ORAL LICHEN PLANUS: A CASE REPORT OF A 17-YEAR-OLD GIRL

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Aim: describe the clinical aspect and differential diagnosis of an oral lichen planus.
Methods: lichen planus is an inflammatory skin disorder with multifactorial etiology, mainly autoimmune, which presents itself with pathognomonic lesions. Other than skin, this disorder may involve mucous membranes, especially the oral one, causing potential discomfort in patients. Although this condition mostly affects patients during their adulthood, there is no lack of reported cases among child and adolescent patients. A 17-year-old healthy Italian girl was referred to the IRCCS Burlo Garofolo Pediatric Dental Clinic by her private orthodontist for the appearance of oral whitish lesions causing a burning sensation; she was wearing an orthodontic retainer at night. Bilateral and reticular lesions on the buccal mucosae, trigones and tongue ventral surface were detected, in association with recurrent nail wrinkle lesions on both thumbs. A punch biopsy of the right buccal mucosa was performed.
Results: the histopathological analysis was compatible with a lichen lesion. Lesions did not present any change at the subsequent follow-up.
Traumatic lesion; lupus erythematosus; amalgama chronical reaction; drugs lichenoid reaction.
Conclusions: this case highlights the importance of a detailed knowledge of the pathognomonic traits of oral lichen planus, leading to an early diagnosis of this condition that may occur in child or adolescent patients.

GREEN TEETH IN PEDIATRIC HEPATOBILIARY DISEASES: A CASE REPORT AND LITERATURE REVIEW

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Aim: to describe a pediatric case report of green teeth and to review the literature.
Methods: an 11-year-old child with green mixed dentition (except premolars) was referred to the Pediatric Dentistry Unit of the University of Pisa. After a careful anamnesis and a clinical evaluation, the patient was suggested to periodic dental check-ups and to begin an orthodontic treatment. By virtue of this, a review of Literature was conducted using the following keywords: “hepatobiliary diseases”, “oral manifestations”, “hyperbilirubinemia”, “green teeth”.
Results: the diagnosis was green pigmentation due to Hyperbilirubinemia (HB). This intrinsic discoloration is due to Bilirubin (BL) incorporation in dental tissues during the odontogenesis, and the localisation and degree are determined by the time of HB onset and the serum BL level. BL disappears from soft tissue after remission, but in hard tissues it’s permanently trapped. Primary dentition is the most affected, but also permanent teeth can be involved when biliary atresia occurs. The patient underwent a liver transplant at the age of 2 years, so the teeth that mineralized after this age were not green. Hypoproteinaemia, coagulopathy, malnutrition or immunodeficiencies associated with liver failure predispose also to mucosal lesions and dental defects (opacities and hypoplasia).
Conclusions: approaching green discoloration means performing a correct differential diagnosis and organizing a multidisciplinary path. The pedodontist’s goal is restoring child's oral health also to allow the adult patient to face any cosmetic treatments essential for self-esteem and social acceptance.

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MANAGEMENT OF ENAMEL DEFECTS WITH MICROINVASIVE INFILTRATION TECHNIQUE

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Aim: to evaluate the clinical efficacy of the microinvasive technique with resin infiltration (ICON, DMG, Hamburg, Germany) in the treatment of white enamel defects associated with amelogenesis imperfecta in celiac subjects, analyzing both the short-term aesthetic results and their stability over time.

Methods: a celiac patient with white enamel defects due to amelogenesis imperfecta was treated with a microinvasive technique using ICON resin infiltration. After an oral hygiene session, dental elements 1.3, 1.2, 1.1, 2.1, 2.2, 2.3 were treated with ICON Vestibular Kit (DMG, Hamburg, Germany) according to the manufacturer's instructions. Follow-up sessions were scheduled at 24 and 36 months to verify the stability of the obtained aesthetic result. The "Fédération Dentaire Internationale" (FDI) color matching criteria were used for color evaluation.

Results: by calculating the difference between the pre- and post-treatment scores using the color matching criteria (FDI), the post-treatment aesthetic evaluation was found to be "clinically excellent". The 24- and 36-months follow-up confirmed the stability of the aesthetic results obtained in a single session.

Conclusions: the resin infiltration technique with ICON appears to represent a valid alternative to traditional techniques for the minimally invasive treatment of enamel opacities associated with amelogenesis imperfecta, both because of the aesthetic result obtained in a single session and the stability demonstrated in the case presented 36 months after treatment.

ORTHODONTIC-PROSTHETIC REHABILITATION OF THE UPPER FRONT TEETH IN A GROWING PATIENT: CASE REPORT

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Aim: the present study aims to analyze the effectiveness of a different clinical approach for orthodontic-prosthetic rehabilitation in pediatric patients ≤6 years old with a diagnosis of Severe Early Childhood Caries (S-ECC).

Methods: a 4-year-old patient came to our observation with diffuse carious pathology on the dental elements of the upper arch. Conservative therapies of elements 53 and 63, pulpectomy of elements 54 and 64 were performed. Severe impairment of the elements of the upper frontal group necessitated extractive therapies of 52-51-61-62. Impressions were taken with elastomeric material by designing a prosthetic construct in the laboratory with cobalt-chromium and molybdenum stellite alloys using lost-wax casting technique and preformed resin elements fixed using cold-curable resin. The prosthetic device consisting of a palatal bar soldered by crowns onto the first upper deciduous molars was cemented.

Results: the use of the present device demonstrated excellent aesthetics, excellent stability, and excellent patient comfort due to the absence of the buccal flange in addition to minimal wire extension due to the use of deciduous first molars as anchorage and the presence of crowns as support for elements undergoing endodontic therapy.

Conclusions: such a device represents an excellent management modality for orthodontic-prosthetic rehabilitation in patients ≤6 years of age diagnosed with S-ECC, avoiding malocclusions, alterations in lingual posture and swallowing, resolving emotional, psychological and aesthetic difficulties even more fundamental in a growing patient.

USE OF DIODE LASER FOR THE TREATMENT OF DENTINAL HYPERSENSITIVITY CAUSED BY MIH

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Aim: Molar Incisor Hypomineralization (MIH) is a defect in enamel mineralization that results in hypomineralization affecting permanent molars and incisors. The scientific literature acknowledges the role of laser therapy in pain management for pediatric patients with MIH. Hypersensitivity is a serious issue for patients with MIH, as current treatment aims at both remineralizing and desensitizing the affected teeth. In our study, we focused on the treatment of dental hypersensitivity in patients with severe MIH using laser therapy as a desensitizing therapeutic solution.

Methods: the clinical case presented involves an 8-year-old girl with severe MIH, experiencing a marked dentinal hypersensitivity affecting the first permanent molars and incisors. To reduce this symptom a diode laser was used. Before and at the end of each session the degree of pain elicited by cold air stimulation was assessed by using the Wong-Baker pain scale. After throughly drying the tooth surfaces, a fluoride-based solution was applied, followed by laser activation for 30 seconds in two consecutive cycles per tooth.

Results: a total of three sessions were performed, each spaced three months apart. An improvement in symptoms was observed already after the first session and the final result showed a reduction in pain levels from an initial range of 10-8 during the first session to a range of 4-2 in the last one.

Conclusions: as reported in scientific literature, our results have demonstrated that laser treatment can be a valid therapeutic solution aimed at reducing the degree of hypersensitivity in patients with severe MIH and dentinal substance loss.

ORAL HEALTH IN CLERICUZIO SYNDROME: CLINICAL CASE AND MANAGEMENT

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Aim: Clericuzio Syndrome, also known as Poikiloderma with Neutropenia (PN), is a rare autosomal recessive disorder caused by mutations in the USB1 gene. It manifests with severe neutropenia, poikiloderma, and various systemic complications, including oro-facial abnormalities and dental issues. This study aims to describe the oral characteristics and treatment approach in a patient with PN.

Methods: a 12-year-old female patient with a confirmed diagnosis of PN was evaluated at the Parma University Dental Unit. Clinical examination, radiographic imaging, and preventive dental treatments were performed. Strategies and long-term oral care recommendations were also discussed.

Results: the patient presented multiple dental anomalies, including oligodontia (16 missing teeth), delayed eruption and poor oral hygiene. A comprehensive treatment plan was implemented, including dental extractions, restorative care, and professional oral hygiene sessions every three months. Despite initial improvements, compliance with home care and follow-ups was suboptimal. Periodic evaluations revealed persistent carious lesions, gingivitis, and additional oral complications, necessitating ongoing interventions.

Conclusions: patients with Clericuzio Syndrome require a multidisciplinary approach to manage both systemic and oral health challenges. Early dental intervention and tailored preventive strategies are crucial in preventing severe dental complications and ensuring a better quality of life. Further studies are needed to establish standardized guidelines for the dental management of PN patients.

DENTAL MANAGEMENT OF SEVERE SELF-INJURIOUS BEHAVIORS IN PATIENTS WITH TOURETTE SYNDROME: A SYSTEMATIC REVIEW AND A RARE CASE REPORT

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Aim: we reported a case of malignant Tourette Syndrome (TS) who exhibited severe oral Self-Injurious Behavior (SIB), resulting in jaw osteonecrosis. We researched in literature the management of oral SIB in TS patients, through a systematic review.

Methods:

- a 16-year-old boy was referred to our department following recurrent hospitalizations for psychomotor agitation and suspected TS. In 2 years, the patient self-extracted 24 teeth, amputated half of his tongue, and developed extensive traumatic ulcers, culminating in mandibular bone exposure and osteonecrosis. Despite diagnostic efforts (CT, MRI) and proposed protective measures, the family frequently refused interventions.
- A literature review was conducted, with multiple database research.

Results:

1. antipsychotic medication and the application of protective splints initially reduced SIB and promoted partial healing of oral lesions. However, the deterioration of the splint due to parafunctional activity further hindered the management, leading to surgery treatment of oral lesions under general anesthesia.
2. Eleven studies were included. Literature review revealed no prior cases with comparable oral mutilation, though SIB is documented in 15-30% of TS patients, usually less severe.

Conclusions: this case highlights the extreme severity of malignant TS and its devastating oral implications. A multidisciplinary approach, integrating psychiatric, dental, and behavioral therapies, is crucial to moderate irreversible damage. While splints and psychotropics may aid symptom management, long-term strategies remain challenging.

USE OF BIOCERAMIC SEALERS IN THE ENDODONTIC TREATMENT OF PRIMARY TOOTH: A CLINICAL INVESTIGATION

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Aim: primary teeth play a crucial role in maintaining dental arch integrity, craniofacial development, speech, and mastication. This study aimed to evaluate the outcome of vital pulp therapy in primary teeth with irreversible pulpitis using the Well-Root PT (WRPT) bioceramic sealer, based on clinical and radiographic assessments.

Methods: three primary molars diagnosed with irreversible pulpitis in children aged 6 to 10 years underwent pulpotomy using a bioceramic sealer as the dressing material. Clinical evaluations were conducted every three months over a 12-month period. Radiographic assessments were performed at six and twelve months.

Results: three children (mean age ±8 years) completed the study. All participants reported complete pain relief within seven days post-treatment. No pain or clinical symptoms were reported at subsequent follow-up visits. Clinical and radiographic evaluations showed no significant discrepancies in treatment success.

Conclusions: pulpotomy using a biocompatible material such as Well-Root PT appears to be an effective treatment option for primary molars with symptoms of irreversible pulpitis. Its advantages - such as fast setting time and ease of handling - make it a promising alternative to root canal treatment. Although this case series suggests favorable outcomes, further well-designed clinical trials with larger sample sizes and extended follow-up periods are needed to validate these findings.

OROFACIAL MANIFESTATIONS OF MOWAT-WILSON SYNDROME: A CASE SERIES

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Aim: Mowat-Wilson Syndrome (MWS) is a rare genetic disorder caused by mutations in the ZEB2 gene, with an incidence of 1 in 50,000 live births. It is characterized by developmental delays, distinctive facial features, and congenital anomalies. The aim of the study is to describe the orofacial manifestations of three patients with MWS.

Methods: following parental consent, two male and one female patients (aged 9, 20, and 14 years) with MWS underwent dental examinations, panoramic X-rays, cephalometric analysis and facial scanning. Medical and dental histories were obtained through questionnaires.

Results: all patients exhibited psychomotor retardation and epilepsy. They were also mouth breathers. Dental examinations revealed caries in the permanent dentition of one patient, while the other two were caries-free. One patient had a high dental plaque index, and another exhibited developmental enamel defects. Orthodontic assessment showed all three patients had a convex facial profile. Two had a dolichocephalic face with an open bite and a narrow palate, while the third had a brachycephalic face with a V-shaped palate. Two patients presented with Class II Angle malocclusion, whereas the third had Class III. Facial scanning revealed shared features, including a broad forehead, hypertelorism, a large nose and a prominent chin.

Conclusions: MWS presents a range of orofacial manifestations, highlighting the need for individualized dental and orthodontic assessments. Early recognition of these features may facilitate timely interventions to improve oral health and overall quality of life.

KNOWLEDGE, ATTITUDE AND PERCEPTION AMONG PAEDIATRICIANS TOWARDS MOLAR INCISOR HYPOMINERALIZATION (MIH) DURING DEVELOPMENTAL AGE: AN ASSESSMENT QUESTIONNAIRE

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Aim: Molar Incisor Hypomineralization (MIH) is a systemic enamel defect involving first permanent molars and sometimes incisors, affecting dental structure and children's quality of life. This study aimed to evaluate Italian paediatricians' knowledge, perception and attitude towards MIH, with a focus on early diagnosis.

Methods: a cross-sectional study was conducted at the Paediatric Dentistry Unit of the Federico II University Hospital in Naples, Italy. A validated, self-administered questionnaire was distributed to 185 paediatricians. Items explored knowledge, perception and clinical behavior regarding MIH. Data was analyzed using Kruskal-Wallis, Mann-Whitney, and Pearson's chi-square tests.

Results: of the knowledge-based responses, 69.8% were correct, yet only 15.7% of paediatricians felt confident diagnosing MIH. Awareness varied by age and experience; older paediatricians and those in private practice showed better understanding. Over half (56.2%) recognized the importance of their role in early detection. Most participants supported referring patients to dental care and showed interest in the topic.

Conclusions: the study highlights a general lack of knowledge about MIH among paediatricians. Targeted training to enhance diagnostic skills and collaboration with paediatric dentists is recommended to facilitate early detection and prevention. Expanding the sample size and distributing the questionnaire internationally could support global comparisons.

SALIVARY AND ORAL CLINICAL PARAMETERS IN PEDIATRIC PATIENTS AFFECTED BY JUVENILE IDIOPATHIC ARTHRITIS

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Aim: the purpose of our study was to evaluate salivary parameters in patients with Juvenile Idiopathic Arthritis (JIA) and their progression over time.

Methods: subjects were recruited from the Pediatric Dentistry Section of the Dental School in Turin. The inclusion criteria were a diagnosis of JIA based on ILAR criteria and an age range of 4 to 15 years. Data were collected using a standardized, self-designed form, which included information on JIA type, affected joints, current and past pharmacological treatments, and family history of autoimmune diseases. The analyzed parameters included baseline and stimulated salivary flow, pH, buffering capacity, plaque index, gingival index, and DMFT.

Results: the study included 48 subjects with JIA. The average baseline salivary flow over 3 minutes was 2.6±1.5 ml, while the stimulated flow over 5 minutes averaged 8±1.8 ml. The mean pH was 7.0±0.3, with a buffering capacity of 10.2±2.0. Clinical indices recorded mean values of 0.4±0.4 for the gingival index, 0.6±0.6 for the plaque index, 0.5±1.5 for dmft and DMFT value of 0.8±1.5.

Conclusions: our study did not show any statistically significant differences in the evaluated parameters between subjects with different forms of JIA.

THE IMPACT OF PARENTS' EDUCATION ON CHILDREN'S ORAL HEALTH

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Aim: oral diseases exist in every country but their impact on the quality of individual lives can be profound. It is known that parental factors like education and employment are associated with children's oral health. To examine the association of parents' educational level and employment status with the oral health of children and their impact on family.

Methods: we conducted a study on healthy subjects age 0-16 and their parents who have been attending the Dental Clinic of the University of Campania L. Vanvitelli. The parents completed the Italian version of the Early Childhood Oral Health Impact Scale (I-ECOHIS); linear regression models adjusted for age and sex tested for associations between ECOHIS scores and parental employment or education level. A P <0.05 was considered statistically significant.

Results: the scoring analysis showed significant correlation between high I-ECOHIS total score (coeff. 004; CI 95%: 1.531-6.554; p = 0.002), and where father does not work. In the same way, the high level of unemployment of the father was connected with a increased I-ECOHIS children section score (coeff. 3.279; CI 95%: 1.290-5.268; p = 0.002). By contrast, the father's educational level was significantly associated with lower total ECOHIS score (coeff. -1.388; CI 95%: -2.562 to -0.214; p = 0.021), and the mother's educational level was inversely associated with the ECOHIS children section score (coeff. -0.972; CI 95%: -1.909 to -0.034; p = 0.042).

Conclusions: the results also point toward the adverse impact of father's unemployment as well as lower parent education on children's oral health.

PRE-FORMED CROWNS AND PEDIATRIC DENTISTRY: A SYSTEMATIC REVIEW OF DIFFERENT TECHNIQUES OF RESTORATIONS

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Aim: the preservation of primary dentition is crucial not only for aesthetic reasons but also to restore a proper masticatory function, stabilize the occlusion, and prevent potential complications and malocclusions in the permanent dentition. The restoration of primary teeth may require the use of preformed crowns rather than a simple composite filling. At the clinician's discretion, the placement of preformed crowns can be carried out using traditional techniques or the innovative Hall technique.

Methods: employing PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) guidelines, a search of PubMed, Scopus and Web of Science from January 2013 to October 2023 was conducted. The included studies, encompassing randomized clinical trials and retrospective studies, explored the relationship between HT (Hall Technique) and direct and indirect restorations in pediatric dentistry.

Results: after an initial database search yielding 1216 articles, 12 records were selected for qualitative analysis. Quality assessment was performed using the ROBINS (Risk of Bias in Non-randomized Studies) tool, revealing variable risk of bias across studies. Searching online databases was performed to find papers that matched the topic. Overall results indicate that the Hall technique is comparable or superior to conventional techniques regarding clinical success, with some evidence suggesting long-term economic benefits.

Conclusions: the Hall technique represents a promising, biologically oriented option for the management of carious lesions in deciduous molars.

Further prospective, randomized research is needed to consolidate this evidence and fully understand the clinical and economic implications of the Hall technique compared with conventional techniques.

ETIOLOGY AND MANAGEMENT OF FAILURE OF ERUPTION OF THE FIRST OR SECOND PERMANENT MOLAR: A SYSTEMATIC REVIEW

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Aim: Primary Failure of Eruption (PFE) is a rarely known condition where a tooth fails to emerge through the gums at the expected time, despite the presence of a clear eruption pathway. This condition typically affects permanent teeth, especially first and second molars. The aim of this review is to analyse the causes of PFE of molars and illustrate therapeutic options.

Methods: the research was performed using PubMed. Some of the key words used are: "impacted first molar", "treatment failure of eruption" and "eruption disturbances of permanent molars".

Results: failure of eruption has an estimated prevalence of 0.01-0.06%. The causes can be ankylosis, mechanical failure of eruption or PFE. Diagnosis of PFE is extremely important to avoid iatrogenic damage. Some typical features of PFE are the total or partial inclusion of the tooth despite its complete root formation and the hook-like appearance of the apexes (due to the root's impaction in the cortical bone). In addition, a genetic component has been found, with patients having a family history of PTH1R mutation. PFE-affected teeth have little to no response to orthodontic treatment, with a tendency to encounter ankylosis or intrusion of adjacent teeth, leaving extraction as the preferable solution.

Conclusions: even though PFE is an uncommon and mostly asymptomatic condition, an early diagnosis is crucial to reduce the consequences of the failure of eruption of permanent molars. Spontaneous eruption is very rare and when roots are completely formed, the chances of successful treatment decrease.

PERIODONTAL STATUS AND MICROBIAL PROFILE (BACTERIA, VIRUSES, AND FUNGI) IN SYSTEMICALLY COMPROMISED PEDIATRIC SUBJECTS: A SYSTEMATIC REVIEW

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Aim: while studies in adults have shown viral and fungal involvement in periodontal diseases, evidence in systemically compromised children is still limited. This systematic review assessed periodontal status and microbial (bacterial, viral, and fungal) profile in systemically compromised pediatric (≤18 years) patients with gingivitis and/or periodontitis, compared to periodontally healthy individuals.

Methods: a systematic review was conducted following PRISMA guidelines, with the protocol registered on PROSPERO (CRD42024597695).

Results: eight studies were descriptively analyzed and assessed using the ROBINS-I and JBI tools. CMV was detected in 19.40% of necrotizing gingivitis cases. EBV was identified in 20.69% of necrotizing gingivitis cases and 10.34% of periodontitis cases. HSV, while present in periodontitis, was more frequently linked to gingivitis and necrotizing gingivitis. Key bacterial species associated with periodontitis included *Porphyromonas gingivalis*, *Tannerella forsythia*, *Fusobacterium*, and *Campylobacter* species. Additionally, *Candida albicans* - though less frequently investigated - was found in some periodontitis cases, suggesting a potential fungal role in disease development. Even if bacterial and fungal profile were not analyzed, a low viral presence was found in systemically compromised pediatric subjects with a healthy periodontium, suggesting a balanced microbioma.

Conclusions: the interaction between viruses, bacteria, and fungi may be a significant factor in the progression of pediatric periodontal diseases.

EXPLORING THE CURRENT LANDSCAPE OF DENTAL MOBILE APPLICATIONS FOR CHILDREN WITH SPECIAL HEALTHCARE NEEDS AND A PROPOSAL OF A NEW CUSTOMIZABLE APP TO ENHANCE ORAL HEALTH AWARENESS AND COMPLIANCE

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Aim: Children with Special Health Care Needs (SHCN) face various challenges - physical, developmental, sensory, behavioral, or cognitive - impacting oral health. This highlights the need for specialized and accessible dental care. Mobile health (m-health) apps may address existing gaps in oral health education and improve access to care. This review aimed to evaluate the current landscape of dental m-health apps for children with SHCN, examining their perspectives, along with parents/caregivers and dentists, on their use and contributions to oral health. Based on the findings, a conceptual framework for a tailored dental m-health app was proposed to enhance interactions among children, caregivers, dentists, and oral care.

Methods: a literature search was performed in PubMed/MEDLINE, Scopus, and Web of Science to identify relevant studies on the use of m-health apps in pediatric dentistry targeted at SHCN.

Results: M-health apps helped manage anxiety, behavioral issues, and access to care, favoring a more positive and cooperative dental experience for SHCN children. The apps were well-received by parents/caregivers, improving oral hygiene practices and oral care awareness and potentially reducing oral health disparities faced by children with SHCN and their families. However, existing apps are limited and may not accommodate the diverse sensory needs of SHCN children.

Conclusions: developing a tailored dental m-health app adapting to the unique SHCN children's characteristics could bolster oral health awareness and compliance among children, parents/caregivers, and dentists.

PERCENTAGE OF NITROUS OXIDE AND ADVERSE EFFECTS IN PEDIATRIC DENTISTRY: A LITERATURE REVIEW

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Aim: nitrous oxide (N_2O) is widely used as a sedative agent in pediatric dentistry due to its anxiolytic and analgesic properties. This literature review aims to describe the current evidence on the efficacy and safety of nitrous oxide in pediatric dentistry.

Methods: a literature review was performed by two independent researchers on PubMed up to March 2025.

Key articles were selected for in-depth analysis, focusing on patient outcomes, the effectiveness of N_2O in reducing dental anxiety, and its reported adverse effects.

Results: the initial search yielded 4,347 titles. After screening, 20 articles published between were included (9 RCTs, 10 cohort studies, and 1 retrospective study). The included studies reported concentration of N_2O to be between 20% and 70%; with 50% being the most used. Among 2,097 children aged 0-17 years treated with N_2O, over 96.6% experienced no adverse effects, in the remaining group nausea and headache were the most common side effects reported. Major side effects, such as oxygen desaturation <93% were associated only with 70% N_2O concentration in 22% of patients.

Conclusions: N_2O is a generally safe and effective sedative agent in pediatric dentistry. Most common concentration used is 50% with minimal adverse effects reported. However, higher concentrations (70%) may be associated with rare but significant events such as oxygen desaturation. These findings highlight the importance of careful dosage control and patient monitoring during administration.

INDICATIONS FOR SURGICAL TREATMENT OF ANKYLOGLOSSIA: A LITERATURE REVIEW

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Aim: ankyloglossia is an alteration in tongue morphology. Treatment is primarily surgical, combined with myofunctional exercises before and after the procedure. Surgical options include frenotomy, frenectomy, and frenuloplasty. This review aims to establish guidelines for assessing the necessity of surgical intervention.

Methods: a literature review was conducted on articles published up to March 2025 regarding surgical indications for ankyloglossia, using the PubMed and Scopus databases. Only time filters were applied.

Results: lingual frenulum evaluation should be part of routine oral examinations. However, no universal diagnostic tool exists to objectively identify patients who would benefit from surgery. Various classifications of ankyloglossia are based on anatomical and functional criteria, but they are not directly linked to surgical necessity.

In 2023, a method of analysis was proposed that objectively determines when the procedure is recommended, when it can be performed, and when it is necessary. This approach reduces the risk of medical-legal sequelae. It is based on a physical examination and an anatomical, functional, and clinical evaluation. The scores from these assessments are compared with a table outlining the recommendation classes for frenotomy based on CES guidelines.

Conclusions: current evidence on the application of a standardized method for the treatment of ankyloglossia is limited; therefore, well-designed studies are needed to clinically validate the method proposed by the authors.

TEMPOROMANDIBULAR DISORDERS IN CHILDREN AND ADOLESCENTS EVALUATED WITH DC-TMD

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Aim: the incidence and prevalence of Temporomandibular Disorders (TMDs) in children and adolescents remain poorly defined, largely due to underdiagnosis as well as lack of a standardized definition during childhood years. Moreover, while sex differences in the prevalence and clinical presentation of TMD are well-documented in adults, less attention has been given to younger populations. To evaluate the prevalence of Temporomandibular Disorders (TMD) by using Diagnostic Criteria for TMDs (DC/TMD), in 8-19-year-olds, and assess whether there are differences related by sex.

Methods: we conducted a systematic review of the literature through a search on PubMed, Web of Science and Lilacs until November 30th, 2022, including studies about children and adolescents diagnosed with TMDs.

Results: three studies involving 1,914 subjects (1,093 females and 821 males). 736 subjects (38.4%) received a diagnosis of Temporomandibular Dysfunction (TMD). TMD was present in 489 (44.7%) compared with 247 males (30%). Meta-analysis of studies group evidence that the prevalence of TMD is significantly high in females vs. males (RR 2.10; 95% CI: 1.21-3.65).

Conclusions: TMD and muscle pain are found in 20% to 60% of the pediatric population, with a higher prevalence in girls than in boys. More evidence is needed to explanate the difference between children and adolescents.

CLINICAL ORAL MANIFESTATIONS AND MICROBIOTA CHANGES IN AUTISM SPECTRUM DISORDER

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Aim: Autism Spectrum Disorder (ASD) is a neurodevelopmental condition often linked to sensory hypersensitivity, self-injurious behaviours, and selective eating - all of which can impact oral hygiene and lead to mucosal or dental trauma. Increasing evidence suggests a connection between ASD and imbalances in both gut and oral microbiota, potentially contributing to behavioural and neurological symptoms through neuroinflammatory and metabolic pathways. This review investigated the oral manifestations and microbiota changes in ASD reported in the literature.

Methods: the review included human studies from PubMed and Scopus, selected for methodological quality and relevance, searching for papers reporting the connections among microbiota, oral health, and ASD.

Results: findings highlight that individuals with ASD face unique oral health impoverishment mainly related to self-injuries, selective eating, and increased sensory sensitivity. Furthermore, ASD subjects exhibited oral and gut dysbiosis, which impacted behaviour through the gut-brain axis.

Conclusions: the problem analysis highlighted the importance of paediatric dentists in preventing and managing oral disorders. Other than conventional dental treatments, interventions targeting microbiota balance, including probiotics and sensory-based therapies, may ameliorate oral health and overall quality of life. Further research is needed to clarify microbiota-host interactions in ASD and their therapeutic implications.

XYLITOL *VS* MALTITOL CHEWING GUMS: COMPARATIVE EFFECTS ON PLAQUE ACCUMULATION AND SALIVARY PH MODULATION IN PEDIATRIC PATIENTS

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Aim: this clinical study aimed to evaluate the effects of two different sugar-free chewing gums on bacterial plaque reduction and salivary pH modulation in pediatric patients.

Methods: a total of 100 children aged between 7 and 14 years were enrolled in the study. The Plaque Control Record Index (PCR) was assessed in all participants using a plaque-disclosing agent, and salivary pH was measured with a litmus test. The subjects were randomly assigned into two groups: 50 children chewed a xylitol-containing gum, while the remaining 50 chewed a maltitol-containing gum for five minutes. PCR and salivary pH were reassessed immediately after chewing.

Results: both chewing gums significantly reduced bacterial plaque levels on dental surfaces ($p < 0.001$), indicating a statistically significant difference between pre- and post-treatment values. Salivary pH increased in both groups, suggesting a buffering effect associated with gum chewing. While the maltitol gum also reduced plaque accumulation, it showed greater variability in efficacy compared to the xylitol gum. No statistically significant differences were observed between the two gums in terms of salivary pH modulation.

Conclusions: the findings highlight the beneficial effects of sugar-free chewing gums in reducing bacterial plaque and increasing salivary pH. These effects appear to be independent of the specific type of gum used, supporting their potential role as an adjunctive measure in oral hygiene maintenance.

FOOD, DENTAL CARE AND HABITS: THE GAP BETWEEN PARENTS AND CHILDREN

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Aim: oral health in pediatric patients is influenced by nutritional awareness, oral hygiene, and dietary habits. This study aims to explore the gap between parents' and children's perceptions using a questionnaire combined with clinical evaluation (plaque index, DMFT, and CRA) to enhance preventive strategies.

Methods: a questionnaire based on a literature review was administered to 40 parent-child pairs (children aged 6-12) attending the Pediatric Dentistry Unit at UOC G. Martino Hospital in Messina. The questionnaire was divided into three sections (demographics, parent, and child) and focused on diet, oral hygiene, and oral health awareness. Each question offered four multiple-choice answers (A-D), each corresponding to a specific behavioral category, ranging from A (optimal behavior and awareness) to D (poor behavior and awareness). Participants were assigned a final category based on the most frequent response. The awareness levels of parents and children were then compared. Clinical examinations - including plaque index, DMFT, and CRA - were carried out to support the questionnaire data. The data was then analyzed through Excel.

Results: among the 40 pairs, discrepancies between parents' and children's responses were observed in 67.5% of cases. Notably, in 44% of these, children demonstrated greater awareness of their own oral health habits.

Conclusions: the combined use of anamnesis tools and CRA enables early and accurate profiling of caries risk, reinforcing the need for synergistic educational interventions in both school and family settings.

AN INSIGHT INTO MIH-AFFECTED TEETH: PREVALENCE AND STRUCTURAL PROFILE

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Aim: Molar Incisor Hypomineralization (MIH) represents a clinical challenge requiring ongoing attention from clinicians and researchers. This study aimed to assess the prevalence of MIH among patients treated at the Pediatric Dentistry Department of the Dental Clinic of the University and to investigate the structural characteristics of MIH-affected teeth through *in vitro* analysis.

Methods: medical records of patients aged 6-18 were reviewed to determine MIH prevalence. Data collected included sex, year and place of birth. MIH-affected teeth specimens were observed under Scanning Electron Microscope (SEM) for morphological analyses. Additional specimens underwent fluorescence in situ zymography to evaluate the endogenous enzymatic activity.

Results: of 1569 records examined, 10% (N = 158) were diagnosed with MIH. A slight male predominance was observed (56%). Except for 2 patients born in 2001 and 2002, the majority were born between 2006 and 2018, with a diagnostic peak between 2012 and 2015. Most patients diagnosed in 2012 were born in Bologna. An increasing number of diagnoses was observed over the years, with the highest incidence recorded in 2022. Patients originated from various Italian provinces, with 4 born abroad. SEM revealed disorganized enamel prisms in MIH-affected specimens, and zymography showed increased enzymatic activity compared to sound teeth.

Conclusions: a rising trend in MIH diagnoses was noted, likely reflecting increased awareness and diagnostic capability. The structural alterations identified highlight the need for tailored restorative approaches for MIH-affected teeth.

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USE OF A DUAL-CURED RESIN-MODIFIED CALCIUM SILICATE CEMENT IN PULPOTOMIES OF PRIMARY TEETH: PRELIMINARY RESULTS FROM A 12-MONTH FOLLOW-UP STUDY

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Aim: main: to evaluate the clinical and radiographic success rate of a dual-cured resin-modified calcium silicate cement in pulpotomies of primary molars at 12-month Follow-Up (FU). Secondary: I) to assess success rates at 1, 3, and 6-month FU; II) to investigate whether the restoration site (occlusal or interproximal) influences the success rate.

Methods: asymptomatic decayed primary molars, isolable with rubber dam, and with roots formed for at least 2/3 were included. After performing pulpotomies, a thin layer of TheraCal PT® was applied over the pulp stumps and polymerized for 40s. Teeth were evaluated at 1, 3, 6, and 12-month FU. At each FU, the presence/absence of the following criteria was assessed: painful symptoms, abscess, fistula, pathological mobility, loss of integrity of the lamina dura, internal/external root reabsorption, periodontal ligament widening, and furcal/periapical radiolucency. Teeth presenting any of these criteria were considered as a failure. Sample size: 35 teeth (success rate at 12-month FU = 90%, $\alpha = 0.05$, $\beta = 0.80$). Descriptive data analysis was performed.

Results: 21 primary molars (5 with occlusal caries, 16 with interproximal caries) were included. Success rates at 1, 3, 6 and 12-month FU were 100% (n = 21), 84.3% (n = 16), 88.3% (n = 13) and 87.5% (n = 8), respectively. All failures occurred in teeth with interproximal restorations.

Conclusions: according to the obtained results, the use of TheraCal PT® in pulpotomies of primary molars demonstrated good success rates over time. Enlarging the sample size is necessary to obtain exhaustive findings.

ORTHOPANTOMOGRAPHY AND AUTISM SPECTRUM DISORDER: SIMPLIFYING THE EXPERIENCE THROUGH THE USE OF SOCIAL STORIES

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Aim: to evaluate the use of social stories in facilitating orthopantomography in autistic patients. Social stories are evidence-based tools that enhance social understanding, reducing anxiety and problematic behaviors. Studies confirm their effectiveness in improving socio-communicative skills.
Methods: a social story was created to illustrate the steps of the orthopantomography exam. A short video with audio description was recorded, showing locations, personnel, equipment, and actions the patient will encounter at the radiology department of Dental School, University of Turin. Additionally, a brochure with images and descriptions was developed for autistic patients who prefer static visuals over videos. The social story was also adapted into Augmentative and Alternative Communication (AAC) format, which employs symbols, images, and technology to support communication in individuals with verbal difficulties, promoting autonomy and inclusion.
To assess its effectiveness, an anonymous Google Form was administered to caregivers after the radiographic examination to evaluate the social story's role in facilitating the procedure and reducing patient distress.
Results: data collected from the questionnaire will be analyzed and presented at CDUO 2025 Roma, as the study is still ongoing.
Conclusions: social stories improve the quality of life for autistic individuals. This study will determine whether they also facilitate medical procedures such as panoramic radiography, making them more accessible and manageable.

ASSESSMENT OF THE LEVEL OF KNOWLEDGE REGARDING TRAUMATIC DENTAL EVENTS IN THE SCHOOL ENVIRONMENT

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Aim: this study investigates teachers' knowledge and awareness regarding the management of traumatic dental injuries in schools, as well as the variables that may influence these factors.
Methods: an online questionnaire was created using Google Forms, consisting of 17 questions covering demographic and professional information, previous experience, and knowledge related to dental trauma. Participation was voluntary and anonymous, with a total of 117 teachers involved. The questionnaire was scored based on nine specific knowledge-related questions, with results categorized as insufficient (<5), sufficient (= 5), and more than sufficient (>6). Pearson's chi-squared test was used to assess the association between teachers' knowledge of traumatic dental injuries and potential influencing factors.
Results: the data revealed that the majority of participants were female (84.6%), with 36.8% aged between 50 and 70 years and 27.4% between 30 and 40 years. Among them, 55.6% were secondary school teachers, 31.6% primary school teachers, and 12.8% nursery school teachers. Notably, 93.2% had never received any formal training on managing dental trauma, while 29.9% had witnessed a dental injury at school, most commonly during break time (54.7%). Only 11.1% felt prepared to intervene. The knowledge assessment showed that 42 teachers (36%) had insufficient knowledge, 48 teachers (41%) had sufficient knowledge, and 27 teachers (23%) had more than sufficient knowledge.
Conclusions: teachers' knowledge of dental trauma management is generally inadequate. Proper training is essential to ensure timely and appropriate intervention, reducing complications, improving prognosis, and restoring function. Efforts should focus on enhancing teachers' knowledge of emergency trauma management.

ALTERED SALIVARY GLAND FUNCTION IN PEDIATRIC OSTEOGENESIS IMPERFECTA: A CASE-CONTROL STUDY

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Aim: this study aimed to evaluate salivary gland function and oral health in children with Osteogenesis Imperfecta (OI), compared to healthy controls, and to assess the effect of Bisphosphonate (BP) treatment.

Methods: children aged 8-15 with confirmed OI and health controls were recruited at the Pediatric Dentistry Section (University of Turin). Dental exams assessed caries, plaque, gingival health, stimulated saliva flow, pH, and buffer capacity.

Results: 22 OI patients (mean age 10.7±2.4 years) and 22 gender-matched healthy controls (mean age 10.3±2.3 years) participated. OI patients had significantly reduced saliva quantity and quality, with lower stimulated salivary flow rates (SFR, $P < 0.001$), more gingival inflammation ($P = 0.003$), and more caries in both primary ($P = 0.038$) and permanent teeth ($P = 0.005$). BP-treated OI patients had significantly lower resting ($P = 0.024$) and stimulated SFR ($P = 0.019$) compared to non-BP users.

Conclusions: reduced SFR and poor oral health are exhibited by pediatric patients with OI, emphasizing the importance of regular screenings and early interventions for salivary management.

MIH IN PEDIATRIC PATIENTS AFFECTED BY ASTHMA

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Aim: Molar Incisor Hypomineralization (MIH) is a qualitative enamel defect affecting the first permanent molars and incisors, characterized by systemic enamel hypomineralization. This study aims to assess the prevalence of MIH in a pediatric population diagnosed with severe allergic asthma undergoing treatment with high-dose inhaled corticosteroids and Omalizumab.

Methods: this study investigated oxidative stress in MIH by analyzing antioxidant status and salivary biomarkers, including salivary malondialdehyde. Eight patients (aged 7-15 years) were divided into two groups: one with severe asthma receiving high-dose inhaled corticosteroids, LABA, and Omalizumab, and a control group. MIH was diagnosed using EAPD and mDDE criteria, while pain perception was assessed with the VAS scale (0-10). Saliva samples were collected in sterile 4 mL polypropylene vials, stored at -80°C, centrifuged at 800 g for 10 minutes to remove cellular debris, and subsequently analyzed using a specific assay to determine Total Antioxidant Capacity (TAC).

Results: salivary analysis revealed a significant increase in Total Antioxidant Capacity (TAC) in the asthma group (100 Trolox µM) compared to the control group (250 Trolox µM).

Conclusions: no direct correlation between asthma and MIH was found; however, an association between asthma and enamel defects suggests a potential impact of asthma-related hypoxia on enamel mineralization during the neonatal period. Additionally, the correlation between enamel defects and elevated TAC levels indicates a possible role of oxidative stress in their pathogenesis.

MARFAN SYNDROME: MAXILLARY TRANSVERSE DEFICIENCY AND BMI: CASE-CONTROL STUDY WITH PRELIMINARY RESULTS IN A GROWING SAMPLE

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Aim: to verify the correlation between body mass index and transversal upper jaw deficit, comparing patients with Marfan Syndrome (MS) with non-syndromic subjects.

Methods: 11 subjects aged 6-11 years were recruited at the Department of Paediatric Dentistry Tor Vergata Hospital (Rome), referred from the MS Regional Center with the following inclusion criteria: mixed dentition and transverse deficit of the upper jaw (GM group). A statistically significant sample of 22 non-syndromic subjects was selected as a control group (GC group). BMI was calculated with weight and height, observed on Cacciari graphs centiles for Italian population. The maxillary intermolar distance (IPMW) and intercanine distance (ICW) were measured. An IPMW ≥37.45 mm is normal. However, the IPMW to ICW ratio of 1.15:1±0.05 or higher and IPMW <34.92 mm indicates an arch deficit. The distances were calculated on digital models using an intraoral scanner. A comparative analysis was performed between the two groups.

Results: the preliminary results showed low BMI values in the GM compared to the GC, confirming an increased growth pattern, in the vertical dimension, at an early stage, in terms of age. In addition, the degree of transverse deficit of the upper jaw is higher in GM than in GC.

Conclusions: the MS causes skeletal abnormalities, affecting both the BMI and the maxillofacial district. The present study confirmed the importance of orthodontic-interceptive treatment in the multidisciplinary treatment planning of this rare syndrome.

DIABETES AND ORAL HEALTH: PRELIMINARY RESULTS OF AN OBSERVATIONAL STUDY ON PATIENTS OF THE PEDIATRIC DIABETOLOGY OF PADUA

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Aim: this work consists of an observational study based on the comparison between patients treated with a microinfuser and those treated with an insulin pen followed by the Diabetes Department of the Hospital of Padua aged between 0 and 14 years.

Methods: data were collected through 6 questionnaires (anamnesi, DMFT/dmft, PSQ, Periodontal Record, P-CPQ) on 64 patients to date.

Results: statistically significant differences were found in the number of cavities and awakenings per night between the two groups. The other parameters did not show statistically significant differences.

Conclusions: patients treated with insulin pens have a higher number of caries, especially in deciduous teeth and have more awakenings during the night, this can lead to a lower quality of sleep.

IMPACT OF SECONDHAND SMOKE FROM CONVENTIONAL CIGARETTES, IQOS, AND E-CIGARETTES ON PEDIATRIC ORAL HEALTH A CROSS-SECTIONAL STUDY ON COTININE LEVELS AND DENTAL CARIES RISK

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Aim: SecondHand Smoke (SHS) is a significant public health issue, especially for children. Although IQOS and e-cigarettes are marketed as less harmful, their effects on pediatric oral health remain unclear. This study assesses SHS exposure from conventional cigarettes, IQOS, and e-cigarettes, focusing on cotinine levels in gingival fluid and the risk of dental caries in children.

Methods: a cross-sectional study of 160 children aged 3-14 years was conducted, divided into four groups: SHS from conventional cigarettes, IQOS, e-cigarettes, and a control group with no exposure. Cotinine levels were measured using Liquid Chromatography-tandem Mass Spectrometry (LC-MS/MS), and dental caries were evaluated using the DMFT index. Parental smoking habits and children's oral health behaviors were surveyed. Statistical analyses included ANOVA, Kruskal-Wallis tests, and Spearman's correlation.

Results: children exposed to conventional cigarette SHS had the highest cotinine levels (15.0±5.0 ng/mL), followed by e-cigarettes (7.0±2.5 ng/mL), IQOS (5.0±2.0 ng/mL), and the control group (1.0±0.5 ng/mL) ($p < 0.05$). DMFT scores were highest in the conventional cigarette group (4.0±1.5), followed by e-cigarettes (3.5±1.3), IQOS (3.0±1.2), and the control group (1.0±0.8) ($p < 0.05$). A strong positive correlation between cotinine levels and DMFT scores was found ($p = 0.72$, $p < 0.001$).

Conclusions: SHS exposure from all sources adversely affects children's oral health, with conventional cigarettes being the most harmful. While IQOS and e-cigarettes pose lower risks, they still contribute to nicotine absorption and higher caries risk. Public health efforts should focus on promoting smoke-free environments and raising awareness about SHS's impact on children's health.

SALIVARY FLOW RATE IN CHILDHOOD CANCER SURVIVORS: CROSS SECTIONAL STUDY

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Aim: this cross-sectional study aimed to investigate salivary disfunction in Italian children in remission from cancer, comparing them with age- and gender-matched healthy children.

Methods: pediatric patients hematological malignancies survivors, aged six to fourteen years, treated for cancer before the age of ten, and off-therapy for at least two years and healthy age- and gender-matched controls, referred to Section of Pediatric Dentistry at University of Turin, were recruited for this study. Stimulated saliva flow rate, pH, and buffer capacity were evaluated. ANOVA test was used to analyze saliva flow rate, pH and buffer capacity.

Results: thirty-two pediatric cancer survivors and thirty-two healthy children were enrolled in this study. Childhood cancer survivors exhibited significantly lower stimulated whole saliva and pH compared to their healthy controls (both $p < 0.001$). Stimulated whole saliva impairment was more pronounced in children treated with chemotherapy before five years of age ($p < 0.001$), persisting even after five-nine years of disease remission.

Conclusions: the study reveals the lasting damage of chemotherapy to salivary glands, with a persistent decrease in salivary flow in pediatric cancer survivors.

OSTEOGENIC POTENTIAL OF SIMVASTATIN ALONE AND IN COMBINATION WITH CALCIUM SILICATE-BASED CEMENTS: AN *IN VITRO* STUDY

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Aim: this *in vitro* study aimed to evaluate the osteogenic potential of Simvastatin (SVT) alone or in combination with Biodentine (BD) or ProRoot MTA (MTA) cultured with human osteosarcoma (Saos-2) cells.

Methods: BD and MTA were shaped into sterile disks that were incubated for 7 days to obtain extracts and applied to Saos-2 cells with or without 0.1 μM SVT. Cell viability was assessed by MTT assay at 24, 48, and 72 h. Osteogenic differentiation was evaluated by Alizarin Red Staining (ARS) after 18 days.

Moreover, Runx2 and Alp gene expression were analyzed by reverse transcriptase polymerase chain reaction (RT-qPCR) at 12 and 18 days. Statistical analysis was performed using ANOVA, Bonferroni's test and Student's tests.

Results: SVT 0.1 μM preserved cell viability as control. SVT+BD increased cell viability than BD alone. In case of MTA, SVT provided no differences in cytotoxicity. ARS showed that SVT significantly enhanced mineralization, as observed for SVT+BD. Conversely, BD and MTA alone showed moderate effects. Regarding gene expression, BD alone induced Runx2 overexpression at day 12. Conversely, downregulation of Runx2 was observed in MTA or MTA+SVT. Alp expression was upregulated at day 18 in all conditions (SVT, BD, SVT+ BD). In presence of MTA, SVT alone significantly upregulated ALP than other groups; however, the combination of SVT increased ALP expression than MTA alone.

Conclusions: BD and MTA, even supplemented with SVT, differently acted on the expression of differentiation genes, although with a similar effect on the mineralization nodules deposition.

SILVER DIAMINE FLUORIDE, BIOACTIVITY AT THE DENTINE-RESTORATION INTERFACE AND POTENTIAL FOR USE IN YOUNG ORTHODONTIC PATIENTS

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Aim: the interaction between Silver Diamine Fluoride (SDF) and bioactive restorative materials remains poorly explored. This study investigates the effect of SDF on the dentin-restorative interface, with a focus on ion release and SDF remineralizing properties.

Methods: 38 extracted human teeth were sectioned to expose dentin, artificially demineralized and randomized into an SDF-treated group (n = 19) and an untreated control group (n = 19). Twelve samples were restored with bioactive resin (Activa BIOactive). Mineralization was measured by laser fluorescence (DiagnoDent) before and after SDF application. Morphology and bioactivity at the tooth-restoration interface were evaluated by Scanning Electron Microscopy (SEM) and EDX and Raman spectroscopy.

Results: a significant decrease in fluorescence was observed in SDF-treated samples, indicating a remineralizing effect. Raman and SEM-EDX analyses confirmed the presence of silver, iodine and fluoride at the interface, demonstrating the penetration of SDF into dentin. No significant presence of fluoride was detected in the untreated samples.

Conclusions: SDF appears effective in promoting remineralization of dentin without significantly affecting the release of ions at the interface by the bioactive material. This property was also not evident from this data and thus needs further research. The synergistic use of SDF and bioactive materials could facilitate the maintenance of deciduous teeth, especially in orthodontics patients where in-situ appliances may compromise access, isolation, and traditional restorative procedures.

TOPOGRAPHICAL AND MICROMECHANICAL CHARACTERIZATION OF ARTIFICIALLY CARIOUS DENTINE TREATED WITH SILVER DIAMINE FLUORIDE AND IMPLICATIONS FOR THE PEDO-ORTHODONTIC MANAGEMENT OF THE YOUNG PATIENT

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Aim: Silver Diamine Fluoride (SDF) is a promising treatment for caries in primary teeth, but the effects on the topographical properties of treated dentin are poorly studied. This study aimed to evaluate SDF's effects on artificially carious dentin, focusing on morphological, chemical, and micromechanical characterization.
Methods: 38 extracted human teeth were sectioned transversely to expose the dentin, subjected to artificial demineralization, and randomly divided into either an experimental group treated with SDF (n = 19) or an untreated control group (n = 19). Mineralization was measured by laser fluorescence (DiagnoDent) before and after treatment. Surface roughness was analyzed by optical profilometry after treatment. Morphology and chemical composition were analyzed by Scanning Electron Microscopy (SEM) and EDX spectroscopy, respectively.
Results: the SDF group showed a significant increase in mineralization compared to the control, without significant changes in surface roughness. SEM-EDX analyses revealed the presence of silver and iodine in the treated samples, whose specific localization suggests a decrease in dentinal tubule patency.
Conclusions: SDF demonstrated efficacy in remineralizing dentin without significantly altering its topographical properties. Therefore, these *in vitro* results support its use in both non-restorative and restorative protocols.
SDF could also be a valid tool in a pedo-orthodontic approach for the management of active carious lesions in young, poorly cooperating patients who require orthodontic treatment.

A NEW CLASSIFICATION FOR BLACK STAINS IN CHILDREN: AN INNOVATIVE THERAPEUTIC PROTOCOL FOR MANAGEMENT AND PREVENTING RECURRENCE

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Aim: the recent literature on the treatment of Black Stains (BS) does not identify a universally applicable clinical protocol. This study introduces a new classification based on the therapeutic approach and a flowchart to assist pediatric dentists in managing black stains and preventing their recurrence.
Methods: literature review comparing the results of articles from the period 2003-2024. The PubMed database is used to search for articles with the following keywords: black stain, classification, management, recurrence prevention. Based on the analysis of the articles, a new therapeutic protocol for patients with recurrent BS is developed.
Results: building on the new classification of BS (A, B, C, D), the new therapeutic protocol for managing recurrent BS (D score) is structured into 8 key areas that demonstrate its effectiveness. These are: dietary history and oral hygiene habits, photos of the dental arches and tongue, professional oral hygiene, home oral hygiene instructions, dietary instructions, topical application of calcium phosphate mousse, 15-day food diary and a follow-up after 15 days.
Conclusions: this new classification and this therapeutic protocol, through the integration of epidemiological and clinical data, emphasize the importance of continuous care and monitoring of BS by both the professional and the caregiver, as well as the implementation of good practices to improve oral conditions and, consequently, prevent the recurring nature of D score BS.

EFFECTIVENESS OF DENTAL RESTORATIVE MATERIALS IN ATRAUMATIC TREATMENT OF CARIOUS PRIMARY TEETH IN PEDIATRIC DENTISTRY

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Aim: the study evaluates the effectiveness of Atraumatic Restorative Treatment (ART) in pediatric dentistry by comparing it with other restorative techniques. It aims to analyze the performance of different dental materials, assess the cost-effectiveness of ART, and explore its long-term success in managing dental caries in children.

Methods: following PRISMA guidelines, a systematic search was conducted in PubMed, Web of Science, and Scopus for studies published in the last ten years. Inclusion criteria encompassed in vivo studies on children, randomized controlled trials, and case-control studies assessing ART's effectiveness. The risk of bias was evaluated using the ROBINS-I tool.

Results: eighteen studies met the inclusion criteria. ART was found to be an effective, minimally invasive approach for treating dental caries, particularly in low-resource settings. High-viscosity Glass Ionomer Cements (GICs) showed better longevity in restorations. Comparisons with Hall Technique and Papacarie indicated that while these techniques offer higher success rates in some cases, ART remains a viable, cost-effective option.

Conclusions: ART is a reliable technique for pediatric restorative dentistry. Its accessibility, cost-effectiveness, and minimally invasive nature make it an essential tool for treating caries in children, particularly in settings with limited dental resources.

SMART (SILVER DIAMINE FLUORIDE MODIFIED ATRAUMATIC RESTORATIVE TREATMENT) IN THE MANAGEMENT OF MOLAR AND INCISOR HYPOMINERALIZATION (MIH): A NARRATIVE REVIEW

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Aim: the study was conducted to determine whether the combined topical application of Silver Diamine Fluoride (SDF) and restoration with Glass-Ionomeric Cements (GIC) is effective in the management of teeth affected by Molar and Incisor Hypomineralization.

Methods: an electronic search was conducted on PubMed and on the main European or American Journals and/or Association of Paediatric Dentistry, including interventional/observational studies, case reports, and/or reviews published in the last decade.

Results: the combined use of SDF and/or Glass Ionomeric Cements (GIC) on MIH affected teeth was found to be effective in the treatment of initial carious lesions, especially in posterior sectors. Moreover, the patients find it helpful in the matters of sensitivity and pain tolerance. The main drawback was related to the permanent black staining of by SDF. Although the antibacterial properties of silver and the gradual release of fluoride granted by SDF are, indeed, extremely helpful in hypomineralized teeth, it must be highlighted that other non-invasive restorative procedures, such as Casein PhosPhopeptide-Amorphous Calcium Phosphate (CPP-ACP), show almost the same outcomes with no significant difference.

Conclusions: the treatment with SMART is effective and could be recommended in the treatment of posterior teeth affected by MIH.

NEW PERSPECTIVES ON THE MEDICAL TREATMENT OF EARLY CHILDHOOD CARIES: LITERATURE REVIEW OF SDF *VERSUS* NSF

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Aim: early childhood caries is one of the most common chronic diseases in children. A minimally invasive technique for treating caries is the use of Silver Diamine Fluoride (SDF). However, SDF has the side effect of causing dark staining on treated lesions. A more aesthetic solution is provided by Nano-Silver Fluoride (NSF). This review compares the effectiveness of NSF versus SDF in arresting caries in primary teeth.

Methods: a literature review was conducted using PubMed, Google Scholar, and Cochrane databases. Articles published from 2019 to the present were selected using the keywords “caries,” “SDF,” and “NSF.” Of these, only 9 studies were included based on the following criteria: clinical study reviews involving children aged 3-6 years, treatment of primary teeth, follow-up at 3 weeks, 6 months, and 12 months, and ICDAS codes of 3-5. *In vitro* studies, abstracts, and case reports were excluded.

Results: six studies show that NSF is more effective than SDF in stopping the progression of caries. Three studies indicate that NSF is highly biocompatible, does not cause the side effects associated with SDF - such as gingival irritation, metallic taste, or ulceration - and is more favorably accepted by children. Additionally, NSF is more cost-effective as it requires fewer applications. The results of only three studies suggest that NSF and SDF have equivalent effectiveness.

Conclusions: the review confirms NSF as an effective, safe, and minimally invasive solution. Further studies are needed to optimize application protocols and evaluate long-term outcomes.

DENTAL SLEEP MEDICINE: NEUROCOGNITIVE AND BEHAVIORAL CONSEQUENCES OF OSAS (OBSTRUCTIVE SLEEP APNEA SYNDROME) IN PEDIATRIC AGE

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Aim: the aim of this systematic review is to analyze the impact of OSAS on the neurobehavioral sphere in pediatric age. Sleep is essential to ensure the regular maturation of the neurocognitive system. As emphasized by the American Academy of Sleep Medicine, sleep fragmentation may lead to learning and cognitive problems.

Methods: the research was conducted using major electronic databases (PubMed, Scopus, Medline). The keywords used were “OSAS,” “behavior,” “neurocognition,” and “children.”
For this literature review, articles from 2022 to the present were analyzed, and only 20 articles met the inclusion and exclusion criteria.

Results: several studies show a correlation in pediatric patients between sleep disorders and hyperactive behavior, inattention, and reduced academic performance. Other studies highlight how these consequences may expose OSAS patients to the risk of an inaccurate ADHD (Attention Deficit Hyperactivity Disorder) diagnosis. Moreover, an exacerbation of OSAS symptoms has been observed in patients diagnosed with ADHD, which has been identified as a comorbidity in 30% of children with sleep apnea.

Conclusions: this review highlights how OSAS in pediatric age can lead to neurobehavioral problems.
Research is still ongoing to identify markers and clinically useful tools capable of detecting children at risk of developing cognitive-behavioral deficits unrelated to ADHD.
The American Academy of Pediatrics recommends conducting thorough diagnostic assessments to promptly identify risk factors and prevent the consequences of undiagnosed OSAS.

CLINICAL EFFICACY OF ACTIVA™ BIOACTIVE RESTORATIVE ON DECIDUOUS TEETH: A REVIEW OF THE LITERATURE

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Aim: pediatric dentistry is evolving with the introduction of bioactive materials that combine the mechanical properties of composites with the bioactivity of glass ionomer cements. Among these, ACTIVA™ BioActive Restorative has the ability to release and recharge calcium, phosphate and fluoride ions, promoting remineralization and improving the integrity of restorations. This review analyzes the clinical efficacy of ACTIVA™ by comparing it with materials such as compomers, nanocomposites and resin-modified glass ionomers.

Methods: a literature review was conducted on the PubMed, Google Scholar and Cochrane databases, typing the keywords, "bioactive materials" and "deciduous teeth" selecting articles from 2020 to date. Of these, only 7 were included based on the following criteria: reviews, clinical studies with sample age 5-10 years, caries on deciduous molars with ICDAS code 3-5, 12-month follow-up. *In vitro* studies and abstracts were excluded.

Results: studies demonstrate that ACTIVA™ has similar or superior clinical performance compared to Cention N and SDR Bulk-fill, ensuring aesthetics and marginal stability over time. Furthermore, ACTIVA™ has good adhesion to dentin and better wear resistance compared to traditional materials, with a shorter application time. However, some studies show a tendency to marginal color change.

Conclusions: ACTIVA™ represents a valid alternative to traditional materials for the restoration of deciduous teeth, thanks to its ability to promote remineralization, better adhesion and ease of application. Long-term clinical studies are needed.

ORTHODONTIC APPROACHES IN THE MANAGEMENT OF MANDIBULAR FRACTURES: A SCOPING REVIEW

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Aim: non-surgical approaches have been proposed in the management of mandibular fractures, especially in children; but there is a lack of clear guidelines on the clinical indications of conservative approaches. The aim of this scoping review is to provide existing available evidence in the role of the orthodontist in the management of mandibular fractures.

Methods: PRISMA-ScR guidelines were followed to select eligible articles on the databases PubMed, Scopus, and Web of Science according to precise inclusion criteria. The research question was formulated as follow: "what is the scientific evidence concerning the rule of orthodontists in the management of mandibular fractures" and "the preferential use of the direct bonding technique with orthodontic brackets rather than rigid arch bars?"?

Results: seventeen articles were included. Five articles presented the use of removable acrylic splints or functional appliances, six articles regarded the employment of cemented acrylic or rigid splints and six articles described the management of mandibular fractures in adults and children through orthodontic brackets or mini-screw. Most of these techniques have been employed in children and growing subjects, while fewer data were available for conservative treatment in adults.

Conclusions: orthodontists could manage less severe cases of mandibular fractures, especially in children and growing subjects. There are no sufficient elements that could the preferential use of orthodontic brackets over rigid arch bars. Further prospective comparative studies with long follow-up will be needed to better define the clinical indications of orthodontic approaches in the management of mandibular fractures based on severity, location and age.

ORTHODONTIC ALTERATIONS IN A SAMPLE OF PEDIATRIC PATIENTS WITH OSTEOGENESIS IMPERFECTA

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Aim: the aim of the study is to investigate a possible correlation between Osteogenesis Imperfecta, Class III malocclusion and orthodontic alterations in the developmental age.

Methods: using the keywords "osteogenesis" and "malocclusion," a systematic review was conducted on the PubMed and Scopus databases. A study was also conducted on a sample of pediatric patients from the Regional Osteogenesis Center at the Umberto I Polyclinic (Sapienza University of Rome). From a database of about 300 patients, a sample of 38 subjects was selected (n = 24 mild form, n = 11 moderate form, n = 3 severe form of pathology); the patients were aged 6-12 years in mixed dentition. The study was focused on the type of occlusion and related orthodontic issues, evaluated exclusively through clinical and radiographic examination. Also data regarding respiratory and swallowing patterns were included in this phase of the study. The association between outcome variables (dental malocclusion) and exposure variables (OI) was assessed using chi-square and proportionality tests.

Results: the 6 articles from the systematic review that matched the eligibility criteria showed that patients with OI frequently present with Class III malocclusion (Angle's classification), higher PAR, DHC-IOTN and DAI scores, and altered cephalometric parameters, compared to a control group without OI.

The study conducted on the patient sample with OI confirmed that these patients commonly present Class III malocclusion and crowding of the dental arches, and that such issues decrease in percentage as severity of the condition decreases, from severe forms (100%) to moderate (50%) and mild (41%) forms of the disease.

Conclusions: even though the methodology is not standardized, the data collected through the study may be comparable to those provided by the literature.

DESENSITIZATION OF AUTISTIC CHILDREN IN DENTAL PRACTICE

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Aim: this study examines the impact of desensitization before the real dental visit on improving access to dental care for children with autism by reducing fear-inducing behaviors.

Methods: 20 autistic children (aged 3-10 years) receiving treatment at the Unit of Child Neurology and Psychiatry at the University Hospital G. Martino in Messina participated in a new desensitization protocol. All patients, prior to accessing treatment, underwent the Short Sensory Profile and the AQ test. The process included gradual exposure to dental stimuli through images, videos, simulations, and the use of music during the actual visit.

Two study groups were compared: one with an exposure time of a few hours and the other with a fourteen-day exposure period. Cooperation during the dental examination was assessed; the dental examination was divided into several steps and a score from 1 to 5 was assigned for each step completed by each child.

Results: a statistically significant difference was found between the two groups, with children who received information immediately before the visit demonstrating lower cooperation compared to those with a longer exposure period.

Conclusions: a longer latency period between desensitization and dental visit enhances cooperation in autistic children by allowing for a reduction in anxiety, which consequently leads to a decrease in problematic behaviors. Providing accurate and realistic information in advance, integrating behavior management techniques, and involving parents and educators are crucial for optimizing dental care.

ARTIFICIAL INTELLIGENCE AND PARENTAL SUPPORT: THE APPLICATION OF MACHINE LEARNING IN MANAGING ORAL HEALTH IN CHILDREN WITH ASD

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Aim: this study explores the potential of Artificial Intelligence (AI) in supporting parents of children with Autism Spectrum Disorder (ASD) by providing personalized oral health management recommendations through a machine learning-based system.

Methods: a questionnaire assessing dietary habits, oral hygiene practices, and parafunctional behaviors in children with ASD was developed in collaboration with the Pediatric Neurology and Psychiatry Unit of the G. Martino University Hospital in Messina. The questionnaire was distributed via QR code to 50 parents of children aged 3 to 10 years old. The collected data were analyzed using a machine learning algorithm, designed with the contribution of Dr. Ugo Arcidiacono, to generate recommendations based on the specific needs of children with ASD and categorized according to risk levels.

Results: preliminary findings indicate that the AI system effectively supports parents by facilitating the adoption of targeted oral health strategies. The AI-based approach demonstrated potential in optimizing prevention and increasing parental awareness.

Conclusions: the integration of AI in ASD management provides a practical and accessible tool for parents, helping them prepare children for dental visits and reduce anxiety-related behaviors. AI emerges as a valuable resource in optimizing dental care strategies, improving communication, and promoting an informed approach to oral health.

MUSIC THERAPY AS A SUPPORTIVE APPROACH IN PEDIATRIC DENTISTRY FOR PATIENTS WITH AUTISM SPECTRUM DISORDER

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Aim: dental procedures are often challenging for people with NeuroDevelopmental Disorders (NDDs), in particular for those with Autism Spectrum Disorder (ASD), who frequently require pharmacological interventions. ASD people with or without Intellectual Disabilities (ID) can exhibit great anticipatory anxiety and uncooperative behaviors, that reduce cooperation and the possibility to conclude dental sessions successfully. This study aimed to investigate the usefulness of music therapy as a supportive approach in pediatric dentistry for ASD patients.

Methods: the sample included N = 10 patients with ASD (aged 6 to 25).

Each patient underwent two partial professional oral hygiene sessions both preceded by a 10-minute music listening session. During the second one, instead, professional oral hygiene was performed simultaneously with music listening. Dental anxiety level and cooperative behavior were evaluated with heart rate measure, Frankel Scale and Clinical Global Impression Scale (GCI).

Results: heart rate measured during professional oral hygiene decreased after music listening sessions in both conditions. Furthermore, it resulted lower when music was listened to simultaneously with dental care. No patients needed drug treatments.

Conclusions: evaluating the obtained results, music therapy appears to be a promising approach in pediatric dentistry. It may improve access to care and reduce the need for pharmacological treatments. However, further research is needed to evaluate the long-term stability of the results.

ORAL LESIONS IN PEDIATRIC PATIENTS WITH EATING DISORDERS: AN EPIDEMIOLOGICAL STUDY

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Aim: this observational study was performed to assess the prevalence of oral lesions in pediatric patients affected by Eating Disorders (ED) and the patient's self-perception of their own oral health.

Methods: an oral examination was conducted in selected patients, who were diagnosed with an ED and aged between 10 and 18 years, to look for hard and soft tissues lesions. Moreover, two questionnaires were administered: the first one concerning the previous dental experience and oral hygiene habits and the second one concerning the self-perception of the smile aesthetics (PIDAQ = Psychosocial Impact of Dental Aesthetics Questionnaire).

Results: higher DMFT mean values were found in the bulimic patients' group with self-induced vomit, while BEWE score for erosion was higher in patients with anorexia without self-induced vomit.

27% of enrolled patients showed soft tissues lesion (mostly morsicatio buccarum) and 29% reported temporomandibular joint pain.

Most of the patients reported a lack of knowledge of their dentist about ED and oral health.

Lower PIDAQ score were reported by anorexic patients, showing a distortion of their corporal vision, as typical trait of their pathology.

Conclusions: an adequate knowledge of the possible oral manifestations of ED by dentists is essential for a comprehensive preventive and therapeutic approach of patients affected by these disorders, especially in adolescence.

SLEEP MEDICINE EDUCATION IN POSTGRADUATE PROGRAMS IN ORTHODONTICS AND PEDIATRIC DENTISTRY

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Aim: aim of this study was to evaluate the current state of sleep medicine education in the Italian postgraduate programs in Orthodontics and Pediatric Dentistry.

Methods: to conduct this study, after receiving the ethics committee approval, an anonymous online Google form questionnaire (taken from the American Academy of Neurology-Sleep Section) was distributed via email to the course directors of all Italian program Directors of Postgraduate Programs in Orthodontics and Pediatric Dentistry. All participants were asked to fill out a survey providing information regarding resources available and the amount of sleep education offered in their programs.

Results: a total of 15 (68,2%) questionnaires were analyzed for Orthodontic programs and 7 (31,8%) for the Pediatric Dentistry programs. Sleep medicine is taught in 66,7% of Orthodontic programs and 57,1% of Pediatric Dentistry programs. Treatment for sleep disorders is offered by 93,3% of the Orthodontic programs and 42,9% of Pediatric Dentistry programs.

The content of sleep medicine education primarily covered OSA (90,9%), sleep bruxism (59,1%), sleep physiology (45,5%). 7 programs (30,4%) do not provide any sleep medicine education.

Conclusions: this study highlights the current state of sleep medicine education within advanced dental education programs. Increased education in sleep medicine is needed in several postgraduate Italian programs.

IMPACT OF FACIAL DIMORPHISM ON QUALITY OF LIFE IN YOUNG PATIENTS AFTER GERMECTOMY: A CLINICAL STUDY

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Aim: this study aims to evaluate the relationship between facial dimorphism after lower third molar germectomy in adolescents, surgical parameters, and self-perceived Quality of Life (QoL) one week post-surgery.

Methods: adolescents (10-16 years) undergoing germectomy at Sapienza University of Rome were analyzed. Standardized frontal photographs were taken preoperatively (T0) and postoperatively (T7) to assess facial dimorphism, rated by pediatric dentists. Demographic and surgical data were collected, along with SF-12™ QoL questionnaire responses. Linear regression analyzed associations between surgical variables, postoperative facial changes, and QoL. Ethical approval was obtained (n. 5953).

Results: among 38 patients (mean age: 12.6±1.6 years), facial dimorphism at T7 negatively correlated with surgical duration ($r = -0.42$, $p < 0.05$). Procedures under 18 minutes resulted in 20% less asymmetry than those over 28 minutes. Lower facial dimorphism was linked to higher QoL (mean: 82±6 vs 67±5). Patients with reduced swelling and asymmetry reported better self-perceived health ($p < 0.01$).

Conclusions: shorter surgery reduces postoperative facial dimorphism and enhances QoL in adolescents undergoing germectomy. Optimized techniques are crucial for functional and aesthetic recovery. Future research will explore kinesiotaping as adjunctive therapy for postoperative edema control and improved oral health-related QoL.

ASSESSMENT OF NITROUS OXIDE AND OXYGEN INHALATION IN NON-COOPERATIVE YOUNG PATIENTS

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Aim: the present study aimed to assess the effectiveness of nitrous oxide (N_2O) and oxygen (O_2) sedation in improving the cooperation of pediatric patients with reported dental anxiety, during conservative treatments on deciduous teeth performed without local anesthesia and under rubber dam isolation.

Methods: a retrospective observational study was carried out from January 2019 to December 2020 in a private pediatric dental practice. A total of 371 children aged 4 to 10 years (mean age: 6.3±1.7 years), with previously documented dental anxiety or treatment refusal, were included. All participants underwent an initial cognitive-behavioral evaluation, followed by a maximum 30-minute conservative dental procedure. Sedation was initiated with 100% oxygen, and N_2O concentration was incrementally increased up to 35%. At the conclusion of the session, patients received 100% oxygen for 5 minutes. The level of patient cooperation was measured using the Venham scale at three time points: prior to sedation (T0), after the induction phase (T1), and during the procedure (T2).

Results: statistical analysis revealed a significant improvement in cooperation from baseline at both T1 and T2 ($p < 0.001$). Children aged 4-6 years demonstrated significantly lower cooperation scores at T0 ($p < 0.001$) yet attained satisfactory cooperation levels following induction (T1) ($p = 0.022$). Adverse effects were minimal, with only 2.7% of the cohort reporting minor side effects.

Conclusions: inhalation sedation with N_2O/O_2 represents a safe and efficacious strategy for enhancing cooperation during dental treatment in anxious pediatric patients, particularly in the younger age group. Its application may facilitate the management of conservative procedures in children otherwise reluctant or uncooperative during standard care.

TREATMENT OF ONCOHEMATOLOGICAL PATIENTS AT IRCCS SAN GERARDO DEI TINTORI AND MONZA E BRIANZA FOUNDATION FOR THE MOTHER AND CHILD FROM 2000-PRESENT: A LONG JOURNEY WITH LOVE

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Aim: since the early 2000s, the collaboration between the Dental Clinic and the Pediatric Oncohematology Department of IRCCS San Gerardo dei Tintori has ensured personalized dental care for hospitalized young patients. At diagnosis, 38% of leukemia patients present dental issues, with 69% showing oral signs related to the disease. These figures rise to 80-90% during hospitalization due to therapy-induced mucositis. The dentist's role includes diagnosis, prevention, treatment, and support. Early detection of oral lesions improves prognosis and reduces morbidity and mortality, even after remission.

Methods: given the immunocompromised status of patients, the dental team performs bedside visits to assess and treat oral conditions before chemotherapy or hematopoietic stem cell transplantation. Preventive care includes fluoride prophylaxis, oral hygiene support, orthodontic screening, and infection control. Interventions involve non-restorable tooth extractions, removal of fixed appliances, minimally invasive caries treatment, and mucositis management with Photobiomodulation (PBM) using a diode laser (635-700 nm).

Results: different treatment protocols produced better compliance for patients and families with complications that derive from the onco-hematological treatments.

Conclusions: over the years, the goal of improving oral health and treating lesions in young patients has evolved with new tools and protocols. Maintaining this collaboration is crucial to ensuring ongoing dental care and minimizing complications from hematologic treatments.

IMPACT OF DRUGS ON BRUXISM IN SUBJECTS WITH AND WITHOUT COGNITIVE IMPAIRMENT

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Aim: this retrospective observational study aimed to evaluate the prevalence of probable bruxism in subjects with and without cognitive impairment and to assess the effect of drug therapy on this condition.

Methods: medical records of patients referred to the Pediatric Dentistry Unit at the A. Gemelli University Polyclinic Foundation were reviewed. A total of 300 patients (55.3% males, mean age 16.5) were included (150 with cognitive impairment and 150 controls matched for sex and age with the study group). Chi-square test was used to compare prevalence.

Results: prevalence of bruxism in subjects with cognitive impairment was 55% compared to 36% of the control group; thus, describing a statistically significant difference ($p < 0.001$). Seventy patients with cognitive impairment were treated with antiepileptic or antipsychotic drugs; thus, the possible link of bruxism with these two categories of drugs were analyzed. Only antiepileptic use was significantly associated to bruxism with an Odds Ratio (OR) of 2.32 (95% CI: 0.91-5.87; $\chi^2 = 5.7$).

Conclusions: bruxism is presented significantly more frequently in patients with cognitive impairment. Antiepileptic use is significantly associated with an increased risk of bruxism.

ORAL MUCOCELE IN AN INFANT: A REPORT OF AN UNCOMMON CASE

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Aim: oral mucocele is the second most common benign soft tissue lesion of the oral mucosa and the most frequent dysfunction of the accessory salivary glands. While common in children, it is rare in newborns and infants. This report presents the case of an 11-month-old patient with a 7 mm lower lip mucocele, which appeared two weeks before consultation.

Methods: since mucoceles may regress spontaneously within 4-6 weeks, an initial conservative approach was adopted. After one month of observation, the lesion persisted, necessitating surgical excision under general anesthesia due to the patient's young age and lack of compliance.

After local anesthesia with lidocaine, an incision was made, and the lesion was excised via blunt dissection. To prevent salivary duct obstruction, adjacent potentially traumatized accessory salivary glands were also removed. Primary closure was achieved with a superficial 4/0 silk suture, removed after seven days.

Results: no recurrence was noted during a four-month follow-up period. Histopathology confirmed the clinical diagnosis of oral mucocele.

Conclusions: mucoceles can lead to functional and developmental challenges in infants, including difficulties with chewing, swallowing, and sucking. Given these potential complications, surgical excision was the most appropriate treatment in this case. Furthermore, a thorough differential diagnosis is crucial to distinguish mucoceles from other lesions like salivary gland tumors, fibromas, and hemangiomas, thereby minimizing intraoperative and postoperative complications.

TWO YEARS FOLLOW-UP ON DELAYED RE-IMPLANTATION OF A PERMANENT MAXILLARY INCISOR WITH OPEN APEX

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Aim: purpose of the present investigation was to describe the clinical outcome after a delayed re-implantation of a maxillary incisor with open apex lost for traumatic avulsion performing a retrograde root canal treatment using a bioceramic sealer.

Methods: a maxillary incisor has been re-implanted 24 hours after traumatic avulsion in a 7-year-old subject. The patient was followed for a period of 2 years to observe the evolution of healing ankylosis and root resorption.

Results: during the entire period of observation, the tooth maintained normal clinical function without esthetic compromise, although early radiographic signs of ankylosis and root resorption were present.

Conclusions: the described case shows the possibility of medium-term functional maintenance of a tooth reimplanted 24 hours after a traumatic avulsion. However, from the present case report it is not possible to draw definitive conclusions on the prognosis of open apex teeth subjected to delayed re-implantation.

ECTODERMAL DYSPLASIA IN PEDIATRIC DENTISTRY: SYNERGY BETWEEN ENDODONTICS AND PROSTHETICS - CASE REPORT

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Aim: this case report presents the dental treatment process for a pediatric patient affected by ectodermal dysplasia describing the diagnostic and therapeutic challenges arousing from this condition.

Methods: an 8,8-year-old patient with ectodermal dysplasia was diagnosed with severe hypodontia and multiple oral tissue abnormalities. The dental team performed an interdisciplinary approach and created an integrated treatment plan following accurate clinical and radiographical evaluation. Achieving optimal management of the condition required the involvement of specialists in pediatric dentistry, prosthodontics and endodontics.

Results: the patient experienced a significant improvement in quality of life due to the multidisciplinary treatment approach. Through the combination of prosthetic rehabilitation, surgical and endodontic therapy, it was possible to achieve enhancement of the oral function and preservation of the natural teeth while obtaining satisfactory chewing ability and acceptable visual appearance.

Conclusions: this case shows why multidisciplinary strategies are essential in Pediatric Dentistry when facing complex clinical conditions like Ectodermal Dysplasia. An early diagnosis and an individually customized treatment plan are crucial to achieve the best outcomes possible with the aim of improving the patient's quality of life.

ADENOMATOID ODONTOGENIC TUMOR OF UPPER JAW: A CASE REPORT OF A PAEDIATRIC PATIENT WITH 8-YEAR FOLLOW-UP

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Aim: to present a case of an Adenomatoid Odontogenic Tumor (AOT) treated surgically and followed up for 8 years.

Methods: we report a case of a paediatric patient referred to our Paediatric Dentistry Unit at P. Giaccone Policlinic University Hospital in Palermo, Italy, for swelling in the upper right anterior maxilla.

Results: a 12-year-old girl was referred by her dentist following a routine radiographic examination for orthodontic purposes, which revealed a radiolucent lesion in the upper right quadrant, associated with impacted teeth. The extraoral examination was unremarkable, without lymphadenopathy. Intraoral examination revealed the presence of deciduous teeth 5.2 and 5.3, with palpation showing increased bone volume in the affected region. A cone-beam computed tomography was performed to assess the lesion's extent, which showed a radiolucent, sclerotic borders image between the central upper right incisive and second premolar and superiorly the margin of the floor of the nasal cavity. Due to the lesion's size, enucleation was performed under general anaesthesia. Histopathological analysis confirmed the diagnosis of an AOT. The patient has been regularly followed up for 8 years, no recurrence has been observed.

Conclusions: AOT accounts for 3% of all odontogenic tumors and is more common in females, typically diagnosed in the second decade of life. Since it is usually asymptomatic and clinical and radiographic features are non-specific, biopsy and histological examination are mandatory for a definitive diagnosis. Moreover, long-term follow-up is recommended.

ECTODERMAL DYSPLASIA IN A 5-YEAR-OLD PATIENT WITH OLIGODONTIA OF DECIDUOUS AND PERMANENT TEETH: A CASE REPORT AND REVIEW OF THE LITERATURE

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Aim: to report the clinical management of a 5-year-old patient with hypohidrotic ectodermal dysplasia and extensive oligodontia, focusing on functional, aesthetic and developmental aspects of early prosthetic rehabilitation.

Methods: following a multidisciplinary assessment, the treatment plan included direct composite reshaping of conoid incisors and fabrication of upper and lower removable prostheses. After diagnostic impressions and occlusal vertical dimension registration, customized devices were fabricated. Structural modifications, such as palatal plate reduction and silicone soft relining, were applied to improve retention and compliance.

Results: initial acceptance was poor, especially for the maxillary prosthesis due to discomfort. With progressive adaptation, the patient tolerated prosthetic wear for short periods. Functional improvement was limited but allowed partial recovery of oral intake. Periodic follow-up was scheduled to monitor craniofacial growth and adjust the prosthesis accordingly.

Conclusions: despite anatomical and behavioral challenges, removable prostheses represent a valid interim solution in young patients with ectodermal dysplasia, supporting orofacial function, aesthetics and psychosocial integration during growth.

CENTRAL INCISOR: ENDODONTIC, RESTORATIVE AND PROSTHODONTIC MANAGEMENT OF A COMPLICATED RADICULAR FRACTURE IN TOOTH TRAUMATIZED TWICE

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Aim: crown-root fractures extending apically to the gingival margin and/or bone represent rare and complex dental injuries, whose management is especially challenging in cases of recurrent trauma. Conservative treatment through adhesive techniques offers a minimally invasive solution, enabling both functional and aesthetic recovery. The primary goal is to preserve the tooth in situ as long as possible, maintaining tissue trophism and postponing, if needed, future replacement therapy - potentially implant-supported - considering the young age of the patient (9 years old).

Methods: a 9-year-old patient presented with a traumatic crown-root fracture on the 2.1 element, with the fracture line extending subgingivally from the cervical third of the palatal surface. The fragment was repositioned and endodontic treatment performed. A second trauma caused fragment detachment, requiring surgical reattachment using adhesive techniques. A second root canal was performed, and orthodontic extrusion was required to gain adequate crown length. A provisional crown was then placed.

Results: at 8-month follow-up, the tooth showed reduced mobility and satisfactory healing of the pericoronal tissues. A definitive adhesive crown restoration in direct composite was performed as an alternative to a prosthetic crown due to financial constraints.

Conclusions: adhesive and minimally invasive strategies enabled the functional and aesthetic rehabilitation of a fractured tooth in a pediatric patient, preserving most of the tooth structure and supporting.

PREVALENCE OF OBSTRUCTIVE SLEEP APNEA IN PATIENTS WITH MAXILLARY ARCH CONSTRICTION: A CROSS-SECTIONAL STUDY

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Aim: aims of this study were to observe the prevalence of Obstructive Sleep Apnea (OSA) risk in patients with maxillary arch constriction; and to test the association between Tonsillar Grading in OSA in this population.

Methods: all pediatric patients referred to the Pediatric Dentistry and Orthodontics outpatient clinic with a clinical finding of maxillary arch constriction were invited to participate in the study. They underwent a complete orthodontic examination; as well as tonsillar grading evaluation through Mallampati's Intex; and underwent an overnight polygraphic recording.

Results: fourteen patients accepted to participate in the study. According to the American Academy of Sleep Medicine guidelines, 15% did not present OSA; and 70% presented with mild OSA (Apnea Hypopnea Index (AHI) between 1 and 5) and 15% presented with mild OSA (AHI between 5 and 15). Mallampati's index did not show a significant correlation to AHI.

Conclusions: patients with maxillary arch constriction often present with mild OSA despite no significant abnormalities are observed in the tonsillar grading.

EVALUATION OF THE ADHERENCE TO NATIONAL GUIDELINES FOR DENTAL CARIES PREVENTION IN THE ITALIAN PEDIATRIC POPULATION

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Aim: this study evaluates the awareness and adherence of the Italian pediatric population to national guidelines for dental caries prevention. The goal is to assess the relationship between knowledge, preventive behaviors, and oral health status, highlighting areas for improvement in educational strategies.

Methods: a questionnaire was distributed to 50 pediatric patients (ages 3-14, mean age 7.8±2.8 years) and their parents at the Pediatric Dentistry Department of the University of Turin. The survey focused on oral hygiene habits, fluoride use, and dietary patterns.

Clinical evaluations included plaque levels (PCR index) and caries prevalence (DMFT/dmft index). Statistical analysis identified key correlations.

Results: the average PCR was 44.3%, DMFT 0.9, and dmft 3.5. Significant correlations were found between oral health markers and preventive practices. Lower PCR levels were linked to professional oral hygiene instruction ($p = 0.03$) and better brushing concentration ($p = 0.02$). A lower dmft was associated with children using the same fluoride toothpaste as their parents ($p = 0.04$) and avoiding sugary drinks outside main meals ($p = 0.04$).

Conclusions: the results emphasize the need for enhanced education on oral hygiene, fluoride use, and dietary counseling, particularly focused on sugar frequency reduction.

Expanding preventive education in schools and parental courses, in addition to dental offices, could improve adherence to guidelines and reduce caries prevalence in the pediatric population.

INCIDENCE OF SELF-CORRECTION IN LIP INCOMPETENCE DURING EARLY CHILDHOOD: A LONGITUDINAL STUDY

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Aim: to assess lip incompetence in children aged 3-5 and investigate the occurrence of its self-correction.

Methods: the study involved all 3-year-old children from Chiavari (Italy) preschools, born in 2008 and 2009, with a final sample of 240 children. Parents completed a questionnaire on their child's clinical history, nutritional habits, and oral hygiene before each examination. Two examiners conducted clinical evaluations at ages 3, 4, and 5, following WHO criteria. Examinations were done in classrooms with natural light, using disposable gloves and masks in compliance with infection control protocols.

Results: the overall prevalence of lip incompetence was 8.7%, with significant differences across age groups (13.9% at age 3, 5.7% at age 4, and 6.5% at age 5; P-value <0.01). A high self-correction rate of 78% was observed, with an incidence of 5%. Only 4% of subjects showed persistent lip incompetence from age 3 to 5. Additionally, a positive correlation was found between the correction of lip incompetence and the improvement of swallowing and breathing patterns (atypical swallowing with tongue interposition and oral breathing).

Conclusions: due to the high rate of self-correction, observation is recommended for children with lip incompetence from age 3 until age 5. The correction is strongly linked to the improvement of associated negative patterns, which can affect the development of dental arches.

POTENTIAL ANTIMICROBIAL PROPERTIES OF A NATURAL SUBSTANCE WITH VEGETAL ORIGINS

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Aim: considering the increasing antimicrobial resistance, both plant-derived substances and nanomaterials are gaining extensive interest for their therapeutic potential. Vegetal compounds offer a wide variety of biologically active components, while zinc oxide-based nanomaterials possess promising biomedical properties. Therefore, this study aimed to assess the antimicrobial activity of a novel formulation of propolis, pollen, and zinc oxide nanorods (PrPoZnO).

Methods: after samples preparation, the structural incorporation of ZnO nanorods into propolis-pollen matrix was verified by Scanning Electron Microscopy (SEM). The antimicrobial effects and the antibiofilm activity of PrPoZnO against Staphylococcus aureus, Pseudomonas aeruginosa, and Candida albicans were assessed. Biocompatibility was evaluated using human osteosarcoma (Saos-2) cells, and potential antimicrobial mechanisms were explored by analyzing oxidative stress responses.

Results: the PrPoZnO formulation showed antimicrobial properties, reducing S. aureus and P. aeruginosa viability up to 85% and inhibiting the biofilm formation by 50% and 40%, respectively.

Regarding C. albicans, the mixture decreased its growth by 90% and suppressed biofilm formation by 60%. Biocompatibility tests revealed no cytotoxicity in Saos-2 cells, even at the highest concentrations (1:10).

Conclusions: the results suggested that PrPoZnO is both effective and safe, showing antimicrobial actions. These promising findings would support further investigation of PrPoZnO as a biocompatible antimicrobial agent for potential clinical use, especially in pediatric dentistry.

EFFECT OF DIFFERENT OZONE FORMULATIONS ON THE ADHESION OF PEDIATRIC RESTORATIVE MATERIALS WITH BIOACTIVE PROPERTIES: AN *IN VITRO* STUDY

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Aim: ozone therapy has been proposed as a minimally invasive approach for the management of caries in pediatric patients, but the possible effects on tooth surface and subsequent adhesion of restorative materials are poorly understood. This *in vitro* study compared the adhesion of two pediatric bioactive materials after substrate treatment with different ozone formulations. In addition, the surface roughness and chemical composition at the interface were evaluated.

Methods: a sample of extracted human teeth was sectioned and polished to obtain standardized enamel and dentin surfaces (n = 99). Specimens were randomized into 8 groups according to treatment protocol (no treatment, ozone gas, ozonated water, ozonated gel) and restorative material used (Fuji II LC, ACTIVA Bioactive Restorative). Adhesive performance was evaluated by Shear Bond Strength (SBS) test and microscopic fracture mode analysis. Surface roughness (Sa) was measured by optical profilometry, while interfacial elemental composition was analyzed by Raman spectroscopy and Scanning Electron Microscopy (SEM) equipped with EDX detectors.

Results: ozone treatment did not significantly affect SBS, fracture mode, or surface roughness. EDX and Raman chemical analyses showed no significant differences between the groups.

Conclusions: regardless of the formulation, ozone treatment showed no relevant effects on the adhesion of both tested materials nor on the quality of bonding to enamel and dentin. These results support its versatile clinical use that does not compromise the success of restorative treatments.

IMPACT OF SHADES AND THICKNESS ON THE POLYMERIZATION OF LOW-VISCOSITY BULK-FILL COMPOSITES IN PAEDIATRIC RESTORATIONS: AN *IN VITRO* STUDY

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Aim: current trends in paediatric restorative dentistry emphasize the use of bioactive, bulk-fill, and auto-cure/photo-cure materials, particularly for posterior teeth, including young permanent molars. The use of composite resins in pediatric dentistry has significantly increased over the past decades due to their ability to provide both aesthetic and functional restorations. This study aimed to investigate the influence of shade and thickness on the polymerization of SDR® flow+, a low-viscosity bulk-fill composite, by assessing its Degree of Conversion (DC).

Methods: an *in vitro* study was conducted using SDR® flow+ composite resin. Specimens were prepared at two thicknesses (2 mm and 4 mm) and four shades (Universal, A1, A2, A3). Polymerization was performed using a high-intensity LED curing unit. The DC was assessed using Fourier-transform infrared spectroscopy (ATR-FTIR).

Results: both shade and thickness significantly influenced DC. Thicker specimens (4 mm) exhibited reduced polymerization compared to thinner specimens (2 mm). Darker shades, particularly A3, demonstrated the lowest DC values due to their higher chroma, which limits light penetration. In contrast, the Universal shade achieved higher DC values, even at increased depths, likely due to its greater translucency.

Conclusions: shade and thickness play a critical role in the polymerization of bulk-fill composites.

Ensuring adequate polymerization is essential for the longevity of pediatric restorations. In pediatric dentistry, where rapid procedures and material reliability are paramount, clinicians must consider these variables carefully to optimize outcomes.

PERIODONTAL STATUS AND MICROBIAL PROFILE (BACTERIA, VIRUSES, AND FUNGI) IN SYSTEMICALLY HEALTHY PEDIATRIC SUBJECTS: A SYSTEMATIC REVIEW

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Aim: this systematic review primarily assessed periodontal microbial (bacteria, Herpesviridae, and fungi) profile (positive detection and load) in systemically healthy pediatric (≤18 years) subjects in saliva/subgingival samples, and, secondarily, compared periodontal status and related microbial profiles in those subjects with healthy periodontium, gingivitis, and periodontitis.

Methods: the study protocol compliant with the PRISMA statement was registered on PROSPERO (CRD42024593007). Studies were qualitatively synthesized and assessed through ROBINS-I and JBI.

Results: in healthy periodontium status, a balanced microbiome, including early colonizers as Streptococcus spp., and rare late colonizers as *Fusobacterium nucleatum* (47.37%), *Treponema denticola* (82.35%), and *Porphyromonas gingivalis* (29.7%), was suggestive of subclinical dysbiosis. Viruses such as HSV-I (100%), EBV-I (22.09%), and CMV (17.8%) were present latently, sustained by a proper host's immune system. In periodontitis, the microbiome shifted to pathogenic, with increased species as *Aggregatibacter actinomycetemcomitans* (56.09%), *P. gingivalis* (55.4%), and *Tannerella forsythia* (35.9%). Generalized periodontitis exhibited higher CMV (36.36%) and EBV-I (36.24%) than gingivitis (HSV-I = 18.75%). Coinfections in periodontitis suggested viral-bacterial synergy that may intensify tissue destruction and inflammation. Fungi, less investigated, may play a role in disease pathogenesis.

Conclusions: these results emphasize microbial interactions' role in periodontal health maintenance and periodontal disease progression.

THE POTENTIAL OF AUDIOVISUAL DISTRACTION IN DENTAL SETTINGS FOR PEDIATRIC PATIENTS WITH SPECIAL HEALTHCARE NEEDS: A NARRATIVE REVIEW AND PROPOSAL FOR A MULTI-SESSION BEHAVIORAL MANAGEMENT MODEL

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Aim: Special Health Care Needs (SHCN) encompass a wide range of physical, mental, sensory, cognitive, and developmental disorders necessitating specialized healthcare management. Children with SHCN often exhibit cooperation and communication difficulties, compounded by heightened dental anxiety, which can hinder regular dental appointments and impede effective care. This review aimed to assess the use of AudioVisual (AV) tools within dental settings for managing anxiety and behavior in pediatric patients with SHCN during dental procedures and evaluate the perspectives of child, dentist, and caregiver, ultimately leading to the formulation of a new multi-session behavioral management model tailored for this population.

Methods: an electronic search was led across MEDLINE/PubMed, Scopus, and Web of Science databases. The analysis culminated in developing the "UNISA-Virtual Stepwise Distraction model", a structured multi-session approach integrating conventional behavior management techniques with a gradual introduction of AV media to acclimate SHCN children to the dental setting while managing their behavior.

Results: AV tools effectively mitigate anxiety, enhance compliance in SHCN children, and reduce stress levels for the dentist and child during dental appointments. Feedback from caregivers was notably positive, endorsing AV tools for future treatments.

Conclusions: AV tools have the potential to mitigate dental anxiety, fear, and behavioral challenges, thereby improving the overall dental experience and familiarization for SHCN children.

INFRAOCCLUDED DECIDUOS TEETH: DIAGNOSIS AND THERAPY

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Aim: the aim of this literature review is to clarify the available evidence regarding deciduous teeth infraocclusion, its etiology, diagnosis, clinical features, consequences, and treatment.
Methods: a systematic review was conducted following PRISMA guidelines, searching PubMed, Web of Sciences, and Scopus for articles from 1980 to 2025. The key words used were "Infraocclusion deciduous teeth" and we found 85 articles.
Results: infraocclusion is reported to occur in 1.3% to 8.9% of growing patients, with equal prevalence in males and females. It occurs when a tooth stops its normal growth after eruption, becoming depressed below the occlusal plane. It can be linked to an eruption disorder or happen after full eruption. While ankylosis was once thought to be a key factor, it is only present in a small percentage of cases. Histological analysis shows ankylosis in many infraoccluded teeth, but bone infertia - failure of the bone to adapt and remodel - is another crucial factor. The treatment varies based on the severity of the case. Mild infraocclusion typically involves observation, while moderate cases may require occlusal reconstruction. Severe cases often necessitate extraction due to adjacent teeth angulation and space loss. Special attention is needed for deciduous teeth without permanent replacement, with options for space maintenance or tooth replacement.
Conclusions: this study highlights the complexity of infraocclusion, focusing on its prevalence, diagnostic challenges, and the importance of timely personalized treatment. It emphasizes the role of an interdisciplinary team in managing the condition, and treatment strategies ranging from observation to surgical extraction based on severity. The goal is to improve patient outcomes through early intervention and tailored treatment.

PHONETICS AND OROFACIAL DEVELOPMENT. IS THERE A CORRELATION?

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Aim: the aim of this literature review is to assess whether different spoken languages determine such lingual pressures and positions as to influence orofacial growth.
Methods: from 1996 to the present, a literature review has been conducted on PubMed, Scopus, and ResearchGate that met the inclusion criteria: literature reviews describing the typical orofacial features of a specific language-speaking group; observational studies comparing orofacial features across multiple language-speaking groups; and observational studies on the incidence of specific malocclusions within a particular language-speaking group.
Results: a review examines the craniofacial structure of Japanese people, who are found to have a longer face and smaller anteroposterior dimensions with a retrognathic profile compared to Caucasians. Another study highlighted the relationship, among Japanese children, between tongue pressure and orofacial morphology with a prevalence of class II. These works highlight the precise difference in orofacial growth in different language. Another study, conducted on Asian army men, showed an increased prevalence of class II malocclusion. We report another example of pronunciation of Mexican mestizos that had greater protrusion of both jaws and a higher proclination of the incisors compared to Caucasians.
Conclusions: this review highlights the relationship between phoneme pronunciation and the prevalence of orofacial features associated with different ethnicities, but to better investigate this relationship, further studies would be needed.

THE IMPACT OF BREASTFEEDING METHODS ON MALOCCLUSIONS: PROTECTIVE OR RISK FACTORS? A SYSTEMATIC REVIEW

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Aim: the aim of this study is to conduct a systematic review on the connection between the development of malocclusions in the deciduous dentition and the type of lactation. The concept of functional growth is based on the principle that function stimulates organ development, and anatomical harmony coincides with functional harmony. Sucking is the baby's first coordinated muscle activity.

Methods: the review was conducted following the PRISMA guidelines. PubMed, Embase, Medline, Web of Science, EBMR, Ovid, and Cochrane Library databases were consulted using the keywords "infant" or "child", "lactation", and "malocclusion". The selected articles included Randomized Clinical Trials (RCTs), case-control studies, and cohort studies. The quality of the studies was assessed using the Newcastle-Ottawa (NOS) Scale. A meta-analysis was also performed on the selected studies to quantify the correlation between breastfeeding methods and the occurrence of malocclusions, integrating their results.

Results: a total of 279 articles were identified, of which 18 were included, excluding irrelevant or biased studies. Several studies confirm a correlation between breastfeeding type and malocclusion, especially in children with primary and mixed dentition. Breastfeeding appears to be a risk factor for malocclusions such as crossbite and palatal hypoplasia, but it seems to be protective against class III malocclusions and deep bites.

Conclusions: the duration of breastfeeding plays a crucial role: breastfeeding for six months reduces the risk of posterior crossbite and class II malocclusion, whereas bottle feeding beyond 18 months increases the risk of developing malocclusion, such as crossbite, maxillary compression, and class II canine malocclusion.

SURVIVAL OF POST-TRAUMATIC REPLANTED TEETH IN PEDIATRIC PATIENTS: A SYSTEMATIC REVIEW

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Aim: this systematic review aims to evaluate the survival rate and success of transplantation of teeth lost to trauma in the pediatric population, where retention of the traumatized tooth is critical for both functional and psychological reasons.

Methods: a systematic search was conducted across databases including PubMed, Embase, and Scopus. Inclusion criteria were focused on studies involving pediatric patients with replanted avulsed permanent teeth, excluding case reports and studies lacking sufficient survival data. Quality assessment was performed using the Newcastle-Ottawa Scale (NOS), and data were synthesized narratively due to heterogeneity in study designs.

Results: the review included 11 studies with varying follow-up durations and outcomes. The survival rates of replanted teeth varied significantly, with better outcomes observed in replanted teeth within 15 to 30 minutes. Factors such as root development stage, extraoral dry time, and the use of appropriate storage media were critical in determining the prognosis. Root resorption was a common complication, with inflammatory resorption and replacement resorption frequently reported. Immediate replantation and appropriate storage conditions were associated with higher survival rates and better periodontal healing outcomes.

Conclusions: the findings underscore the importance of timely and proper replantation techniques to maximize the survival of avulsed teeth in pediatric patients. Early replantation, use of appropriate storage media, and careful follow-up are essential for improving long-term outcomes.

EFFECTS OF ACIDIC AND SUGAR-SWEETENED BEVERAGES ON SURFACE ROUGHNESS OF GICS: A SYSTEMATIC REVIEW OF *IN VITRO* STUDIES

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Aim: sugar-sweetened and acidic beverages (SWABs) like soft drinks, energy drinks, and juices are widely consumed worldwide and are known to erode natural teeth. However, their effects on restorative materials used in pediatric dentistry, such as Glass Ionomer Cements (GICs) and Resin-Modified GICs (RMGICs), are less well understood. This review aims to assess current evidence on the impact of SWABs on these materials.

Methods: PubMed, Scopus and Embase were searched for *in vitro* studies published in English from 2010 until 10/12/2024. The primary outcome was physical change assessed through surface roughness. The methodological quality of the included studies was assessed with the QUIN tool for *in vitro* studies.
The quality of studies was assessed using the QUIN tool for in vitro research. A total of 842 articles were found; after removing duplicates, 565 were screened by title and abstract. Sixty-two were reviewed in full, and nine met the inclusion criteria.

Results: four studies with low risk of bias consistently showed that SWABs increase surface roughness in GICs and RMGICs. Conversely, studies with moderate risk of bias showed greater variability in outcomes, likely due to differences in beverage composition, test protocols, and material types. Beverages with low pH - such as orange juice, cola, and energy drinks -caused the greatest surface damage, with orange juice having the strongest effect. RMGICs showed better resistance than conventional GICs.

Conclusions: SWABs significantly compromise the surface integrity of GICs and RMGICs, highlighting the importance of cautious material selection for patients that consume these drinks frequently.

ORAL SEDATION IN PEDIATRIC DENTISTRY: A NARRATIVE REVIEW OF PHARMACOLOGICAL AGENTS SUITABLE FOR PRIVATE PRACTICE USE IN ITALY

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Aim: this narrative review examines oral sedatives used in pediatric dentistry, focusing on drugs suitable for procedural conscious sedation in outpatient private practice settings in Italy.

Methods: a literature research was conducted via PubMed and national regulatory sources to identify oral sedatives used in pediatric patients, analyzing their pharmacological profile, safety, and legal status in non-hospital dental settings.

Results: among oral benzodiazepines used in pediatric dentistry, literature reports midazolam, diazepam, triazolam and delorazepam. Midazolam, though effective and widely studied, can be used only in SSN-accredited facilities and is not permitted in private dental offices. Diazepam is available and suitable for outpatient use, though its long half-life requires caution. Moreover, AISOD guidelines established that dentists must be formed by a specific master in sedation to prescribe diazepam to children. Triazolam and delorazepam are off-label and lack sufficient pediatric data. Among antihistamines, hydroxyzine may offer sedative benefits but is off label for anxiety in children; promethazine is rarely used due to safety concerns in kids. Melatonin has shown promise in reducing preoperative anxiety but remains off-label and insufficiently validated for procedural sedation.

Conclusions: only few agents are appropriate and legally usable for pediatric oral sedation in Italian private dental settings. Oral Diazepam is the most viable therapeutic solution; midazolam is restricted to authorized offices and hydroxyzine medication even if effective is off label.

NARRATIVE REVIEW OF THE LITERATURE ON THERAPEUTIC CHOICES FOR MESIODENS

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Aim: this literature review aims to examine the therapeutic management of mesiodens, analyzing the indications for extraction and determining the ideal age for surgery, if any.

Methods: studies on the incidence of mesiodens, complications related to their presence and surgical removal, extraction indications and surgical timing were reviewed. PubMed database was used limited to publications from 1981 to 2024 and using various combinations of key terms: “mesiodens,” “treatment,” “timing extraction” and “complications” in the title, abstract, and keywords.

Results: the prevalence of supernumerary teeth varies between 1% and 3.5% in permanent dentition and are more common in males. The diagnostic method used and the study population leads to a diversification of the frequency found in the different studies in literature. Mesiodens represent about 90% of all supernumerary teeth. If left in place they may cause malocclusions, delayed eruption of permanent teeth, cysts and root resorptions. The best timing for extraction is debated: some studies recommend early intervention to minimize complications, while others suggest delayed surgery to avoid damage to developing permanent teeth.

Conclusions: mesiodens extraction is generally the recommended treatment to prevent long-term complications. Early extraction appears to be associated with fewer complications and reduces the need for orthodontic treatment. An individualized approach is essential, based on clinical and radiographic evaluation, with appropriate follow-up to monitor the eruption of permanent teeth after extraction.

CAN WE CONSIDER RAPID PALATAL EXPANSION AS A PREVENTIVE AID IN SUSPECTED SLEEP-RESPIRATORY DISORDER?

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Aim: this study aims to assess if clinical and cephalometric respiratory parameters can represent accurate indices to measure the improvement of intercepted sleep breathing disorders, in patients who need orthodontic therapy with Rapid Palatal Expansion (RPE).

Methods: 50 patients (aged 6-9 years) from the orthodontics department of the Rho Hospital (Milan, Italy), who needed RPE therapy and who showed suspected sleep breathing disorders, were included in the study. Mallampati Index and Tonsil Grading, Cephalometric Parameters including PAS (posterior airway space), MP-H, SNP-P, the HyoMental Distance (HMD) were recorded, and a questionnaire was given to the parents, regarding the child's sleep habits and any systemic consequences related to sleep disorders before treatment, after the active expansion phase and at the end of treatment.

Results: this study evaluates the reliability of clinical respiratory and cephalometric parameters for diagnosing Sleep-Disordered Breathing (SDB) in children. Research highlights a correlation between SDB and craniofacial anomalies, emphasizing the dentist’s crucial role.

Conclusions: statistical analysis shows significant post-treatment improvements ($p < 0.05$), confirmed by parental reports. Although polysomnography remains the standard, cephalometric and observational indices can aid early diagnosis. Further research is needed on long-term effects, but early intervention can prevent growth abnormalities and improve children’s quality of life.

TAURODONTISM AND PREMATURE BIRTH: A POSSIBLE CORRELATION?

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Aim: taurodontism is a rare dental anomaly characterized by an enlarged pulp chamber and shortened roots, which can influence both treatment approaches and prognosis. This case report presents the clinical and radiographic findings of taurodontism in the primary and permanent molars of two preterm-born monozygotic twin sisters.

Methods: a comprehensive clinical and radiographic evaluation, including detailed medical and dental history, was conducted.

Results: the first twin, examined at five years old, had a complete primary dentition. Clinical examination revealed multiple carious lesions and taurodontism affecting both primary and developing permanent molars. Given the high caries risk and management challenges, but the absence of pain, a minimally invasive treatment approach was adopted. This included the application of silver diamine fluoride, restorations with glass ionomer cement, and fluoride applications. The second twin, assessed one year later, was in the early mixed dentition stage and exhibited similar taurodontic features. She underwent preventive management, including sealants and fluoride applications.

Conclusions: the presence of taurodontism in both dentitions of preterm-born monozygotic twins, despite the absence of a familial history of dental anomalies, suggests a potential link between prematurity and root development abnormalities. Given the increased risk of enamel defects, delayed eruption, and structural anomalies as taurodontism, preterm children should undergo early assessment and receive preventive care to ensure optimal oral health outcomes.

DIGITAL WORKFLOW AS AN AID IN MANAGING SPECIAL NEEDS PATIENTS UNDER GENERAL ANESTHESIA

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Aim: this study investigates the use of digital workflows and technologies in diagnosing, treating, and managing dental conditions in patients with special needs undergoing general anesthesia.

Methods: digital tools such as Cone Beam Computer Tomography (CBCT), Computer Aided Design/Computer Aided Manufacturing (CAD-CAM) and Intraoral Scanners (IOS) are explored for their role in enhancing the management of special needs patients undergoing general anesthesia. The application of these technologies is explored across different stages of care: from diagnostic imaging, through treatment planning, to procedural execution.

Results: digital impressions obtained through Intraoral Scanners (IOS), Cone Beam Computed Tomography (CBCT) and the integration of these technologies provided high-resolution data that enhanced diagnostic precision and surgical planning. CAD-CAM technologies facilitated the preoperative fabrication of prosthetic devices and surgical guides.

Conclusions: the use of digital workflows optimizes outcomes and prognosis, while reducing intraoperative time, resulting in more efficient and faster procedures under general anesthesia.

IMPACT OF ENVIRONMENT ON CARIES PREVALENCE IN PATIENTS WITH CLEFT LIP AND PALATE AND HEALTHY BLOOD-RELATED CONTROLS

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Aim: to demonstrate whether cleft lip and palate can lead to higher caries experience, by analyzing caries prevalence difference between patients and their healthy siblings with a close age-gap and same diet habits.

Methods: this epidemiologic observational study included patients 3-16 years old with all types of cleft lip and palate, who had healthy siblings within the same age range. Patients were already enrolled in the multidisciplinary care program for cleft lip and palate, at Santa Chiara Hospital, and they were already orthodontic patients at our department. Patients with syndromic forms or other cranio-facial malformations were excluded. The test group included 19 patients (9 females; 10 males). The control group included 19 siblings (11 females, 8 males). An intraoral objective exam was conducted for both groups. Caries experience was measured by counting the number of cavities, fillings and lost teeth due to caries. To evaluate whether there were significant differences between the groups, the Mann-Whitney U test for non-parametric data was used. The significance level was set at $p < 0.010$. Statistical analysis was performed using the XIstat software, addinsoft.

Results: mean ages were 9,05±3,36 test group and 8,16±3,92 control group. Caries experience was 2,789±3,293 tests, and 1,474±2,796 controls; $p = 0,187$ so no statistically significant difference.

Conclusions: test group has higher caries experience due to more difficult oral hygiene, but at the same time they have more oral controls, so this can be the reason for which the difference was not significant.

ASSESSMENT OF THE RISK OF SLEEP-RELATED BREATHING DISORDERS IN YOUNG ORTHODONTIC POPULATION (7- 14 YEARS OLD) IN SOUTHERN ITALY

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Aim: to assess the prevalence of Sleep-Related Breathing Disorders (SRBD) in children undergoing orthodontic treatment in Southern Italy and analyze the prevalence of malocclusions in at-risk subjects.

Methods: a total of 364 children (7-14 years old) were examined at the Department of Orthodontics and Pediatric Dentistry of the University of Catania. Parents completed the Pediatric Sleep Questionnaire (PSQ) via QR code before the consultation. High-risk SRBD subjects were retrospectively evaluated for craniofacial characteristics and malocclusions, with cephalometric parameters recorded. Statistical analysis was conducted using chi-square tests.

Results: 9.89% of children were classified as high risk for SRBD. The incidence was higher in younger children (7-11 years: 13.74% *vs* 11-14 years: 7.76%). Boys were at significantly higher risk than girls, particularly in the 7-11 age group. No specific PSQ question was able to clearly differentiate high-risk subjects.

Conclusions: these findings highlight the importance of early screening in pediatric orthodontic patients to identify high-risk individuals and refer them to specialists for further assessment.