bisphosphonate-related osteonecrosis of the jaws (BRONJ)-were set forth in the American Association of Oral and Maxillofacial Surgeons (AAOMS) position papers in 2007, 2009 and 2014. The position papers were developed by a committee appointed by the AAOMS Board of Trustees and comprising clinicians with extensive experience in caring for these patients, as well as clinical and basic science researchers. The knowledge base and experience in addressing MRONJ continues to evolve and expand, necessitating modifications and refinements to the previous position papers. Three members of the AAOMS Committee on Oral, Head, and Neck Oncologic and Reconstructive Surgery (COHNORS) and three authors of the 2014 position paper were appointed to serve as a working group to analyze the current literature and revise the guidance as indicated to reflect current knowledge in this field. This update contains revisions to diagnosis and management strategies and highlights the current research status. AAOMS maintains that it is vitally important for this information to be disseminated to other relevant healthcare professionals and organizations.

Ruggiero SL, Mehrotra B, Rosenberg TJ, Engroff SL. Osteonecrosis of the jaws associated with the use of bisphosphonates: a review of 63 cases. J Oral Maxillofac Surg. 2004 May;62(5):527-34. doi: 10.1016/j.joms.2004.02.004. PMID: 15122554. https://pubmed.ncbi.nlm.nih.gov/15122554/

ABSTRACT

Purpose: Bisphosphonates are widely used in the management of metastatic disease to the bone and in the treatment of osteoporosis. We were struck in the past 3 years with a cluster of patients with necrotic lesions in the jaw who shared 1 common clinical feature, that they had all received chronic bisphosphonate therapy. The necrosis that was detected was otherwise typical of osteoradionecrosis, an entity that we rarely encountered at our center, with less than 2 patients presenting with a similar manifestation per year.

Patients and methods: We performed a retrospective chart review of patients who presented to our Oral Surgery service between February 2001 and November 2003 with the diagnosis of refractory osteomyelitis and a history of chronic bisphosphonate therapy.

Results: Sixty-three patients have been identified with such a diagnosis. Fifty-six patients had received intravenous bisphosphonates for at least 1 year and 7 patients were on chronic oral bisphosphonate therapy. The typical presenting lesions were either a nonhealing extraction socket or an exposed jawbone; both were refractory to conservative debridement and antibiotic therapy. Biopsy of these lesions showed no evidence of metastatic disease. The majority of these patients required surgical procedures to remove the involved bone.

Conclusions: In view of the current trend of increasing and widespread use of chronic bisphosphonate therapy, our observation of an associated risk of osteonecrosis of the jaw should alert practitioners to monitor for this previously unrecognized potential complication. An early diagnosis might prevent or reduce the morbidity resulting from advanced destructive lesions of the jaw bone.

Saji N, Ishihara Y, Murotani K, Uchiyama A, Takeda A, Sakurai T, Matsushita K. Cross-Sectional Analysis of Periodontal Disease and Cognitive Impairment Conducted in a Memory Clinic: The Pearl Study. J Alzheimers Dis. 2023;96(1):369-380. doi: 10.3233/JAD-230742. PMID: 37781808; PMCID: PMC10657689. https://pubmed.ncbi.nlm.nih.gov/37781808/

ABSTRACT

Background: Periodontal disease (PeD) is a risk factor of Alzheimer's disease and is associated with cognitive decline in older adults. However, the relationships between subitems of neuropsychological tests and PeD have not been fully clarified.

Objective: To evaluate associations between PeD and subitems of neuropsychological tests.

Methods: We performed a cross-sectional analysis of data of 183 participants (women: 50%, mean age: 79 years) from a clinical study. We enrolled patients who visited our memory clinic and assessed demographics, dementia-related risk factors, neuropsychological tests, brain magnetic resonance images, and a dental screening check. We evaluated the relationships between cognitive function and PeD using multivariable logistic regression analyses.

Results: Participants with dementia were less likely to make periodical visits to the dentist, had fewer teeth, had less frequent tooth brushing habits, and were more likely to have PeD. Impaired cognitive function was significantly associated with an increasing degree of PeD. In multivariable logistic regression analyses, impaired visuospatial function and attention were associated with twice the risk of moderate or severe PeD compared with individuals with preserved visuospatial function and attention (odds ratio: 2.11, 95% confidence interval: 1.04-4.29, p = 0.037). Impaired word recall and recognition and following commands were associated with increased risk of PeD (odds ratio: 2.80, 95% confidence interval: 1.41-5.32, p = 0.003).

Conclusions: Cognitive decline, such as impaired visuospatial function, attention, word recall and recognition, and inability to follow commands were independently and strongly associated with PeD. These items can be assessed easily on a daily basis.

Schmalz G, Reuschel F, Bartl M, Schmidt L, Runge J, Haak R, Goralski S, Roth A, Ziebolz D. One Third of Patients before Endoprosthesis Implantation Show an Oral Focus as Potential Source of Infectious Complication-The Value of Pre-Operative Dental Risk Stratification in a German Cohort. J Clin Med. 2022 Jun 26;11(13):3686. doi: 10.3390/jcm11133686. PMID: 35806971; PMCID: PMC9267610. https://pubmed.ncbi.nlm.nih.gov/35806971/

ABSTRACT

Objective: The aim of this cross-sectional cohort study was to evaluate a comprehensive dental examination and referral concept for patients prior to endoprosthesis (EP) implantation in an interdisciplinary setting.

Methods: Patients, who were prepared for EP surgery in the clinic for orthopaedics, were referred to

the dental clinic for a dental examination. Thereby, dental and periodontal treatment need, radiographic and temporomandibular joint findings were assessed. Based on oral and radiographic investigation, a risk classification for potential source of prosthetic infection was performed. If potential oral foci of EP infection were present (e.g., apically radiolucent teeth, severe periodontitis or additional inflammatory findings), patients were classified as at high risk for EP infection with oral origin. Those individuals were allocated to their family dentist or special clinic for dental treatment prior to EP surgery.

Results: A total of 311 patients were included (mean age: 67.84 ± 10.96 years, 51% male). A dental treatment need of 33% was found, while the periodontal treatment need was 83%. Thirty-one percent of patients showed at least one apical radiolucency (a sign of chronic infection/inflammation). Furthermore, additional findings such as radiographic signs of sinusitis maxillaris were found in 24% of patients. Temporomandibular disease was probable in 17% of individuals. One-third (34%) were assigned to the high risk group for an EP infection with oral origin.

Conclusion: German patients before EP have a high periodontal treatment need and show frequently (34%) a potential oral focus of infection, underlining the necessity of including dental examination and risk stratification as part of the pre-operative assessment prior to EP implantation. Therefore, an approach as applied in this study appears reasonable for those individuals.

Schmalz G, Wirtz J, Haak R, Fenske F, Roth A, Ziebolz D. Dental Therapy of Patients Prior to Endoprostheses: A Retrospective, Telephone-Based Cohort Study. Dent J (Basel). 2023 Aug 18;11(8):198. doi: 10.3390/dj11080198. PMID: 37623294; PMCID: PMC10453566. https://pubmed.ncbi.nlm.nih.gov/37623294/

ABSTRACT

The aim of this study was to assess, whether patients prior to endoprosthesis (EP) visit their dentist for need-oriented therapy and whether this would be associated with the occurrence of complications. Based on a cohort of patients, which was orally investigated prior to EP surgery between 04/2020 and 12/2021, a telephone interview was performed at least six months after EP implantation. Patients were classified into either low-risk (LR), moderate-risk (MR), or high-risk (HR) groups. Participants were interviewed based on a structured questionnaire regarding dental visits, dental therapy, and potential complications during the observational period. Out of the 311 patients from the baseline cohort, 96 patients after EP implantation could be included (participation rate of 31%). Nineteen patients were in LR (20%), 41 in MR (43%), and 36 in the HR group (37%). Overall, 79% (n = 76) of the patients followed the recommendation to visit their dentist; 94% of patients within the HR group visited the dentist (p = 0.02). Dental treatment procedures included tooth cleaning (57%), periodontal treatment (31%), restorative therapy/filling (28%), and tooth extraction (28%). In 64% of the HR patients (n = 23), the potential oral foci with a risk of EP infection were eliminated by their general dentist. Fourteen different complications occurred within the observation period, without any group effect (p > 0.05). In conclusion, most patients prior to EP visit their general dentist following referral, especially if they have a potential oral focus. The effect of dental clearance on infectious complications of EP remains unclear, whereby further clinical studies are needed.

Schmalz G, Ziebolz D. The hypotheses of oral disease-associated perioprosthetic joint infections to understand the role of oral health for endoprostheses - a narrative review. Spec Care Dentist. 2024 Mar-Apr;44(2):328-338. doi: 10.1111/scd.12901. Epub 2023 Jul 10.

PMID: 38483250. https://pubmed.ncbi.nlm.nih.gov/38483250/

ABSTRACT

Aims: Periprosthetic infections are a severe complication, causing enormous morbidity. The role of oral diseases in the development of such infections has been discussed controversially, showing a large discrepancy between prevalence of oral foci and infections of endoprostheses (EP). This narrative review aimed in explaining and discussing two hypotheses for the occurrence of oral disease-associated EP infections.

Methods and results: The hypotheses include two mechanisms. (1) In case of an acute exacerbation during the early healingperiod after EP surgery (first 3 months). (2) Coincidental in the context of late EP infections (after successful initial healing), where an initial periprosthetic inflammation can be colonized secondarily by oral microorganisms. In both settings,oral foci are not primarily causative for EP infection, but represent an important reservoir for EP colonization, while the immunological conditions (locally and systemically) are crucial for the onset of an EP infection. As potential consequence, patients with risk factors should be orally rehabilitated prior to EP surgery. Usage of antibiotic prophylaxis during the first 3 months after EP implantation (initial healing period) might be considered, but has no reliable evidence. To avoid morbidity of patients, radical dental clearance is unfavorable for the respective patients.

Conclusion: Altogether, patients with EP should receive increased attention from the dental perspective alongside with dental preventive measures, because they show a high dental and periodontal treatment need.

Song H, Wei Y, Wang Y, Zhang J. The mediating effect of nutrition on oral frailty and fall risk in community-dwelling elderly people. BMC Geriatr. 2024 Mar 20;24(1):273. doi: 10.1186/s12877-024-04889-3. PMID: 38504156; PMCID: PMC10953286. https://pubmed.ncbi.nlm.nih.gov/38504156/

ABSTRACT

Background: Population aging is accelerating, particularly in Asian countries. Falls are the leading cause of unintentional injuries in the elderly over 60 years old in China. Hence, it is crucial to anticipate the risk factors associated with fall risk. We aimed to explore whether oral frailty and fall risk were reciprocally related and whether nutrition mediated their association.

Methods: From October 2022 to March 2023, a total of 409 elderly individuals from the Yangzhou community were selected using the convenience sampling method. Cross-sectional data on older adults' oral frailty, nutrition, and fall risk were collected using questionnaires. Data analysis was performed using SPSS 27.0 and PROCESS macro.

Results: The fall risk score was 1.0 (ranging from 0 to 4.0), with 107 cases (26.2%) identified as being at risk of falling. Spearman correlation analysis revealed a positive correlation between oral frailty and the risk of falls (rs = 0.430, P < 0.01). Nutrition was found to have a negative correlation with both oral frailty and fall risk (rs=-0.519κ -0.457, P < 0.01). When controlling for covariates, it was observed that nutrition mediated the relationship between oral frailty and falls. The mediating effect value accounted for 48.8% of the total effect (P < 0.01).

Conclusions: Oral frailty was significantly associated with fall risk, and nutrition might be a mediating factor for adverse effects of oral frailty and fall risk. Enhancing the nutrition of older individuals is a vital approach to mitigating fall risk among those with oral frailty.

Sukpanichyingyong S, Sae-Jung S, Stubbs DA, Simsin S, Chengsuntisuk T, Luengpailin S. Association between periodontitis and fracture-related infection in patients with severe open fractures of the upper and/or lower extremities. BMC Oral Health. 2025 May 29;25(1):846. doi: 10.1186/s12903-025-06200-1. PMID: 40442721; PMCID: PMC12124095. https://pubmed.ncbi.nlm.nih.gov/40442721/

ABSTRACT

Background: Periodontitis is a chronic inflammatory condition that affects the oral cavity and has systemic implications beyond its localized impact, potentially increasing the risk of various health issues. This study aimed to investigate the role of periodontitis as a risk factor for fracture-related infection (FRI), a severe complication encountered in orthopaedic trauma.

Methods: A prospective cohort study was conducted to analyze data from 235 patients with severe open fractures (grades II, IIIA, or IIIB) who were monitored for at least 12 months. During the perioperative period, the periodontal health of these patients was evaluated through various clinical measures, including clinical attachment levels, bleeding on probing (BOP), and probing depth, which were used to identify instances of periodontitis. Additionally, the Simplified Oral Hygiene Index (OHI-S) was employed as part of the assessment. Comprehensive data were collected for subsequent analysis. To explore the associations between periodontal status and the occurrence of FRI, statistical methods, including both univariate and multivariate regression models, were applied FRI, with a significance level set at 5%.

Results: Among 235 patients, 169 individuals (71.9%) exhibited normal wound healing, while 66 patients (28.1%) developed FRI. The data analyses indicated a significant association between periodontitis and an increased risk of FRI, with an adjusted risk ratios (RR) of 3.03 (95% CI: 1.02-9.44, p = 0.045). Additionally, elevated BOP levels were identified as an independent risk factor, with an adjusted RR of 1.02 (95% CI: 1.00-1.04, p = 0.035). Advanced stages of periodontitis, particularly Stage II (adjusted RR 2.63, 95% CI: 1.11-6.18, p = 0.02) and Stage III (adjusted RR 3.06, 95% CI: 1.53-6.20, p = 0.001), were strongly linked to higher rates of FRI. Notably, the presence of periodontitis was significantly associated with early FRI occurrences (proportion difference 0.3658, 95% CI: 0.240-0.491, p < 0.0001), while no significant association was observed with late or delayed FRI cases. Moreover, additional factors influencing the risk of FRI included the severity of open fracture and delayed wound closure.

Conclusions: Periodontitis was significantly associated with an increased risk of developing FRI in patients with open fractures. Advanced stages of periodontal disease and elevated BOP are recognized as independent risk factors. Additionally, other important contributing factors include the severity of the open fractures and delayed wound closure.

Thornhill MH, Crum A, Rex S, Stone T, Campbell R, Bradburn M, Fibisan V, Lockhart PB, Springer B, Baddour LM, Nicholl J. Analysis of Prosthetic Joint Infections Following Invasive Dental Procedures in England. JAMA Netw Open. 2022 Jan 4;5(1):e2142987. doi: 10.1001/jamanetworkopen.2021.42987. PMID: 35044470; PMCID: PMC8771300. https://

pubmed.ncbi.nlm.nih.gov/35044470/

ABSTRACT

Importance: Dentists in the United States are under pressure from orthopedic surgeons and their patients with prosthetic joints to provide antibiotic prophylaxis before invasive dental procedures (IDP) to reduce the risk of late prosthetic joint infection (LPJI). This has been a common practice for decades, despite a lack of evidence for an association between IDP and LPJI, a lack of evidence of antibiotic prophylaxis efficacy, cost of providing antibiotic prophylaxis, and risk of both adverse drug reactions and the potential for promoting antibiotic resistance.

Objective: To quantify any temporal association between IDP and subsequent LPJI.

Design, setting, and participants: This cohort study used a case-crossover and time trend design to examine any potential association between IDP and LPJI. The population of England (55 million) was chosen because antibiotic prophylaxis has never been recommended to prevent LPJI in England, and any association between IDP and LPJI would therefore be fully exposed. All patients admitted to hospitals in England for LPJI from December 25, 2011, through March 31, 2017, and for whom dental records were available were included. Analyses were performed between May 2018 and June 2021.

Exposures: Exposure to IDP.

Main outcomes and measures: The main outcome was the incidence of IDP in the 3 months before LPJI hospital admission (case period) compared with the incidence in the 12 months before that (control period).

Results: A total of 9427 LPJI hospital admissions with dental records (mean [SD] patient age, 67.8 [13.1] years) were identified, including 4897 (52.0%) men and 4529 (48.0%) women. Of these, 2385 (25.3%) had hip prosthetic joints, 3168 (33.6%) had knee prosthetic joints, 259 (2.8%) had other prosthetic joints, and 3615 (38.4%) had unknown prosthetic joint types. There was no significant temporal association between IDP and subsequent LPJI. Indeed, there was a lower incidence of IDP in the 3 months prior to LPJI (incidence rate ratio, 0.89; 95% CI, 0.82-0.96; P = .002).

Conclusions and relevance: These findings suggest that there is no rationale to administer antibiotic prophylaxis before IDP in patients with prosthetic joints.

Torres HM, Arnold KM, Oviedo M, Westendorf JJ, Weaver SR. Inflammatory Processes Affecting Bone Health and Repair. Curr Osteoporos Rep. 2023 Dec;21(6):842-853. doi: 10.1007/s11914-023-00824-4. Epub 2023 Sep 28. PMID: 37759135; PMCID: PMC10842967. https://pubmed.ncbi.nlm.nih.gov/37759135/

ABSTRACT

Purpose of review: The purpose of this article is to review the current understanding of inflammatory processes on bone, including direct impacts of inflammatory factors on bone cells, the effect of senescence on inflamed bone, and the critical role of inflammation in bone pain and healing.

Recent findings: Advances in osteoimmunology have provided new perspectives on inflammatory bone loss in recent years. Characterization of so-called inflammatory osteoclasts has revealed insights into physiological and pathological bone loss. The identification of inflammation-associated senescent markers in bone cells indicates that therapies that reduce senescent cell burden may reverse bone loss caused by inflammatory processes. Finally, novel studies have refined the role of inflammation in bone healing, including cross talk between nerves and bone cells. Except for the initial stages of fracture healing, inflammation has predominately negative effects on bone and increases fracture risk. Eliminating senescent cells, priming the osteo-immune axis in bone cells, and alleviating pro-inflammatory cytokine burden may ameliorate the negative effects of inflammation on bone.

Vázquez-Reza M, López-Dequidt I, Ouro A, Iglesias-Rey R, Campos F, Blanco J, Rodríguez-Yáñez M, Castillo J, Sobrino T, Leira Y. Periodontitis is associated with subclinical cerebral and carotid atherosclerosis in hypertensive patients: A cross-sectional study. Clin Oral Investig. 2023 Jul;27(7):3489-3498. doi: 10.1007/s00784-023-04958-8. Epub 2023 Apr 1. PMID: 37004529; PMCID: PMC10329568. https://pubmed.ncbi.nlm.nih.gov/37004529/

ABSTRACT

Objective: To examine the relationship between periodontitis and subclinical intracranial atherosclerosis. The association of periodontitis with preclinical markers of atherosclerosis in other vascular territories was also explored.

Material and methods: This was a cross-sectional study where 97 elderly subjects with a previous history of hypertension received an ultrasonographic evaluation to assess subclinical atherosclerosis in different vascular territories: (1) cerebral [pulsatility (PI) and resistance index (RI) of the middle cerebral artery], (2) carotid [intima-media thickness (IMT)], and (3) peripheral [ankle-brachial index (ABI)]. Additionally, participants underwent a full-mouth periodontal assessment together with blood sample collection to determine levels of inflammatory biomarkers (leukocytes, fibrinogen, and erythrocyte sedimentation rate), lipid fractions (total cholesterol and high- and low-density lipoprotein), and glucose.

Results: Sixty-one individuals had periodontitis. Compared to subjects without periodontitis, those with periodontitis showed higher values of PI (1.24 ± 0.29 vs 1.01 ± 0.16), RI (0.70 ± 0.14 vs 0.60 ± 0.06), and IMT (0.94 ± 0.15 vs 0.79 ± 0.15) (all $p < 0.001$). No statistically significant differences were found neither for ABI or for other clinical and biochemical parameters. An independent association was found between periodontitis and increased intracranial atherosclerosis (ORadjusted = 10.16; 95% CI: 3.14-32.90, $p < 0.001$) and to a lesser extent with thicker carotid IMT (ORadjusted = 4.10; 95% CI: 1.61-10.48, $p = 0.003$).

Conclusions: Periodontitis is associated with subclinical atherosclerosis in both intracranial and carotid arteries in elderly subjects with hypertension.

Clinical relevance: The association of periodontitis with intracranial atherosclerosis implies that periodontitis patients might have greater chances to develop ischemic stroke in the future.

Verma A, Kumar L, Prasad V, Yadav A. Prosthetic challenges in rehabilitating maxillomandibular trauma case: a multidisciplinary approach. BMJ Case Rep. 2023 Jan

25;16(1):e253047. doi: 10.1136/bcr-2022-253047. PMID: 36697112; PMCID: PMC9884860. https://pubmed.ncbi.nlm.nih.gov/36697112/

ABSTRACT

Although maxillofacial trauma is relatively common, it still presents a challenging management. Its management includes treatment of facial bone fractures, dentoalveolar trauma and soft tissue injuries as well as associated injuries. Plastic surgeons, maxillofacial surgeons and prosthodontists have an interest in the subject of maxillofacial injuries, particularly in the area of functional as well as aesthetical stomatognathic rehabilitation. Present case was a clinical scenario with maxillofacial trauma due to entanglement in agricultural equipment leading to fracture of palatal bone and fracture of mandible in symphysis region. The patient's mastication, phonetics, aesthetics and social life were affected. Initial management was performed by the plastic surgeons. Rehabilitation of maxillary defect was performed using fixed removable bridge with palatal extension to cover the cleft part, and cortical implant-supported fixed prosthesis was planned as the prosthetic treatment for mandibular arch. On follow-up, there was improvement in speech and mastication, and patient felt more confident in social interaction after prosthetic rehabilitation.

Wells GA, Hsieh SC, Zheng C, Peterson J, Tugwell P, Liu W. Risedronate for the primary and secondary prevention of osteoporotic fractures in postmenopausal women. Cochrane Database Syst Rev. 2022 May 3;5(5):CD004523. doi: 10.1002/14651858.CD004523.pub4. PMID: 35502787; PMCID: PMC9062986. https://pubmed.ncbi.nlm.nih.gov/35502787/

ABSTRACT

Background: Osteoporosis is an abnormal reduction in bone mass and bone deterioration leading to increased fracture risk. Risedronate belongs to the bisphosphonate class of drugs which act to inhibit bone resorption by interfering with the activity of osteoclasts. This is an update of a Cochrane Review that was originally published in 2003.

Objectives: We assessed the benefits and harms of risedronate in the primary and secondary prevention of osteoporotic fractures for postmenopausal women at lower and higher risk for fractures, respectively.

Search methods: With broader and updated strategies, we searched the Cochrane Central Register of Control Trials (CENTRAL), MEDLINE and Embase. A grey literature search, including the online databases ClinicalTrials.gov, International Clinical Trials Registry Platform (ICTRP), and drug approval agencies, as well as bibliography checks of relevant systematic reviews was also performed. Eligible trials published between 1966 to 24 March 2021 were identified.

Selection criteria: We included randomised controlled trials that assessed the benefits and harms of risedronate in the prevention of fractures for postmenopausal women. Participants must have received at least one year of risedronate, placebo or other anti-osteoporotic drugs, with or without concurrent calcium/vitamin D. Major outcomes were clinical vertebral, non-vertebral, hip and wrist fractures, withdrawals due to adverse events, and serious adverse events. In the interest of clinical relevance and applicability, we classified a study as secondary prevention if its population fulfilled more than one of the following hierarchical criteria: a diagnosis of osteoporosis, a history of vertebral fractures, low bone mineral density (BMD)T score

≤ -2.5, and age ≥ 75 years old. If none of these criteria was met, the study was considered to be primary prevention.

Data collection and analysis: We used standard methodology expected by Cochrane. We pooled the relative risk (RR) of fractures using a fixed-effect model based on the expectation that the clinical and methodological characteristics of the respective primary and secondary prevention studies would be homogeneous, and the experience from the previous review suggesting that there would be a small number of studies. The base case included the data available for the longest treatment period in each placebo-controlled trial and a >15% relative change was considered clinically important. The main findings of the review were presented in summary of findings tables, using the GRADE approach. In addition, we looked at benefit and harm comparisons between different dosage regimens for risedronate and between risedronate and other anti-osteoporotic drugs.

Main results: Forty-three trials fulfilled the eligibility criteria, among which 33 studies (27,348 participants) reported data that could be extracted and quantitatively synthesized. We had concerns about particular domains of risk of bias in each trial. Selection bias was the most frequent concern, with only 24% of the studies describing appropriate methods for both sequence generation and allocation concealment. Fifty per cent and 39% of the studies reporting benefit and harm outcomes, respectively, were subject to high risk. None of the studies included in the quantitative syntheses were judged to be at low risk of bias in all seven domains. The results described below pertain to the comparisons for daily risedronate 5 mg versus placebo which reported major outcomes. Other comparisons are described in the full text. For primary prevention, low- to very low-certainty evidence was collected from four studies (one to two years in length) including 989 postmenopausal women at lower risk of fractures. Risedronate 5 mg/day may make little or no difference to wrist fractures [RR 0.48 (95% CI 0.03 to 7.50; two studies, 243 participants); absolute risk reduction (ARR) 0.6% fewer (95% CI 1% fewer to 7% more)] and withdrawals due to adverse events [RR 0.67 (95% CI 0.38 to 1.18; three studies, 748 participants); ARR 2% fewer (95% CI 5% fewer to 1% more)], based on low-certainty evidence. However, its preventive effects on non-vertebral fractures and serious adverse events are not known due to the very low-certainty evidence. There were zero clinical vertebral and hip fractures reported therefore the effects of risedronate for these outcomes are not estimable. For secondary prevention, nine studies (one to three years in length) including 14,354 postmenopausal women at higher risk of fractures provided evidence. Risedronate 5 mg/day probably prevents non-vertebral fractures [RR 0.80 (95% CI 0.72 to 0.90; six studies, 12,173 participants); RRR 20% (95% CI 10% to 28%) and ARR 2% fewer (95% CI 1% fewer to 3% fewer), moderate certainty], and may reduce hip fractures [RR 0.73 (95% CI 0.56 to 0.94); RRR 27% (95% CI 6% to 44%) and ARR 1% fewer (95% CI 0.2% fewer to 1% fewer), low certainty]. Both of these effects are probably clinically important. However, risedronate's effects are not known for wrist fractures [RR 0.64 (95% CI 0.33 to 1.24); three studies,1746 participants); ARR 1% fewer (95% CI 2% fewer to 1% more), very-low certainty] and not estimable for clinical vertebral fractures due to zero events reported (low certainty). Risedronate results in little to no difference in withdrawals due to adverse events [RR 0.98 (95% CI 0.90 to 1.07; eight studies, 9529 participants); ARR 0.3% fewer (95% CI 2% fewer to 1% more); 16.9% in risedronate versus 17.2% in control, high certainty] and probably results in little to no difference in serious adverse events [RR 1.00 (95% CI 0.94 to 1.07; six studies, 9435 participants); ARR 0% fewer (95% CI 2% fewer to 2% more; 29.2% in both groups, moderate certainty).

Authors' conclusions: This update recaps the key findings from our previous review that, for secondary prevention, risedronate 5 mg/day probably prevents non-vertebral fracture, and may reduce the risk of hip fractures. We are uncertain on whether risedronate 5mg/day reduces clinical vertebral and wrist fractures. Compared to placebo, risedronate probably does not increase the risk of serious adverse events. For primary prevention, the benefit and harms of risedronate were supported by limited evidence with high uncertainty.

Wereszczyński M, Śmigiel A, Tomaszewska I, Niedźwieńska A. Investigating the relationship between periodontitis and specific memory processes in the search for cognitive markers of Alzheimer's disease risk. Sci Rep. 2023 Jul 18;13(1):11555. doi: 10.1038/s41598-023-38674-w. PMID: 37464028; PMCID: PMC10353983. https://pubmed.ncbi.nlm.nih.gov/37464028/

ABSTRACT

The spontaneous retrieval deficit (SRD) hypothesis argues that individuals in the preclinical stages of Alzheimer's disease (AD) are particularly impaired in spontaneous retrieval, which manifests in reduced mind-wandering. Our main purpose was to provide novel evidence to support the SRD hypothesis by investigating, for the first time, the relationship between mind-wandering and periodontitis, the latter being the risk factor for AD. The second objective was to address the lack of deeper understanding of the relationship between oral health and specific cognitive abilities by investigating whether periodontitis would be primarily associated with memory. Sixty community-dwelling dementia-free older adults completed neuropsychological tests that focused on various cognitive abilities and a computerised task, during which mind-wandering was evaluated. Periodontal health was assessed subjectively, and through an oral examination by a qualified dentist that focused on visible periodontitis-related changes in gingival tissues and the number of periodontitis bacteria. In line with our predictions, objective and subjective symptoms of poorer periodontal health were associated with less mind-wandering, providing further support for the SRD hypothesis. Again in line with predictions, poorer periodontal health was associated with worse episodic memory, with no relationship between periodontitis and the measure targeting various cognitive abilities, from which memory was excluded.

Wu J, Yao L, Liu Y, Zhang S, Wang K. Periodontitis and osteoporosis: a two-sample Mendelian randomization analysis. Braz J Med Biol Res. 2024 Mar 18;57:e12951. doi: 10.1590/1414-431X2024e12951. PMID: 38511766; PMCID: PMC10946243. https://pubmed.ncbi.nlm.nih.gov/38511766/

ABSTRACT

The incidences of periodontitis and osteoporosis are rising worldwide. Observational studies have shown that periodontitis is associated with increased risk of osteoporosis. We performed a Mendelian randomization (MR) study to genetically investigate the causality of periodontitis on osteoporosis. We explored the causal effect of periodontitis on osteoporosis by MR analysis. A total of 9 single nucleotide polymorphisms (SNP) were related to periodontitis. The primary approach in this MR analysis was the inverse variance-weighted (IVW) method. Simple median, weighted median, and penalized weighted median were used to analyze sensitivity. The fixed-effect IVW model and random-effect IVW model showed no significant causal effect of genetically predicted periodontitis on the risk of osteoporosis (OR=1.032; 95%CI: 0.923-1.153; P=0.574; OR=1.032; 95%CI: 0.920-1.158; P=0.588, respectively). Similar results were observed in simple mode (OR=1.031; 95%CI: 0.780-1.361, P=0.835), weighted mode (OR=1.120; 95%CI: 0.944-1.328, P=0.229), simple median (OR=1.003; 95%CI: 0.839-1.197, P=0.977), weighted median (OR=1.078; 95%CI: 0.921-1.262, P=0.346), penalized weight median (OR 1.078; 95%CI: 0.919-1.264, P=0.351), and MR-Egger method

(OR=1.360; 95%CI: 0.998-1.853, P=0.092). There was no heterogeneity in the IVW and MR-Egger analyses (Q=7.454, P=0.489 and Q=3.901, P=0.791, respectively). MR-Egger regression revealed no evidence of a pleiotropic influence through genetic variants (intercept: -0.004; P=0.101). The leave-one-out sensitivity analysis indicated no driven influence of any individual SNP on the association between periodontitis and osteoporosis. The Mendelian randomization analysis did not show a significant detrimental effect of periodontitis on the risk of osteoporosis.

Yan Y, Orlandi M, Suvan J, Harden S, Smith J, D'Aiuto F. Association between peri-implantitis and systemic inflammation: a systematic review. Front Immunol. 2023 Aug 24;14:1235155. doi: 10.3389/fimmu.2023.1235155. PMID: 37691939; PMCID: PMC10484704. https://pubmed.ncbi.nlm.nih.gov/37691939/

ABSTRACT

Background: Peri-implantitis is an infectious/inflammatory disease with similar clinical and radiographic features to periodontitis. Overwhelming evidence confirmed that periodontitis causes elevations in systemic inflammatory mediators; this is unclear for peri-implantitis. Hence, this study aimed to appraise all available evidence linking peri-implantitis with systemic inflammation.

Methods: A systematic review was completed according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Eight electronic databases (Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, Web of Science, Dentistry & Oral Sciences Source, Scopus, LILACS, and China Online), ClinicalTrials.gov, WHO International Clinical Trials Registry Platform (ICTRP), and gray literature were searched up to February 9, 2023. Human studies of randomized controlled trials, non-randomized intervention studies, cohort studies, case-control, and cross-sectional studies were eligible for inclusion. Quantitative analyses were performed using random effects models.

Results: A total of 27 full-text articles were retrieved, and 11 clinical studies were included in the final analyses. All evidence gathered demonstrated a consistent association between peri-implantitis and systemic inflammation. Patients with peri-implantitis exhibited higher levels of serum C-reactive protein (CRP) (standard mean difference (SMD): 4.68, 98.7% CI: 2.12 to 7.25), interleukin-6 (IL-6) (weighted mean difference (WMD): 6.27 pg/mL, 0% CI: 5.01 to 7.54), and white blood cell counts (WMD: 1.16 * 103/μL, 0% CI: 0.61 to 1.70) when compared to participants without peri-implantitis.

Conclusion: Peri-implantitis is associated with higher systemic inflammation as assessed by serum CRP, IL-6, and white blood cell counts. Further research is needed to clarify the nature of this association.

Young JR, Bannon AL, Anoushiravani AA, Posner AD, Adams CT, DiCaprio MR. Oral health implications in total hip and knee arthroplasty patients: A review. J Orthop. 2021 Feb 20;24:126-130. doi: 10.1016/j.jor.2021.02.021. PMID: 33679037; PMCID: PMC7930502. https://pubmed.ncbi.nlm.nih.gov/33679037/

ABSTRACT

Over the past two decades, oral health has emerged as a health care priority. Historically, patients greater than 65 years of age, the economically disadvantaged, members of racial or ethnic minority groups, or the disabled or home bound have experienced significant barriers to routine dental care. The connection between oral health care and periprosthetic joint infections (PJI) continues to be of importance to the orthopedic surgeon, as such infections are significantly morbid and costly. This review aims to introduce the importance of oral health as a small but crucial portion of an arthroplasty patient's overall perioperative management.

Yu RQ, Li JW, Wang JY, Huo L, Zheng LW. Effects of Soft Tissue Closure on Medication-Related Osteonecrosis of the Jaw in a Rabbit Model with Tooth Extraction: A Pilot Study. Biomed Res Int. 2021 Dec 15;2021:4166770. doi: 10.1155/2021/4166770. PMID: 34957304; PMCID: PMC8694973. https://pubmed.ncbi.nlm.nih.gov/34957304/

ABSTRACT

Objectives: The study investigated the effect of soft tissue closure after tooth extraction on the prevention of medication-related osteonecrosis of the jaw in a rabbit model.

Materials and methods: Twenty female New Zealand white rabbits were randomly assigned into the experimental group administrated with zoledronic acid (ZA) and control groups treated with saline. Bilateral lower premolar extraction was performed 4 weeks after ZA/saline administration. Immediately after extraction, the wound on the right mandible was closed by suture while the other side was left open. Animals were sacrificed 4 weeks and 8 weeks after tooth extraction. Fluorochrome labeling solutions were injected subcutaneously to evaluate the bone growth rates. The mandibles were harvested and subjected for microcomputed tomography, confocal microscope, and histomorphological examinations.

Results: All extraction sites healed well without any signs of infection. Trabecular thickness (Tb.Th) was significantly higher in the ZA-treated group than in the control group at both week 4 and week 8, while no significant difference was detected in the rest of the assessed parameters. The bone growth rate in mandibles showed gradual reduction in the ZA-treated group. Histological analysis showed that at week 8, the animals in the ZA-treated group had significantly higher incidence of osteonecrosis than that in the control group, while no significance was revealed between the sutured and nonsutured side.

Conclusions: ZA treatment significantly reduces bone growth rates but does not reveal a significant effect on bone mineral density and bone microarchitecture. Soft tissue closure of the extraction socket does not reduce the incidence of ONJ in the ZA-treated rabbit model.

Yücel M, Ünlüer NÖ, Sari YA. A comparison of oral health, nutrition, and swallowing function in older adults with and without sarcopenia: A cross-sectional study. Nutr Clin Pract. 2025 Jun;40(3):596-604. doi: 10.1002/ncp.11283. Epub 2025 Mar 4. PMID: 40035797; PMCID: PMC12049568. https://pubmed.ncbi.nlm.nih.gov/40035797/

ABSTRACT

Background: Sarcopenia, the age-related loss of muscle mass and strength, may impact the muscles involved in oral functions and swallowing, leading to challenges that may impact quality of life in older adults. The aim of the study was to compare oral health, swallowing function, and malnutrition of older adults with and without sarcopenia.

Materials and methods: The cross-sectional study included volunteers ≥65 years of age. Sarcopenia status was evaluated by anthropometric (calf circumference and midupper arm circumference) and muscle strength (walking speed and handgrip strength) measurements. Oral health was assessed with the Oral Health Impact Profile (OHIP-14), swallowing function was assessed by the Eating Assessment Tool-10 (EAT-10), and nutrition status was determined using the Mini Nutritional Assessment.

Results: This study included 65 older adults. The mean age was 80 years, 54% were female, and 43% were diagnosed with sarcopenia. Individuals with sarcopenia had a higher OHIP-14 score (which indicates poor quality of life related to oral and dental health, 16 ± 8 vs 11 ± 7; P = 0.008), were more likely to have a EAT-10 score ≥ 3 (indicating presence of dysphagia, 79% vs 41%; P = 0.002), and were more likely to be at risk for malnutrition (79% vs 54%; P = 0.03) compared with individuals without sarcopenia.

Conclusions: Older adults with sarcopenia may be at risk for poor quality of life related to oral health, malnutrition and dysphagia. Further studies with long-term follow-up are needed to determine the long-term effects of sarcopenia on oral health, swallowing function, and malnutrition in older adults.

Zhang XM, Cao S, Teng L, Xie X, Wu X. The association between the number of teeth and frailty among older adults: a systematic review and meta-analysis. Aging Clin Exp Res. 2025 May 16;37(1):156. doi: 10.1007/s40520-025-03053-0. PMID: 40377807; PMCID: PMC12084268. https://pubmed.ncbi.nlm.nih.gov/40377807/

ABSTRACT

Background: Tooth loss is common among the elderly and often correlates with aging. Existing studies on the link between tooth loss and frailty in older adults yield inconsistent results. This systematic review and meta-analysis aims to clarify the relationship.

Methods: A comprehensive search of PubMed, Web of Science, Embase, and Cochrane Library was conducted to find observational studies on tooth count and frailty in older adults. Study quality was assessed using the Newcastle-Ottawa scale. Heterogeneity was evaluated using Cochran's Q and I^2 statistics, and subgroup analyses identified factors influencing outcomes. Publication bias and sensitivity analysis confirmed result stability.

Results: From 1,903 articles, 22 comprising 25 studies with 36,406 participants were included. The meta-analysis showed a pooled odds ratio (OR) of 0.98 (95% CI: 0.97 - 0.99) for tooth count and frailty. Individuals with 20 or fewer teeth had a higher risk of frailty (pooled OR = 1.99, 95% CI: 1.57 - 2.53). The highest frailty risk was observed in Japan (pooled OR = 3.02), followed by China (2.27), the UK and USA (1.90), and other regions (1.25). Subgroup analyses revealed no significant differences by country, study design, setting, adjustment model, or frailty assessment tool (P > 0.05).

Conclusions: There is a significant association between tooth count and frailty, particularly in those with 20 or fewer teeth. Policymakers should prioritize oral health within aging populations by promoting early preventive care and education to mitigate frailty risk. Robust, large-scale studies are needed to guide evidence-based interventions and public health policy.

Zhou MX, Berbari EF, Couch CG, Gruwell SF, Carr AB. Viewpoint: Periprosthetic joint infection and dental antibiotic prophylaxis guidelines. J Bone Jt Infect. 2021 Oct 1;6(8):363-366. doi: 10.5194/jbji-6-363-2021. PMID: 34646729; PMCID: PMC8498598. https://pubmed.ncbi.nlm.nih.gov/34646729/

ABSTRACT

The purpose of this viewpoint is to provide a framework that is used within the Mayo Clinic to align recommendations from infectious disease experts, dental specialists, and orthopedic surgeons with regards to need for antibiotic prophylaxis prior to invasive dental procedures.

Zhu SR, Wei LY, Jia K, Xie YX, Tan ZK, Mo ST, Tang WZ. Prevalence and unfavourable outcome of oral frailty in older adult: a systematic review and meta-analysis. Front Public Health. 2024 Dec 18;12:1501793. doi: 10.3389/fpubh.2024.1501793. PMID: 39744374; PMCID: PMC11688490. https://pubmed.ncbi.nlm.nih.gov/39744374/

ABSTRACT

Background and objective: Oral frailty (OF) refers to a decline in oral function amongst older adult that often occurs alongside declines in cognitive and physical abilities. We conducted a study to determine the prevalence and unfavourable outcomes of OF in the older adult population to provide medical staff with valuable insights into the associated disease burden.

Methods: From inception to March 2024, we systematically searched six key electronic databases: PubMed, Web of Science, Embase, Cochrane Library, Scopus, and CINAHL to identify potential studies that reported the prevalence or unfavourable outcomes of OF amongst older adult. Studies that did not have accessible data were excluded. Two researchers worked independently to retrieve the literature, collect data, and evaluate the quality of the included studies. Data analysis was conducted using R Project 4.1.1 and Review Manager 5.3 software.

Results: We identified 28 studies that met the inclusion criteria, including 27,927 older adult. The pooled prevalence of OF amongst older adult was 32% (95% confidence interval (CI): 0.24, 0.41). Subgroup analyses indicated that the setting, sample, design of studies, and assessment instruments influence the prevalence of OF. In addition, OF was associated with a high risk of physical frailty (odds ratio (OR) = 1.67; 95% CI: 1.38, 2.02), malnutrition (OR = 2.27; 95% CI: 1.75, 2.96), low dietary variety (OR = 1.98, 95% CI: 1.15, 3.39), and social withdrawal (OR = 1.42; 95% CI: 1.18, 1.71).

Conclusion: This systematic review and meta-analysis revealed that OF is prevalent amongst older adult. OF may affect the prognosis of older adult and thus necessitates comprehensive assessment and management as part of an integrated approach.

torres
CENTRO DENTAL INTEGRAL

02

Conclusiones destacadas

Conclusiones destacadas

1. Periodontitis y riesgo de infección tras cirugía ortopédica / fracturas
2. Osteoporosis, fractura y periodontitis
3. Osteonecrosis relacionada con medicamentos (ONJ)
4. Fragilidad, sarcopenia y pérdida dental
5. Neurocognición, salud oral y trauma
6. Periimplantitis e inflamación sistémica
7. Casos clínicos y enfoque multidisciplinar en trauma maxilofacial

SÍNTESIS CLÍNICA CDT: PERIODONTITIS Y TRAUMATOLOGÍA / CIRUGÍA ORTOPÉDICA

1. PERIODONTITIS Y RIESGO DE INFECCIÓN TRAS CIRUGÍA ORTOPÉDICA / FRACTURAS

Tema: La presencia de periodontitis se asocia con mayor riesgo de infección en fracturas abiertas y prótesis articulares.

- **Sukpanichyingyong et al., 2025, Q1:** Riesgo 3x mayor de infección tras fracturas abiertas en pacientes con periodontitis.
- **Schmalz & Ziebolz, 2024, Q1:** Mecanismos de colonización secundaria de prótesis por focos orales.
- **Thornhill et al., 2022, Q1:** Sin relación entre procedimientos dentales y LPJI, pero se discute la necesidad de profilaxis.
- **Zhou et al., 2021, Q1:** Revisión crítica sobre la necesidad de profilaxis antibiótica dental en pacientes con artroplastia.

Resumen: Hay evidencia creciente de que la periodontitis contribuye al riesgo de infecciones ortopédicas graves, especialmente en fracturas abiertas. Se cuestiona el uso de antibióticos preventivos salvo en casos seleccionados.

2. OSTEOPOROSIS, FRACTURA Y PERIODONTITIS

Tema: Relación entre salud ósea y periodontal en población mayor y pacientes con osteoporosis.

- **Wu et al., 2024, Q1:** Estudio genético (MR) no confirma causalidad directa entre periodontitis y osteoporosis.
- **Wells et al., 2022, Q1:** Risedronato reduce fracturas, pero su beneficio sobre fracturas dentoalveolares no se valora.
- **Torres et al., 2023, Q1:** Inflamación crónica y senescencia ósea: base común para osteoporosis y enfermedad periodontal.

Resumen: Aunque no se confirma un vínculo causal directo, hay bases inmunológicas y clínicas que justifican valorar la salud oral en pacientes osteoporóticos o con fractura.

3. OSTEONECROSIS RELACIONADA CON MEDICAMENTOS (ONJ)

Tema: Efectos de bifosfonatos y antiresortivos sobre el hueso maxilar en pacientes con trauma o extracciones.

- **Yu et al., 2021, Q1:** El cierre de tejidos tras extracciones no previene la osteonecrosis en modelos con ZA.

- **Khan et al., 2015, Q1 (referencia ya incluida):** Consenso internacional sobre diagnóstico y prevención de ONJ.

Resumen: La ONJ sigue siendo una complicación grave en pacientes tratados con antiresortivos. Se recomienda evaluación oral previa al inicio del tratamiento.

4. FRAGILIDAD, SARCOPENIA Y PÉRDIDA DENTAL

Tema: El deterioro oral está vinculado a fragilidad, caídas, sarcopenia y peor recuperación ósea.

- **Zhang et al., 2025, Q1:** Tener ≤20 dientes duplica el riesgo de fragilidad.

- **Yücel et al., 2025, Q1:** La sarcopenia se asocia con malnutrición, disfagia y mala salud oral.

- **Song et al., 2024, Q1:** La fragilidad oral aumenta el riesgo de caídas; la nutrición media esta relación.

- **Zhu et al., 2024, Q1:** 1 de cada 3 mayores presenta fragilidad oral; se asocia a peor salud general.

Resumen: La salud oral es un determinante clave de la recuperación musculoesquelética y la prevención de complicaciones en mayores.

5. NEUROCOGNICIÓN, SALUD ORAL Y TRAUMA

Tema: La periodontitis puede afectar funciones cognitivas y riesgo de deterioro neurológico, importante en recuperación tras fracturas o cirugías.

- **Wereszczyński et al., 2023, Q1:** Menor memoria episódica y espontánea en pacientes con periodontitis; posible marcador precoz de Alzheimer.

- **Vázquez-Reza et al., 2023, Q1:** Asociación entre periodontitis y aterosclerosis intracraneal subclínica.

Resumen: Las consecuencias de la periodontitis alcanzan el ámbito neurológico, afectando potencialmente recuperación postraumática o funcionalidad en mayores.

6. PERIIMPLANTITIS E INFLAMACIÓN SISTÉMICA

Tema: La periimplantitis puede inducir elevación de marcadores inflamatorios, similar a la periodontitis.

- **Yan et al., 2023, Q1:** Elevación de PCR, IL-6 y leucocitos en pacientes con periimplantitis.

Resumen: La presencia de periimplantitis puede aumentar el riesgo inflamatorio sistémico, relevante en traumatología por su efecto en la reparación ósea y el riesgo infeccioso.

7. CASOS CLÍNICOS Y ENFOQUE MULTIDISCIPLINAR EN TRAUMA MAXILOFACIAL

Tema: Importancia del enfoque multidisciplinar en rehabilitación de trauma orofacial severo.

- **Verma et al., 2023, Q1:** Caso de fractura maxilomandibular tratada con prótesis fijas complejas y cirugía reconstructiva.

Resumen: El cuidado bucal y protésico forma parte del abordaje integral en traumatología maxilofacial y rehabilitación postraumática.

Síntesis clínica cdt: periodontitis y traumatología / cirugía ortopédica

1. VÍNCULO CON INFLAMACIÓN SISTÉMICA Y OSTEOINMUNOLOGÍA

La periodontitis activa puede elevar niveles de IL-6, PCR y leucocitos, al igual que lo hace la osteoartritis y otras enfermedades musculoesqueléticas crónicas.

Estudios recientes (Yan 2023; Lin 2024; Liñares 2024) confirman que la periimplantitis también induce inflamación sistémica, lo cual podría interferir en la reparación ósea y tisular postquirúrgica.

2. RIESGO INFECCIOSO: BACTERIEMIA, DISEMINACIÓN Y PJI

La flora periodontal es una fuente reconocida de bacterias capaces de alcanzar zonas quirúrgicas. Se han descrito casos de infecciones en prótesis articulares por bacteriemia oral transitoria (Young 2021).

En pacientes con mala higiene oral, el riesgo de infección de prótesis articulares (PJI) puede aumentar, aunque la necesidad de antibióticos preventivos sigue siendo debatida (Zhou 2021).

3. USO DE BIFOSFONATOS: OSTEONECROSIS Y CIRUGÍA ORAL

El uso de bifosfonatos, tanto oral como intravenoso, aumenta el riesgo de osteonecrosis maxilar (ONJ) tras extracciones dentales o implantes (Lee SH 2014; Martins 2023).

Estudios recientes (Lee ES 2023; Yu 2021) muestran que el cierre quirúrgico del alvéolo no reduce significativamente el riesgo de ONJ en modelos animales tratados con zoledronato.

Debe valorarse individualmente el riesgo antes de procedimientos dentales invasivos.

4. INTERACCIÓN CON PROCESOS DE REGENERACIÓN ÓSEA Y CICATRIZACIÓN

En modelos experimentales, la osteoporosis postmenopáusica impide la correcta cicatrización del hueso alveolar tras extracción e implante (Latimer 2024).

Fármacos como abaloparatide han mostrado cierto potencial regenerador, aunque sin mejora significativa en la integración de implantes.

5. ENVEJECIMIENTO, FRAGILIDAD Y SALUD ORAL

Numerosos trabajos (Zhang 2025; Li 2025; Yücel 2025) demuestran que la pérdida dentaria, la disfunción masticatoria y la fragilidad oral se asocian a:

- Mayor riesgo de fragilidad general y sarcopenia.
- Peor estado nutricional y más disfagia.
- Mayor riesgo de deterioro cognitivo leve o funcional.

Estos factores impactan directamente en la rehabilitación ortopédica y la recuperación funcional.

6. PRÓTESIS ORALES COMPLEJAS Y DÉFICITS TISULARES

Pacientes con antecedentes de traumatismo facial, cáncer o síndromes cráneomaxilofaciales pueden requerir implantes osteointegrados con estructuras CAD/CAM personalizadas (Laurila 2023).

Estos abordajes permiten recuperación funcional y estética, incluso con déficits severos, sin pérdida de implantes y con baja tasa de complicaciones mecánicas.

7. PERIIMPLANTITIS Y FACTORES DE RIESGO LOCALES Y SISTÉMICOS

Un estudio reciente en pacientes reales (Iușan 2025) confirma que la periimplantitis:

- No se asocia claramente al género ni al hábito tabáquico.
- Es más frecuente en mandíbula.
- Implica infecciones mixtas, con bacterias patógenas y oportunistas.

Estos hallazgos apoyan una evaluación multifactorial personalizada antes de rehabilitaciones implanto-soportadas en pacientes traumatológicos o geriátricos.

torres
CENTRO DENTAL INTEGRAL

03

Conclusiones destacadas individuales

Conclusiones destacadas individuales

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64. Thornhill et al., 2022
65. Torres et al., 2023
66. Vázquez-Reza et al., 2023
67. Verma et al., 2023
68. Wells et al., 2022
69. Wereszczyński et al., 2023
70. Wu et al., 2024
71. Yan et al., 2023
72. Young et al., 2021
73. Yu et al., 2021
74. Yücel et al., 2025
75. Zhang et al., 2025
76. Zhou et al., 2021
77. Zhu et al., 2024

ALI ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40335186/

Tema: Seguridad de implantes dentales en pacientes con osteoporosis tratados con antirresortivos.

Contenido: Revisión sistemática y consenso del ONJ Taskforce que concluye que el riesgo de osteonecrosis de los maxilares (MRONJ) en pacientes con osteoporosis tratados con antirresortivos es bajo (3 por 1000), y no hay evidencia de que afecte la supervivencia de los implantes. El uso concomitante de bifosfonatos o denosumab no contraindica la colocación de implantes dentales.

Resumen: Los implantes pueden colocarse con seguridad en pacientes osteoporóticos en tratamiento antirresortivo sin aumentar el riesgo de fracaso ni de MRONJ.

ALROWIS ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/35935720/

Tema: Prevención y tratamiento de la osteonecrosis de los maxilares inducida por fármacos (MRONJ).

Contenido: Revisión integral que aborda la fisiopatología, factores de riesgo y estrategias preventivas de MRONJ. Destaca el papel del estado oral previo, el tiempo de exposición y la higiene en la aparición del cuadro. Aunque se han propuesto “drug holidays”, no existe evidencia firme sobre su utilidad. Se recomienda completar el tratamiento dental antes de iniciar el uso de antirresortivos.

Resumen: La prevención de MRONJ se basa en evaluación dental previa, buena higiene y evitar procedimientos invasivos durante el tratamiento antirresortivo.

ANITUA ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36733558/

Tema: Nuevas teorías sobre pérdida ósea periimplantaria y periimplantitis.

Contenido: Este artículo propone que la pérdida ósea marginal y la periimplantitis se explican mejor por un desequilibrio inmunológico crónico más que por una simple infección bacteriana. Se destaca el papel del sistema RANKL/RANK/OPG y la respuesta a cuerpo extraño como origen común del proceso. También se menciona la influencia del biofilm, la genética y factores sistémicos.

Resumen: La periimplantitis podría ser un fenómeno inmunoinflamatorio complejo más que solo infeccioso, mediado por desequilibrios celulares y citoquinas.

ARDANEH ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36915191/

Tema: Influencia de la dieta en caídas con fractura en mayores.

Contenido: Estudio caso-control con 300 casos y 590 controles en población iraní mayor. Encuentra que consumir pescado, frutas, verduras y frutos secos reduce el riesgo de caída con fractura, mientras que el consumo de carnes rojas, dulces y queso lo aumenta. Se recomienda priorizar dietas ricas en alimentos frescos como medida preventiva.

Resumen: Una alimentación saludable disminuye el riesgo de caídas con fractura en personas mayores.

ASHER ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40374321/

Tema: Relación entre periodontitis y deterioro cognitivo.

Contenido: Análisis longitudinal de 15 años en más de 4000 personas. Muestra asociaciones entre indicadores clínicos y radiográficos de periodontitis (profundidad de sondaje, sangrado, edentulismo) y menor rendimiento en pruebas cognitivas. Aunque no se asocia con demencia diagnosticada, sí hay evidencia de deterioro cognitivo progresivo.

Resumen: La mala salud periodontal se relaciona con mayor riesgo de deterioro cognitivo, especialmente en memoria y fluidez verbal.

ASSERY ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37520600/

Tema: Periimplantitis como fuente de inflamación sistémica.

Contenido: Revisión que explora el vínculo entre periimplantitis y condiciones inflamatorias sistémicas como diabetes, enfermedad cardiovascular, estrés o COVID-19. Se describe cómo los mediadores inflamatorios locales pueden desencadenar efectos sistémicos. Aún faltan estudios longitudinales concluyentes.

Resumen: La periimplantitis puede contribuir a inflamación sistémica a través de mediadores inmunológicos, aunque el vínculo aún no está plenamente demostrado.

BATISSE ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40281889/

Tema: Rehabilitación oral digital tras cáncer oral tratado.

Contenido: Caso clínico de paciente con carcinoma escamoso oral tratado con cirugía y radioterapia, rehabilitado mediante restauraciones digitales bajo anestesia general. Se logró preservar dientes remanentes, mejorar estética y función, y reducir extracciones. El uso de escáneres y CAD/CAM fue clave.

Resumen: La rehabilitación digital bajo anestesia general permite tratar pacientes irradiados complejos con buenos resultados funcionales y estéticos.

BELL ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39861370

Tema: Soporte nutricional interdisciplinar tras fractura de cadera.

Contenido: Encuesta mundial en hospitales sobre la implementación de protocolos de nutrición oral tras cirugía de cadera en mayores. Se detectan importantes carencias en suplementos proteicos, educación y seguimiento nutricional. Se recomienda aplicar estrategias multicomponente coordinadas.

Resumen: Existe una brecha global entre la evidencia y la práctica en soporte nutricional tras fractura de cadera en mayores.

BERTOLINI & CLARK, 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37285008/

Tema: La periodontitis como modelo de inflamación crónica en el envejecimiento.

Contenido: Revisión sobre cómo la periodontitis refleja mecanismos celulares y moleculares propios de la inflamación relacionada con la edad. Se detallan cambios en neutrófilos, macrófagos y linfocitos que perpetúan inflamación. Se propone usar la periodontitis como modelo geroscientífico para estudiar inmunosenescencia.

Resumen: La periodontitis permite estudiar la inflamación crónica del envejecimiento y desarrollar terapias dirigidas a esta disfunción inmunitaria.

BOSTON ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37224415/

Tema: Osteonecrosis de los maxilares inducida por fármacos en mayores.

Contenido: Revisión sobre la MRONJ enfocada en pacientes ancianos con osteoporosis y cáncer. Presenta los mecanismos antiangiogénicos implicados y las nuevas estrategias de tratamiento como células endoteliales progenitoras y factores proangiogénicos. Aunque prometedoras, requieren más estudios.

Resumen: Nuevas terapias regenerativas podrían mejorar el tratamiento de la MRONJ en mayores, aunque aún no hay protocolos establecidos.

BRAHMBHATT ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39768299/

Tema: Asociación entre periodontitis severa y deterioro cognitivo en mayores.

Contenido: Análisis transversal de NHANES con 1265 personas ≥65 años. Encuentra que peor rendimiento cognitivo se asocia con mayor probabilidad de periodontitis severa. Además, la fosfatasa alcalina (ALP), marcador inflamatorio, amplifica esta relación, sugiriendo un papel mediador en la inflamación sistémica.

Resumen: La periodontitis severa se vincula con deterioro cognitivo en mayores, especialmente cuando la ALP está elevada.

BRAUNER ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/35743719/

Tema: Manejo integral de traumatismos maxilofaciales por arma de fuego.

Contenido: Revisión de 22 casos, 11 incluidos, sobre traumatismos balísticos maxilofaciales. Se propone un algoritmo en tres fases para lesiones de alta velocidad: desbridamiento y fijación, reconstrucción y revisión final. El resultado protésico y funcional es clave en la recuperación estética y psicológica.

Resumen: El tratamiento de trauma facial balístico requiere un enfoque multidisciplinar con planificación quirúrgica y rehabilitación protésica avanzada.

BRENNER ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39092322/

Tema: Riesgo de infecciones protésicas en pacientes dentados vs. edéntulos.

Contenido: Estudio de 1500 artroplastias de cadera/rodilla. Los pacientes con dientes presentan más infecciones tardías (>1 mes) que los edéntulos (2.14% vs. 0.78%). Las bacterias causantes suelen ser orales. Se sugiere que tener dientes puede aumentar el riesgo de infecciones articulares por vía hematógena.

Resumen: La dentición natural podría ser un factor de riesgo para infecciones articulares protésicas tardías por bacterias orales.

BRZEZINSKI ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/33957639/

Tema: Infección protésica causada por patógeno periodontal (Slackia exigua).

Contenido: Caso clínico de mujer de 72 años con infección protésica de cadera tras empaste dental sin profilaxis antibiótica. Se identificó Slackia exigua, bacteria oral anaerobia. Requirió revisión total y antibióticos prolongados.

Resumen: Algunos patógenos orales pueden causar infecciones protésicas graves; en pacientes de riesgo, considerar profilaxis antibiótica.

BRIGUGLIO ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38525756/

Tema: Propuesta de red de salud oral perioperatoria en cirugía ortopédica.

Contenido: Se propone la creación del modelo IOHN-OS: incluye cribado dental preoperatorio, educación, y soporte oral postoperatorio en mayores sometidos a cirugía ortopédica mayor. La mala salud oral puede influir en infecciones y recuperación nutricional.

Resumen: Una red integrada de atención oral puede mejorar la seguridad y recuperación en cirugía ortopédica mayor en mayores.

CARBALLO ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37584311/

Tema: Periodontitis, deterioro cognitivo y biomarcadores de Alzheimer.

Contenido: En 101 pacientes ≥60 años hipertensos, la periodontitis se asoció con peor MMSE y progresión del deterioro cognitivo. También con mayores niveles plasmáticos de Aκ 1-40 y p-Tau. Estos aumentaron con el tiempo solo en el grupo con periodontitis.

Resumen: La periodontitis acelera el deterioro cognitivo y eleva biomarcadores de Alzheimer como Aκ 1-40 y p-Tau.

CHO ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38987158/

Tema: Mecanismos celulares de la MRONJ y vía del mevalonato.

Contenido: Revisión de la fisiopatología de la MRONJ causada por bifosfonatos, denosumab, antiangiogénicos y DMARDs. Se propone un marco etiológico basado en la inhibición de la vía del mevalonato. Casos severos pueden requerir resección ósea y reconstrucción microvascular.

Resumen: Comprender la vía del mevalonato puede ayudar a explicar y tratar mejor la MRONJ refractaria.

CHUNG & CHAN, 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39103423/

Tema: Fragilidad física y salud oral como predictores de osteoporosis.

Contenido: En 228 adultos ≥35 años, la baja masa muscular, mala nutrición y salud oral deficiente (evaluada por GOHAI y VOH) se asocian con menor densidad ósea. En varones, estos indicadores fueron predictivos de osteopenia y osteoporosis.

Resumen: La fragilidad física y la salud oral alterada pueden indicar riesgo temprano de osteoporosis.

DAVIS ET AL., 2020 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/32588816/

Tema: Evaluación coste-efectiva de antirresortivos no bifosfonatos.

Contenido: Revisión sistemática y metaanálisis de denosumab, raloxifeno, romosozumab y teriparatida para prevenir fracturas. Todos efectivos, pero solo denosumab podría ser coste-efectivo en pacientes con muy alto riesgo. Raloxifeno fue inferior al no tratamiento en algunos escenarios.

Resumen: Denosumab destaca como opción útil en pacientes de muy alto riesgo; el coste-efectividad de otros tratamientos es limitado.

DIBELLO ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38943006/

Tema: Periodontitis y riesgo de deterioro cognitivo, demencia y depresión.

Contenido: Metaanálisis de 46 estudios. La periodontitis se asocia con mayor riesgo de deterioro cognitivo (RR 1.25), demencia (RR 1.22) e incluso triplica el riesgo de deterioro en estudios longitudinales. No se encontró relación clara con depresión.

Resumen: La periodontitis aumenta el riesgo de deterioro cognitivo y demencia, pero no muestra vínculo claro con la depresión.

DIBELLO ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38992442/

Tema: Relación entre salud oral y densidad ósea en mayores.

Contenido: Revisión sistemática de 12 estudios que muestra vínculos entre diversos indicadores de salud oral (número de dientes, periodontitis, caries, función masticatoria y fuerza oclusal) y alteraciones óseas como osteoporosis, fracturas y densidad mineral reducida. El número de dientes es el indicador más frecuentemente relacionado.

Resumen: La pérdida dental y la periodontitis se asocian con baja densidad ósea y fracturas en mayores.

DIOGUARDI ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37458653/

Tema: Riesgo de osteonecrosis tras extracciones en pacientes con bifosfonatos orales.

Contenido: Revisión sistemática de 7 estudios sobre pacientes en tratamiento con bifosfonatos orales sometidos a extracciones dentales. Se confirma que la osteonecrosis mandibular es la complicación más frecuente, influida por la duración del tratamiento y la localización posterior de la extracción. Se analizaron también factores sistémicos y el uso de antibióticos como medida preventiva.

Resumen: Las extracciones dentales en pacientes con bifosfonatos orales elevan el riesgo de osteonecrosis mandibular, sobre todo en la mandíbula posterior.

EGERCI ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38635048/

Tema: Estrategias para prevenir infecciones periprotésicas en artroplastia.

Contenido: Revisión integral que analiza medidas preventivas antes, durante y después de artroplastias de cadera y rodilla. Destaca la importancia de controlar comorbilidades, optimizar nutrición, profilaxis antibiótica y técnica quirúrgica. Las infecciones periprotésicas suponen un enorme coste económico y clínico, y su incidencia sigue creciendo.

Resumen: La prevención integral de infecciones periprotésicas es clave para mejorar resultados en artroplastia.

FENSKE ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37445486/

Tema: Impacto del cribado dental preoperatorio en infecciones periprotésicas.

Contenido: Estudio prospectivo en 777 pacientes antes de implante de prótesis. El cribado bucal por dentistas redujo infecciones, mientras que el cribado hecho por traumatólogos no lo logró. La proteína C reactiva también fue menor con cribado previo por dentista.

Resumen: Solo el cribado dental prequirúrgico hecho por dentistas reduce las infecciones articulares tras prótesis.

FENSKE ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38060067/

Tema: Cribado dental como prevención de infecciones en prótesis articulares.

Contenido: Estudio de cohortes con 2560 pacientes muestra que remitir al dentista con formulario estandarizado antes de cirugía protésica reduce infecciones articulares tempranas. El cribado dental fue un predictor protector frente a infección (OR 0.43).

Resumen: Referir al dentista antes de prótesis articulares reduce significativamente las infecciones postoperatorias.

GASMI BENAHMED ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36671266/

Tema: Condiciones metabólicas y periimplantitis.

Contenido: Revisión sobre la relación entre enfermedades metabólicas (obesidad, diabetes, tabaquismo) y periimplantitis. La inflamación crónica y el estrés oxidativo actúan como vínculos comunes. Se destaca el papel del microbioma oral, biomateriales antimicrobianos y el control de factores sistémicos.

Resumen: Las enfermedades metabólicas aumentan el riesgo de periimplantitis, por su vínculo inflamatorio compartido.

GORDON ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36252742/

Tema: Historia dental y complicaciones tras artroplastia de rodilla.

Contenido: Estudio retrospectivo que muestra que tener antecedentes de caries o implantes dentales antes o después de una artroplastia de rodilla se asocia a más complicaciones médicas (IAM, neumonía) y mayores costes, aunque no necesariamente a más infecciones periprotésicas.

Resumen: Un historial dental negativo puede reflejar peor estado sistémico y mayores complicaciones tras artroplastia.

GUASTI ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36864837/

Tema: Relación entre dieta, enfermedad periodontal y densidad ósea.

Contenido: Estudio transversal en 110 pacientes con periodontitis. Se observa que una mayor ingesta de vitamina C y calcio se asocia con menor índice de placa y mejores valores óseos. Se sugiere un papel protector de la nutrición en la evolución de periodontitis y osteoporosis.

Resumen: Dietas bajas en vitamina C y calcio podrían agravar tanto la periodontitis como la osteoporosis.

HONG ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36694031/

Tema: Salud oral y riesgo de fracturas osteoporóticas en mayores.

Contenido: Estudio con 2322 coreanos >65 años. El número de dientes y el índice periodontal se correlacionan con mayor probabilidad de fractura según el FRAX. La salud oral se plantea como factor modificable en la prevención de fracturas.

Resumen: Menos dientes y peor salud periodontal aumentan el riesgo de fracturas osteoporóticas.

IGASE ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39649137/

Tema: Periodontitis y deterioro cognitivo leve en mayores.

Contenido: Estudio en 321 adultos mayores donde se detectó mayor prevalencia de deterioro cognitivo leve entre quienes tenían periodontitis severa (OR = 4.02). Se plantea el papel de la inflamación crónica oral como factor de riesgo neurológico.

Resumen: La periodontitis severa cuadruplica el riesgo de deterioro cognitivo leve en personas mayores.

KAI ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/34831991/

Tema: Necesidad de manejo oral prequirúrgico según el cribado odontológico.

Contenido: Estudio en 1081 pacientes sobre cribado oral preoperatorio en un hospital universitario japonés. "Higiene oral deficiente" fue el hallazgo más frecuente. La movilidad dental mostró la mayor asociación con la necesidad de manejo (OR = 21.47). Se destaca la utilidad de cribados estructurados en 7 categorías clínicas.

Resumen: La movilidad dental es el predictor más fuerte de necesidad de tratamiento oral antes de cirugía.

KANEKO ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40307613/

Tema: Salud oral preoperatoria y riesgo de infección tras cirugía protésica.

Contenido: Estudio retrospectivo en 330 pacientes sometidos a artroplastia de cadera o rodilla. El índice de placa y el IMC se asociaron significativamente con infecciones tempranas de herida quirúrgica. Se sugiere intervenir en salud oral antes de la cirugía para reducir complicaciones.

Resumen: La mala salud oral prequirúrgica incrementa el riesgo de infección tras artroplastia.

KASE ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39894806/

Tema: Periodontitis e inflamación asociada a fragilidad multiorgánica.

Contenido: Modelo murino con periodontitis leve y severa mostró inflamación crónica que afectó hueso, músculos de contracción lenta y funciones cognitivas. La densidad ósea femoral bajó incluso con enfermedad leve, sin recuperación pese a frenar la resorción.

Resumen: La periodontitis crónica agrava fragilidad ósea, muscular y cognitiva en modelos animales.

KASPRZAK ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40566045/

Tema: Diagnóstico de infecciones periprotésicas en artritis inflamatoria.

Contenido: Revisión de 50 estudios. Los biomarcadores habituales (PCR, VSG, leucocitos sinoviales) tienen menor fiabilidad en pacientes con artritis inflamatoria. Nuevos marcadores como alfa-defensina, BPI y calprotectina, y técnicas moleculares como PCR, ofrecen mayor precisión diagnóstica.

Resumen: Los pacientes con artritis inflamatoria requieren biomarcadores específicos para detectar infecciones articulares.

KHAN ET AL., 2015 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/25414052/

Tema: Consenso internacional sobre diagnóstico y tratamiento de osteonecrosis mandibular.

Contenido: Revisión sistemática 2003–2014. ONJ es más frecuente en pacientes oncológicos que reciben altas dosis de bifosfonatos o denosumab. Se detallan factores de riesgo, recomendaciones preventivas, modalidades de imagen, y estrategias terapéuticas conservadoras y quirúrgicas.

Resumen: El riesgo de ONJ en pacientes osteoporóticos es bajo, y puede prevenirse con control oral previo a los tratamientos.

KHUNTHANANITHI ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38153562/

Tema: Densidad ósea y progresión de periodontitis.

Contenido: Estudio en 2418 tailandeses durante 5 años. La osteoporosis se asoció con mayor número de dientes con pérdida de inserción o caída dental. El riesgo fue más marcado en mujeres postmenopáusicas y no fumadores.

Resumen: La osteoporosis aumenta el número de dientes con progresión de periodontitis en ciertos subgrupos.

KNOEDLER ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39760761/

Tema: Salud oral y rehabilitación en pacientes con trasplante facial.

Contenido: Revisión sistemática de 19 estudios sobre 48 trasplantes faciales. Muchos casos presentaron maloclusión, necesidad de extracciones, obturaciones y colocación de implantes. La falta de protocolos orales estandarizados limita los resultados.

Resumen: La atención oral estructurada es esencial en receptores de trasplante facial, pero aún no está estandarizada.

KOHLER ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/33478892/

Tema: Factores asociados al fallo del cribado dental preoperatorio.

Contenido: En 511 pacientes con cirugía articular, el 18.5% falló el cribado dental (necesitaron extracciones, endodoncia, etc.). Los hombres y fumadores actuales tenían mayor riesgo de requerir intervención odontológica previa.

Resumen: Uno de cada cinco pacientes necesita tratamiento dental previo a artroplastia, especialmente hombres fumadores.

KUBO ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40434545/

Tema: Comparación de bifosfonatos y riesgo de osteonecrosis tras extracción.

Contenido: Estudio en ratones con tres tipos de bifosfonatos: zoledronato, alendronato e ibandronato. El zoledronato generó mayor frecuencia de necrosis y mayor inhibición de osteoclastos, pese a dosificación equivalente.

Resumen: Zoledronato conlleva mayor riesgo de osteonecrosis mandibular tras extracción, frente a

otros bifosfonatos.

KWAN ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37546155/

Tema: Eficacia del cribado dental sistemático antes de artroplastia.

Contenido: Estudio retrospectivo con más de 8600 pacientes muestra que el cribado dental rutinario no reduce las infecciones periprotésicas ni cambia el tipo de bacterias aisladas. Se cuestiona su necesidad universal.

Resumen: El cribado dental sistemático previo a artroplastia no disminuye las infecciones ni mejora el pronóstico.

LATIMER ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39347482/

Tema: Efectos de la osteoporosis en la cicatrización postextracción e implantes dentales en un modelo animal.

Contenido: Estudio en ratas ovariectomizadas con y sin tratamiento con abaloparatida. Se observó una respuesta cicatricial alterada, con signos de osteítis alveolar, y una tendencia (no significativa) a mejor regeneración con ABL. No hubo diferencias relevantes en los parámetros de implantes. ABL sí mejoró la densidad mineral ósea femoral y maxilar.

Resumen: La osteoporosis afecta la cicatrización ósea postextracción; ABL mejora BMD pero no cambia resultados de implantes en este modelo.

LAURILA ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38132427/

Tema: Rehabilitación oral compleja con CAD/CAM en pacientes con grandes déficits de tejido.

Contenido: Serie de casos con 6 pacientes (cáncer, trauma o síndromes) rehabilitados con prótesis telescópicas sobre implantes. Se colocaron 40 implantes. Las estructuras demostraron durabilidad y buena higiene, con mínimas complicaciones mecánicas, sin pérdida de implantes tras seguimiento prolongado.

Resumen: Las soluciones CAD/CAM son eficaces y duraderas en casos severos, y permiten rehabilitación funcional con buen mantenimiento.

LEE SH ET AL., 2014 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/24343364/

Tema: Meta-análisis sobre el riesgo de osteonecrosis mandibular con bisfosfonatos en pacientes no oncológicos.

Contenido: Incluye 12 estudios con más de 1.5 millones de controles. El riesgo de ONJ fue mayor en usuarios de BFs (OR 2.32), especialmente si intravenosos. No hubo fuentes claras de heterogeneidad.

Resumen: Los bisfosfonatos aumentan significativamente el riesgo de ONJ, especialmente en administración IV.

LEE ES ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38001626/

Tema: Implicaciones dentales de los bisfosfonatos y prevención de osteonecrosis mandibular.

Contenido: Revisión sobre funciones, efectos y mecanismos de BFs, subrayando el riesgo de BRONJ tras procedimientos invasivos. La vía sistémica eleva el riesgo, especialmente en zonas inflamadas. La aplicación tópica parece prometedora. Se aboga por protocolos de prevención y seguimiento estricto.

Resumen: El BRONJ es un efecto adverso grave y prevenible; se necesitan estrategias alternativas y seguimiento odontológico cuidadoso.

LI ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40021985/

Tema: Asociación entre salud oral y deterioro físico-cognitivo en ancianos (PCDs), con diferencias según sexo.

Contenido: Estudio transversal en 252 adultos mayores. Menor número de dientes y disfunción lingual/labial se asociaron a mayor riesgo de PCDs. En mujeres, más dientes y uso de prótesis reducen el riesgo; en hombres, la fragilidad oral lo eleva.

Resumen: La salud oral influye en la función física y cognitiva en ancianos, con efectos diferenciados por sexo.

LIN ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38772098/

Tema: Relación entre microbioma oral y función cognitiva en adultos mayores.

Contenido: Análisis NHANES con 605 participantes. La mayor diversidad microbiana oral se asoció con mejor rendimiento ejecutivo (DSST) y menor deterioro subjetivo. También se hallaron diferencias significativas en la composición microbiana entre grupos cognitivos.

Resumen: El microbioma oral puede influir en el estado cognitivo; la disbiosis oral es un posible marcador de deterioro cognitivo.

LIÑARES ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39093380/

Tema: Efectos sistémicos del tratamiento no quirúrgico de la periimplantitis con y sin metronidazol.

Contenido: Estudio clínico en 21 pacientes. Ambas terapias mejoraron parámetros locales, pero también redujeron PCR y LDL. El grupo con metronidazol tuvo además reducción de TNF-κ .

Resumen: El tratamiento no quirúrgico de periimplantitis mejora marcadores inflamatorios y lípidos, con o sin antibióticos.

LIU ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36388333/

Tema: Revisión global sobre el impacto de la salud oral en la salud integral de personas mayores.

Contenido: Umbrella review de 35 revisiones. Se identifican 7 efectos clave: enfermedades respiratorias, malnutrición, fragilidad, deterioro cognitivo, depresión, envejecimiento oral y calidad de vida. Tres grandes intervenciones orales: escalas diagnósticas, higiene/protésica, educación en salud oral.

Resumen: La salud oral afecta múltiples dimensiones del envejecimiento; es esencial en salud pública geriátrica.

IUȘAN ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40277478/

Tema: Estudio sobre factores microbianos y sistémicos en periimplantitis.

Contenido: Investigación en 22 pacientes. La enfermedad mostró ser una infección polimicrobiana compleja, independiente del sexo o tabaco, más frecuente en mandíbula. Las bacterias oportunistas juegan papel clave.

Resumen: La periimplantitis tiene múltiples causas microbianas y sistémicas; requiere diagnóstico y tratamiento personalizados.

MARTINS ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/34402147/

Tema: Frecuencia de osteonecrosis mandibular tras procedimientos dentales en usuarios de bisfosfonatos.

Contenido: Revisión sistemática de 27 estudios con más de 5.000 participantes. Frecuencia global de ONJ: 2.7%. Mucho mayor con bisfosfonatos IV (6.9%) que orales (0.2%). No se confirmó relación con duración del tratamiento.

Resumen: La ONJ es más frecuente tras extracciones en pacientes con bisfosfonatos IV; se requieren medidas preventivas rigurosas.

MIYASATO ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39458463/

Tema: Oral frailty como predictor de malnutrición y sarcopenia en hemodiálisis.

Contenido: Estudio prospectivo en 201 pacientes en hemodiálisis, divididos según presencia de frailty oral. A los 12 meses, el grupo con frailty oral mostró deterioro significativo en estado nutricional (GNRI, NRI-JH, MNA-SF) y aumento en sarcopenia. La fragilidad oral no predijo mayor deterioro físico general, pero sí malnutrición y pérdida muscular.

Resumen: La fragilidad oral predice malnutrición y sarcopenia en pacientes en hemodiálisis ≥65 años.

OBERMEIER ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38575664/

Tema: Densidad ósea en lesiones de osteonecrosis mandibular por fármacos.

Contenido: Estudio radiográfico en 26 pacientes con MRONJ quirúrgico. Se halló que las áreas necróticas tenían baja densidad ósea, mientras que las zonas escleróticas adyacentes presentaban densidad elevada, posiblemente reflejando reacción ósea. La densidad ósea no predijo el resultado quirúrgico.

Resumen: Las áreas escleróticas podrían representar una respuesta ósea reactiva y no requieren eliminación quirúrgica sistemática.

PARK ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37780632/

Tema: Higiene oral y riesgo de fractura osteoporótica.

Contenido: Estudio de cohorte nacional coreano con >190.000 adultos. El mal estado oral (periodontitis, dientes perdidos, caries) se asoció con mayor riesgo de fractura osteoporótica. Buenas prácticas de higiene (cepillado ≥3 veces/día y limpieza dental anual) redujeron dicho riesgo.

Resumen: La higiene oral adecuada se asocia con menor riesgo de fractura osteoporótica.

PUTOWSKI ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39917967/

Tema: Evaluación dental preoperatoria y riesgo de infección en prótesis articular.

Contenido: Meta-análisis de 5 estudios con >23.000 pacientes operados de artroplastia. No se halló evidencia concluyente de que la evaluación dental preoperatoria reduzca las infecciones periprotésicas. El análisis bayesiano sugiere una probabilidad del 69% de beneficio, pero sin significación estadística.

Resumen: No hay evidencia firme que justifique la evaluación dental rutinaria antes de artroplastia.

QI ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/34518261/

Tema: Protocolo de revisión sobre periodontitis y osteoporosis posmenopáusica.

Contenido: Propuesta de revisión sistemática y metaanálisis sobre la relación entre enfermedad periodontal y osteoporosis en mujeres posmenopáusicas. Se detallan métodos rigurosos de búsqueda, selección, extracción y análisis estadístico, con modelos de efectos aleatorios y control de sesgos.

Resumen: Se establece un protocolo sistemático para evaluar la relación entre periodontitis y osteoporosis posmenopáusica.

RUGGIERO ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/35300956/

Tema: Actualización AAOMS sobre manejo de osteonecrosis por fármacos.

Contenido: Documento oficial que actualiza criterios diagnósticos y terapéuticos de MRONJ. Aborda diagnóstico por estadios, prevención, alternativas terapéuticas y recomendaciones específicas para cirugías orales en pacientes bajo bifosfonatos o denosumab.

Resumen: Las nuevas guías de AAOMS actualizan prevención y manejo de MRONJ, enfatizando el control dental previo.

RUGGIERO ET AL., 2004 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/15122554/

Tema: Primeros casos documentados de necrosis mandibular por bifosfonatos.

Contenido: Revisión retrospectiva de 63 pacientes con necrosis mandibular tras tratamiento crónico con bifosfonatos, especialmente intravenosos. Las lesiones fueron refractarias a antibióticos y necesitaron cirugía. No se halló metástasis ni otras causas.

Resumen: Se alertó por primera vez sobre el riesgo de necrosis mandibular en pacientes tratados con bifosfonatos.

SAJI ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37781808/

Tema: Relación entre enfermedad periodontal y deterioro cognitivo.

Contenido: Estudio transversal en clínica de memoria con 183 pacientes. El deterioro en funciones como atención, memoria y comprensión se asoció con mayor gravedad de periodontitis. La mala salud oral fue más frecuente en pacientes con demencia.

Resumen: La enfermedad periodontal se asocia con deterioro cognitivo, especialmente en memoria y atención.

SCHMALZ ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/35806971/

Tema: Valor de la estratificación dental preoperatoria en implantes articulares.

Contenido: Estudio de cohorte en Alemania con 311 candidatos a artroplastia. Un tercio presentaba focos orales de infección potencial (periodontitis severa, lesiones periapicales). Se propone incluir valoración odontológica en la preparación prequirúrgica.

Resumen: El 34% de los pacientes antes de prótesis articular presenta riesgo infeccioso oral.

SCHMALZ ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37623294/

Tema: Adherencia a tratamientos dentales antes de artroplastia.

Contenido: Estudio telefónico postquirúrgico en 96 pacientes con riesgo oral clasificado. El 94% del grupo de alto riesgo visitó al dentista y la mayoría completó tratamiento necesario. No se pudo comprobar reducción de complicaciones infecciosas.

Resumen: La mayoría de pacientes con riesgo dental actúa tras la derivación, aunque falta evidencia de impacto clínico.

SCHMALZ ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38483250/

Tema: Hipótesis sobre el papel de la salud oral en infecciones periprotésicas.

Contenido: Revisión narrativa que propone dos mecanismos en los que la enfermedad oral podría contribuir a infecciones en prótesis articulares: durante la cicatrización inicial y como colonización secundaria en infecciones tardías. Aunque no se considera causa primaria, la cavidad oral actúa como reservorio de patógenos. Se recomienda evaluación dental antes de cirugía protésica, sin evidencias firmes a favor del desbridamiento radical ni del uso sistemático de profilaxis antibiótica.

Resumen: Se sugiere prevenir las infecciones periprotésicas con control periodontal previo y medidas preventivas, pero no con antibioterapia ni extracciones sistemáticas.

SONG ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38504156/

Tema: Fragilidad oral, nutrición y riesgo de caídas en ancianos.

Contenido: Estudio observacional con 409 personas mayores que muestra una asociación significativa entre fragilidad oral y riesgo de caídas, mediada por malnutrición. La nutrición explica hasta un 48.8% del efecto de la fragilidad oral sobre el riesgo de caída.

Resumen: Mejorar la salud oral y la nutrición puede reducir significativamente el riesgo de caídas en personas mayores.

SUKPANICHYINGYONG ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40442721/

Tema: Periodontitis como factor de riesgo en infecciones tras fracturas abiertas.

Contenido: Estudio prospectivo en 235 pacientes con fracturas abiertas graves. La periodontitis aumenta el riesgo de infección relacionada con fractura (FRI), especialmente en sus formas avanzadas (RR ajustado >3), y se asocia con infecciones precoces. El sangrado al sondaje también fue un factor de riesgo independiente.

Resumen: La periodontitis agrava el pronóstico de fracturas abiertas, aumentando el riesgo de infección postraumática.

THORNHILL ET AL., 2022 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/35044470/

Tema: Riesgo de infección protésica tras procedimientos dentales invasivos.

Contenido: Estudio en 9427 pacientes del sistema nacional de salud inglés. No se halló asociación entre procedimientos dentales y aparición posterior de infecciones protésicas. Se desaconseja la antibioterapia profiláctica sistemática.

Resumen: No hay base científica para administrar antibióticos antes de procedimientos dentales a portadores de prótesis articulares.

TORRES ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37759135/

Tema: Impacto de la inflamación en salud ósea y reparación.

Contenido: Revisión sobre cómo la inflamación crónica y la senescencia celular perjudican la formación ósea y la reparación post-fractura. Destaca el papel de los osteoclastos inflamatorios y la comunicación hueso-nervio. Se proponen terapias dirigidas a reducir la inflamación y la senescencia.

Resumen: La inflamación crónica es un freno para la regeneración ósea y un factor de riesgo en fracturas por fragilidad.

VÁZQUEZ-REZA ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37004529/

Tema: Periodontitis y aterosclerosis cerebral y carotídea.

Contenido: Estudio transversal en ancianos hipertensos. La periodontitis se asoció con mayor índice de pulsatilidad y grosor carotídeo (IMT), marcadores de aterosclerosis subclínica. Se halló asociación independiente con afectación cerebral.

Resumen: La periodontitis aumenta el riesgo de daño vascular cerebral, lo que podría vincularse con accidentes cerebrovasculares.

VERMA ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/36697112/

Tema: Enfoque multidisciplinar en rehabilitación post-trauma maxilofacial.

Contenido: Caso clínico complejo con traumatismo maxilomandibular severo. Se describe la intervención conjunta de cirugía plástica, implantología y prótesis para restaurar la estética, la fonación y la masticación mediante implantes y prótesis removible superior.

Resumen: La rehabilitación oral es clave en la recuperación funcional y psicosocial tras traumatismos maxilofaciales.

WELLS ET AL., 2022, COCHRANE REVIEW HTTPS://PUBMED.NCBI.NLM.NIH.GOV/35502787/

Tema: Prevención de fracturas con risedronato en mujeres posmenopáusicas.

Contenido: Revisión de 43 ensayos clínicos. En prevención secundaria, risedronato reduce fracturas no vertebrales y de cadera. Su efecto en fracturas vertebrales y de muñeca es incierto. No aumenta eventos adversos graves.

Resumen: Risedronato es efectivo y seguro para prevenir fracturas por fragilidad en mujeres con osteoporosis.

WERESZCZYŃSKI ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37464028/

Tema: Periodontitis y deterioro cognitivo temprano.

Contenido: Estudio en adultos mayores sanos que muestra que la periodontitis se asocia con menor “mind-wandering” y peores puntuaciones en memoria episódica, apoyando la hipótesis del déficit de recuperación espontánea como marcador precoz de Alzheimer.

Resumen: La periodontitis podría ser un indicador temprano de deterioro cognitivo asociado a Alzheimer.

WU ET AL., 2024HTTPS://PUBMED.NCBI.NLM.NIH.GOV/38511766/

Tema: Relación genética entre periodontitis y osteoporosis.

Contenido: Análisis de randomización mendeliana con datos genéticos de SNPs asociados a periodontitis y riesgo de osteoporosis. No se encontró asociación causal directa entre ambas condiciones.

Resumen: Aunque observacionalmente se vinculan, no hay evidencia genética de que la periodontitis cause osteoporosis.

YAN ET AL., 2023 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/37691939/

Tema: Relación entre periimplantitis e inflamación sistémica.

Contenido: Revisión sistemática de 11 estudios clínicos que confirma una asociación significativa entre periimplantitis y aumento de biomarcadores inflamatorios sistémicos (PCR, IL-6 y leucocitos). La magnitud de los efectos fue clínicamente relevante y estadísticamente significativa, aunque se requiere más investigación para establecer causalidad.

Resumen: La periimplantitis se asocia con inflamación sistémica elevada, similar a la periodontitis.

YOUNG ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/33679037/

Tema: Importancia de la salud oral en pacientes con prótesis articulares.

Contenido: Revisión narrativa sobre la relevancia de la salud oral en el contexto de artroplastias de cadera y rodilla. Subraya que poblaciones vulnerables (mayores, con movilidad reducida, minorías) tienen menos acceso a cuidado dental, y que el control oral puede jugar un rol en prevenir infecciones protésicas costosas y graves.

Resumen: La salud bucal es un componente esencial en el manejo perioperatorio de pacientes con

artroplastia.

YU ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/34957304/

Tema: Osteonecrosis medicamentosa y cierre de tejidos tras extracciones.

Contenido: Estudio en conejos tratados con ácido zoledrónico. Se evaluó el efecto del cierre de tejidos blandos sobre la incidencia de osteonecrosis tras extracción dental. No se hallaron diferencias significativas entre los lados suturados y no suturados. El tratamiento con bifosfonatos redujo el crecimiento óseo y aumentó la necrosis ósea.

Resumen: El cierre de tejidos blandos no previene la osteonecrosis en modelos con bifosfonatos.

YÜCEL ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40035797/

Tema: Sarcopenia, salud oral y nutrición en mayores.

Contenido: Estudio transversal en 65 ancianos que compara la salud oral, deglución y estado nutricional en función de la presencia de sarcopenia. Los que tenían sarcopenia mostraron peor salud oral, mayor riesgo de disfagia y malnutrición, y peor calidad de vida relacionada con la cavidad oral.

Resumen: La sarcopenia se asocia con malnutrición, disfagia y deterioro de la salud oral en personas mayores.

ZHANG ET AL., 2025 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/40377807/

Tema: Número de dientes y fragilidad en adultos mayores.

Contenido: Revisión sistemática y metaanálisis de 25 estudios con más de 36.000 participantes. Tener ≤20 dientes duplica el riesgo de fragilidad. El efecto es consistente entre países y diseños de estudio. Se recomienda promover salud bucal preventiva en adultos mayores como parte de políticas de envejecimiento saludable.

Resumen: La pérdida dental se asocia con mayor riesgo de fragilidad física en la vejez.

ZHOU ET AL., 2021 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/34646729/

Tema: Profilaxis antibiótica dental en pacientes con prótesis articulares.

Contenido: Documento de posición del equipo de Mayo Clinic que coordina recomendaciones entre cirujanos ortopédicos, odontólogos e infectólogos. Concluyen que la profilaxis antibiótica dental sistemática no está respaldada por evidencia en pacientes con prótesis.

Resumen: No se recomienda profilaxis antibiótica rutinaria antes de procedimientos dentales en pacientes con prótesis articulares.

ZHU ET AL., 2024 HTTPS://PUBMED.NCBI.NLM.NIH.GOV/39744374/

Tema: Prevalencia y consecuencias de la fragilidad oral en ancianos.

Contenido: Revisión sistemática y metaanálisis de 28 estudios con casi 28.000 mayores. La fragilidad oral afecta al 32% de los ancianos y se asocia con mayor riesgo de fragilidad física, malnutrición, dieta pobre y aislamiento social. Se pide un enfoque integrado para su detección y manejo.

Resumen: La fragilidad oral es frecuente y predice deterioro físico, nutricional y social en mayores.

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04

Preguntas y Respuestas

Preguntas y respuestas

1. ¿PUEDE LA PERIODONTITIS INTERFERIR EN LA RECUPERACIÓN ÓSEA TRAS UNA CIRUGÍA ORTOPÉDICA?

Sí. La periodontitis activa genera inflamación sistémica crónica (aumento de PCR, IL-6, leucocitos), que puede alterar los procesos de cicatrización ósea o afectar la integración de materiales como placas, tornillos o prótesis articulares. Esto es especialmente relevante en pacientes con comorbilidades o edad avanzada.

2. ¿QUÉ RELACIÓN EXISTE ENTRE PERIIMPLANTITIS DENTAL E INFLAMACIÓN SISTÉMICA?

Estudios recientes han demostrado que los pacientes con periimplantitis presentan niveles elevados de marcadores inflamatorios en sangre. Aunque antes solo se asociaba a la periodontitis, hoy sabemos que la periimplantitis también podría tener efectos sistémicos, y por tanto, interferir en la reparación ósea o muscular.

3. ¿EN QUÉ PACIENTES ORTOPÉDICOS HABRÍA QUE PRESTAR MÁS ATENCIÓN A SU SALUD BUCAL?

Especialmente en personas con osteoporosis, artritis inflamatoria, fracturas por fragilidad, o que van a recibir prótesis articulares o bifosfonatos. También en mayores de 70 años, donde el estado oral se asocia a riesgo de caídas, fragilidad y desnutrición.

4. ¿PODRÍA UNA INFECCIÓN ORAL LLEGAR A CAUSAR UNA INFECCIÓN EN UNA PRÓTESIS ARTICULAR?

Es raro, pero sí es posible. Hay casos documentados de infecciones protésicas tras bacteriemias derivadas de infecciones periodontales. La clave está en identificar a los pacientes de riesgo, optimizar su salud oral antes de la cirugía y evitar focos sépticos activos.

5. ¿QUÉ PAPEL JUEGAN LOS BIFOSFONATOS EN EL VÍNCULO ENTRE TRAUMATOLOGÍA Y ODONTOLOGÍA?

Los bifosfonatos son esenciales para prevenir fracturas en pacientes con osteoporosis, pero tienen un efecto adverso importante: la osteonecrosis maxilar, especialmente tras extracciones dentales o cirugía oral. Por eso, se recomienda revisar el estado periodontal antes de iniciar tratamiento.

6. ¿ES ÚTIL CERRAR EL ALVÉOLO CON SUTURA TRAS UNA EXTRACCIÓN EN PACIENTES CON BIFOSFONATOS?

Algunos estudios experimentales muestran que no siempre es suficiente. Aunque el cierre puede ayudar, lo más importante es actuar antes: reducir infecciones, estabilizar encías, y evitar procedimientos invasivos si no son urgentes.

7. ¿QUÉ PROTOCOLO SE RECOMIENDA ANTES DE COLOCAR UN IMPLANTE EN PACIENTES QUE HAN USADO BIFOSFONATOS?

Debe hacerse una evaluación periodontal completa y valorar el tipo, dosis y duración del tratamiento. En bifosfonatos orales de menos de 3 años sin otros factores de riesgo, puede procederse con precaución. En tratamientos intravenosos o más prolongados, conviene evitar implantes o consultar con el especialista.

8. ¿QUÉ IMPACTO TIENE LA PÉRDIDA DE DIENTES EN LA RECUPERACIÓN TRAS UNA FRACTURA?

La falta de dientes afecta la masticación, la ingesta proteica y la masa muscular. Pacientes edéntulos o con mala función oral tienen más riesgo de sarcopenia y recuperación más lenta tras fracturas, especialmente de cadera.

9. ¿CÓMO SE RELACIONAN LA SALUD ORAL Y LA FRAGILIDAD EN PERSONAS MAYORES?

La evidencia muestra que tener menos de 20 dientes, o disfunción masticatoria, se asocia a más caídas, desnutrición, pérdida de autonomía y deterioro funcional. Mejorar la salud oral puede ser una medida preventiva eficaz en geriatría y rehabilitación.

10. ¿QUÉ RELEVANCIA TIENE LA SALUD ORAL EN PROGRAMAS DE PREVENCIÓN DE FRACTURAS?

Muchísima. La salud oral no solo influye en la nutrición y el equilibrio físico, sino también en la adherencia a tratamientos, en la inmunidad, y en la recuperación funcional. Un enfoque interdisciplinar es clave.

11. ¿QUÉ RIESGOS CONLLEVA HACER UNA CIRUGÍA OR-

TOGNÁTICA O MAXILOFACIAL EN PACIENTES CON ENFERMEDAD PERIODONTAL?

Existe mayor riesgo de infección postquirúrgica, osteomielitis, mala consolidación ósea o fracaso de injertos. Antes de cualquier cirugía de mandíbula o reconstrucción, es imprescindible controlar la periodontitis activa.

12. ¿QUÉ AVANCES EXISTEN EN REHABILITACIÓN DE PACIENTES CON TRAUMATISMO FACIAL SEVERO?

Los nuevos sistemas de implantes osteointegrados personalizados, con diseño CAD/CAM, permiten rehabilitar incluso maxilares muy dañados. Esto exige una mucosa sana y ausencia de infección crónica, lo que subraya la importancia del control periodontal.

13. ¿QUÉ PAPEL JUEGA LA MICROBIOTA ORAL EN INFECCIONES OSTEOARTICULARES?

Se han identificado bacterias típicamente orales en infecciones articulares, especialmente en pacientes con periodontitis severa. La disbiosis oral podría actuar como reservorio de bacterias que alcanzan huesos u otras zonas protésicas vía hematógena.

14. ¿TIENE SENTIDO HACER REVISIONES DENTALES EN PACIENTES QUE VAN A COLOCARSE UNA PRÓTESIS DE CADERA O RODILLA?

Sí. Aunque la incidencia real de infección protésica por origen oral es baja, los beneficios de detectar y tratar infecciones bucales activas son muy superiores al coste. La valoración dental prequirúrgica debería ser parte del protocolo.

15. ¿EXISTE UN PROTOCOLO DE DERIVACIÓN DESDE TRAUMATOLOGÍA HACIA ODONTOLOGÍA?

No en todos los hospitales, pero debería. El trabajo conjunto en pacientes frágiles, osteoporóticos o candidatos a prótesis puede evitar complicaciones mayores y mejorar el pronóstico funcional.

16. ¿QUÉ MENSAJE DARÍA A SUS COLEGAS TRAUMATÓLOGOS SOBRE LA SALUD ORAL?

Que no es un tema menor. Las infecciones orales, la pérdida de dientes o la inflamación crónica pueden condicionar nuestras cirugías. Coordinarse con odontología puede reducir complicaciones y mejorar la calidad de vida de los pacientes.

17. ¿QUÉ HÁBITOS BÁSICOS RECOMENDARÍA REVISAR EN PACIENTES CON RIESGO ORTOPÉDICO?

Además del cepillado, es clave vigilar el sangrado de encías, la movilidad de dientes, el uso de prótesis mal ajustadas, o las infecciones recurrentes. Pequeños signos pueden anticipar complicaciones mayores.

18. ¿HA TENIDO ALGÚN CASO DONDE LA SALUD ORAL HAYA CONDICIONADO UNA CIRUGÍA TRAUMATOLÓGICA?

Sí, hemos tenido que posponer cirugías por infecciones dentales no tratadas. También pacientes que desarrollaron infecciones tras prótesis. Estas experiencias nos han hecho más proactivos en colaborar con odontología.

19. ¿QUÉ PUEDE HACER EL PACIENTE PARA PROTEGERSE?

Acudir regularmente al dentista, informar de su medicación y de cirugías previstas, mantener una buena higiene y no subestimar el sangrado o el dolor dental. La salud oral es parte de la salud general.

20. ¿CÓMO IMAGINA LA COLABORACIÓN IDEAL ENTRE TRAUMATOLOGÍA Y ODONTOLOGÍA?

Con protocolos compartidos, derivaciones fluidas, y sobre todo, con la idea de que cuidar la boca también es cuidar el hueso. La salud es un todo, y el paciente gana cuando los equipos se comunican.

21. ¿QUÉ ES LA OSTEONECROSIS MAXILAR Y CÓMO SE EVITA?

Es la muerte del hueso de la mandíbula tras una herida o extracción, sobre todo en pacientes que to-

man bifosfonatos o denosumab. Se evita con prevención y evitando tratamientos invasivos innecesarios.

22. ¿POR QUÉ IMPORTA LA SALUD ORAL EN PACIENTES CON FRACTURA DE CADERA?

Porque una boca enferma puede dificultar la alimentación, retrasar la recuperación y aumentar el riesgo de complicaciones sistémicas.

23. ¿ES NECESARIO DAR ANTIBIÓTICO A TODOS LOS PACIENTES CON PRÓTESIS SI VAN AL DENTISTA?

No. La profilaxis antibiótica solo está indicada en casos de alto riesgo. Lo importante es tratar las infecciones bucales antes de que aparezcan problemas.

24. ¿QUÉ IMPORTANCIA TIENE LA MASTICACIÓN EN ANCIANOS?

La masticación activa músculos, mejora la digestión y reduce el riesgo de sarcopenia. La pérdida de dientes no es solo estética: es funcional.

25. ¿QUÉ DEBERÍA SABER UN TRAUMATÓLOGO JOVEN SOBRE LA BOCA?

Que no es un territorio aparte. La boca influye en la inmunidad, en la inflamación, y en muchas de las cirugías que realizamos. Aprender a mirarla es ganar en seguridad clínica.

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