

## A HIGHLY FILM-FORMING GEL IN THE TREATMENT OF PAIN FROM ORAL LESIONS

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**Aim:** the aim of this study was to test the efficacy of a PVP (a highly, safe adhesive polymer with film-forming properties) and SHL (Sodium Hyaluronate Lipoate, a HA derivate with moisturizing action) gel in maintaining healthy mouth and in patients suffering from oral lesions.

**Methods:** a sample of 20 patients were enrolled in the study according to the following inclusion criteria: aged 6 to 70 years old, presence of at least one oral lesion (not necessarily caused by braces or orthodontic procedures), reporting pain and difficulty in swallowing, eating and/or drinking.

Patients were trained to apply BMG0725 gel for 14 consecutive days. They applied the product 3-4 times a day and registered their pain intensity daily using a VAS scale questionnaire.

**Results:** data were analyzed 7 and 14 days after the baseline visit. The results of our study demonstrated that topical appli-

cation of BMG0725 gel on oral ulcers not only significantly reduced the pain, but also accelerated the healing process with no systemic or local side effects both in children and adults.

The barrier effect of the components provided immediate and long-lasting pain relief from the first application; patients also indicated a sense of relief in drinking and eating and confirmed that the gel was easy to apply, tolerable and with favorable taste.

No side effect has been reported, thus confirming the safety of the gel, also in children.

**Conclusions:** BMG0725 gel was effective on pain reduction and helped the natural healing process of the lesions. The absence of side effects contributed to the optimal patient's compliance. Thanks to the presence of the cannula, gel formulation resulted more suitable on localized mouth lesions.

## A HIGHLY FILM-FORMING RINSE IN THE TREATMENT AND REDUCTION OF PAIN FROM ORAL LESIONS

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**Aim:** the aim of this study was to test the efficacy of a PVP (an highly, safe adhesive polymer with film-forming properties) and SHLF (Sodium Hyaluronate Lipoate Formate, a HA derivate with moisturizing action) mouthwash in maintaining healthy mouth and in patients suffering from oral lesions.

**Methods:** a sample of 20 patients were enrolled in the study according to the following inclusion criteria: aged 6 to 70 years old, presence of at least one oral lesion (not necessarily caused by braces or orthodontic procedures), reporting pain and difficulty in swallowing, eating and/or drinking.

Patients were trained to apply BMG0726 mouthwash for 14 consecutive days. They applied the product 3-4 times a day and registered their pain intensity daily using a VAS scale questionnaire.

**Results:** data were analyzed 7 and 14 days after the baseline visit. The results of our study demonstrated that topical appli-

cation of BMG0726 mouthwash on oral ulcers not only significantly reduced the pain, but also accelerated the healing process with no systemic or local side effects both in children and adults. The barrier effect of the components provided immediate and long-lasting pain relief from the first application; patients also indicated a sense of relief in drinking and eating and confirmed that the mouthwash was very well tolerated and with favorable taste. No side effect has been reported, thus confirming the safety of the mouthwash, also in children.

**Conclusions:** BMG0726 mouthwash was effective on pain reduction and helped the natural healing process of the lesions. The absence of side effects contributed to the optimal patient's compliance. The rinse presentation obtained better results in patients suffering from diffuse mouth lesions, as its formulation guaranteed a proper creation of the barrier throughout the oral cavity.

## A HIGHLY FILM-FORMING SPRAY IN THE TREATMENT AND REDUCTION OF PAIN FROM ORAL LESIONS

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**Aim:** the aim of this study was to test the efficacy of a PVP (an highly, safe adhesive polymer with film-forming properties) (and SHLF (Sodium Hyaluronate Lipoate Formate, a HA derivative with moisturizing action) spray in maintaining healthy mouth and in patients suffering from oral lesions.

**Methods:** a sample of 20 patients were enrolled in the study according to the following inclusion criteria: aged 6 to 70 years old, presence of at least one oral lesion (not necessarily caused by braces or orthodontic procedures), reporting pain and difficulty in swallowing, eating and/or drinking. Patients were trained to apply BMG0727 spray for 14 consecutive days. They applied the product 3-4 times a day and registered their pain intensity daily using a VAS scale questionnaire.

**Results:** data were analyzed 7 and 14 days after the baseline visit. The results of our study demonstrated that topical appli-

cation of BMG0727 spray on oral ulcers not only significantly reduced the pain, but also accelerated the healing process with no systemic or local side effects both in children and adults.

The barrier effect of the components provided immediate and long-lasting pain relief from the first application; patients also indicated a sense of relief in drinking and eating and confirmed that the spray was very well tolerated and with favorable taste. No side effect has been reported, thus confirming the safety of the spray, also in children.

**Conclusions:** BMG0727 spray was effective on pain reduction and helped the natural healing process of the lesions. The absence of side effects contributed to the optimal patient's compliance. The spray presentation could easily reach lesions on the back of the mouth and, thanks to its nozzle, resulted the best option for children.

## IMPACTION OF THE COMPLETE PERMANENT DENTITION IN A PATIENT WITH PSEUDOHYPOPARATHYROIDISM

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**Aim:** to describe a case of impaction of the complete permanent dentition in a 35-year-old female patient with pseudohypoparathyroidism (PHP).

**Methods:** a 35-years old female patient, born in Dominican Republic, referred to the UOC Dental Clinic of Hospital "A. Gemelli, Università Cattolica del Sacro Cuore" of Rome (Italy). At extraoral examination, the patient exhibited a high forehead and prominence of the metopic suture, as well as hypoplastic nasal septum and full lips. Brachydactyly of the fingers and the toes, *acanthosis nigricans* and numerous skin tags on the trunk and face were also found. At intraoral examination, the patient was completely edentulous and showed a skeletal class III relationship, due to maxillary hypoplasia. The orthopantomographic radiograph showed complete impaction of the per-

manent dentition and irregular crown and root development of the impacted teeth. Biochemical exams showed high values in parathormone (PTH: 83.7 pg/mL), but normal levels in calcium (serum Calcium: 9.7 mg/dL) since the patient was in therapy with calcium carbonate and calcitriol.

**Results:** the clinical and biochemical features appeared to be compatible with the suspect of pseudohypoparathyroidism. From a dental perspective, PHP was associated with numerous dental anomalies, among which complete impaction of teeth has not been described yet.

**Conclusions:** according to the present case-report, a deficiency in parathyroid function may be responsible for disruptions in the biological processes associated with tooth development. However, more cross-sectional studies in this field are required.

## ORAL HEALTH IN ELDERLY RESIDENTS OF RSA: NEED FOR TRAINING FOR CARE STAFF

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Proper oral care for elderly residents in RCFs ensures their ability to eat properly, preventing systemic deterioration due to malnutrition, avoiding the need for difficult dental treatments in the facilities, and, importantly, maintaining a good level of social interaction.

This study aims to assess the knowledge of nurses and socio-healthcare workers regarding oral hygiene in the elderly and potential complications.

Investigations were conducted at Elderly Residences managed by ASP PROGETTO PERSONA, an Inter-Municipal company providing socio-health services at four locations in Reggio Emilia. Two data collection tools were developed: a clinical record noting the oral health status following objective examination of 25 seniors, and a questionnaire consisting of closed

and open-ended questions administered to nurses and socio-healthcare workers employed by the company.

The questionnaire revealed the educational needs of staff regarding oral health. Correct instructions for managing the oral health of elderly residents were provided during oral cavity examinations. Based on the collected data, it is beneficial to provide educational support regarding the importance of oral health and its proper management for healthcare personnel, particularly nurses and socio-healthcare workers who regularly interact with elderly patients and their healthcare needs.

The oral care management procedure implemented by ASP PROGETTO PERSONA, though developed by healthcare professionals, could be enhanced through collaboration with a specialized figure such as a dental hygienist.

## ROLE OF CHILDREN AS MULTIPLIERS OF WELL-BEING

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The aim of this study is to assess students' communicative effectiveness towards their families, as disseminators of health prevention concepts explained at school.

The broader objective is to understand how to reach as many people as possible to spread health prevention throughout the community.

In recent years, oral health has shifted from being solely within the purview of dentists to a multidisciplinary approach within the medical field, involving a team of specialists from various branches of medicine. In this context, the role of the dental hygienist is crucial, both as an initial screener for patients and as a promoter of holistic health habits. The thesis will analyze collected data, with specific objectives:

- 1) assessing the initial knowledge of students and their families on oral health issues and its influence on systemic pathologies;
- 2) collecting and processing data from the questionnaires provided;
- 3) promoting proper oral health levels among students in local primary schools through correct guidance and instruction;
- 4) assessing the knowledge acquired after classroom lessons and evaluating resulting benefits.

The obtained results demonstrate that it is vital to create educational support regarding the importance of oral health and hygiene maintenance, involving younger generations in supporting community well-being.

## ATTITUDES OF DENTAL STUDENTS TOWARDS HIV PATIENTS: A SURVEY AMONG ITALIAN UNIVERSITIES

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**Aims:** to assess the attitude of Italian dental students towards HIV-infected patients.

**Methods:** the study was an observational multicentric survey on a population of dental students belonging to 19 Italian Dental Schools. The questionnaire was structured into four sections, evaluating personal demographic data, the relationship between students and HIV-positive patients.

the student's knowledge of the HIV infection and the application of the preventive operative protocols.

**Results:** four hundred and seventy questionnaires had been analyzed. In total, 32 students had discriminatory attitudes towards HIV+ patients. The frequency of requests to treat HIV positive patients was higher in the universities of Northern Italy ( $\chi^2$  test  $p = 0,001$ ). The only variable related to the adoption

of discriminatory behavior was having been asked to treat the patient: OR for first operators: 43.9, 95% CI: 5.9–327.8,  $p = 0.009$ ; OR for second operators: 13.4, 95% CI: 1.47–121.7,  $p = 0.02$ ). Furthermore, who treated HIV+ patients, the discriminatory behaviors were correlated with stress perception during the procedure (ANOVA test  $p = 0.008$ ). The majority of the students showed a good knowledge about HIV infection.

**Conclusions:** the students' preparation regarding HIV infection is valid and sufficient to allow the treatment of these patients without discrimination. Even among students who were not asked to treat patients HIV+, there is a prevalence of will to treat this category of patients. These two considerations indicate that the practical training of dental students allows the students to feel confident even in treating HIV+ patients.

## EVALUATION OF ACOUSTIC DISCOMFORT DURING PERIODONTAL TREATMENTS: *IN VIVO* STUDY

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**Aim:** evaluate the noise exposure of dental hygienists and patients in a university clinic and assess the degree of perceived acoustic discomfort.

**Methods:** 65 dosimetric personal and environmental phonometric measurements were carried out for 25 minutes (Larson Davis SoundTrack LxT) during the dental hygiene sessions. 57 questionnaires was also administered to the students and to the patients of the university clinic in order to characterize the degree of perceived acoustic discomfort.

The results were statistically analysed according to clinic layout and type of instrumentation used. The Mann-Whitney test was then used to compare the results. One Way ANOVA test and Post Hoc test ( $p < 0.05$ ) to determine the presence of any statistically significant differences between groups.

**Results:** the noise exposure levels measured are below the lower regulatory action values (LAeq = 77,2 dB(A); LCpeak = 112 dB(C)). No differences in sound levels are observed between left and right ears. Higher peak levels of annoyance was related to the noise emitted by the US instruments and the aspirator in open conformation workstation.

The questionnaire highlights that the exposure of noise during the performance of the task is related to a perception of annoyance, with the majority believing that noise increases the fatigue of the task and decrease concentration.

**Conclusions:** exposure to noise during dental hygiene sessions can be a source of discomfort, accentuating the fatigue of the task, interfering with communication and reducing the ability to concentrate during dental hygiene sessions.

## PATIENTS UNDER LD-BMAS FOR CTIBL: A MULTICENTER STUDY ABOUT AN EMERGING MRONJ RISK GROUP

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**Aim:** to describe the features of 17 patients under low dose of LD-BMA for CTIBL affected by MRONJ, comparing them with 88 patients assuming LD-BMAs for CTIBL which not developed MRONJ.

**Methods:** included patients were enrolled at 2 Italian centers: Oral Medicine Unit “V. Margiotta” of the University Hospital “P. Giaccone” in Palermo and Oral Medicine Unit of the “Sapienza” University in Rome. Patients underwent clinical and radiological examination. MRONJ was diagnosed and staged according to the Italian SIPMO-SICMF recommendations (2020) based on clinical-radiological signs.

**Results:** among patients that developed MRONJ, 13 received bisphosphonates (BP) and 4 denosumab (DNB); in the control group, 53 patients received BPs and 35 DNB. LD-BMA exposure at the time of MRONJ diagnosis was less than 3 years in

6 cases, between 3 and 5 years in 6 cases, and more than 5 years in 5 cases. LD-BMA exposure in patients that did not develop MRONJ was less than 3 years in 61 cases, between 3 and 5 years in 16 cases, and more than 5 years in 11 cases. Regarding MRONJ stage, 4 patients were diagnosed in stage I, 8 in stage II, and 5 in stage III.

**Conclusions:** in this preliminary study, patients undergoing LD-BMA for CTIBL developed MRONJ after approximately 3 years of LD-BMA exposure. The prevalence of advanced MRONJ stages at the time of diagnosis highlights a gap in prevention, possibly due to the lack of awareness of MRONJ risk in this category of patients. Given the potential switch to HD-BMA increasing MRONJ risk, a multidisciplinary approach is crucial for effective prevention in this group.

## THE ELDERLY PATIENT: EPIDEMIOLOGICAL STUDY OF ORAL HEALTH STATUS IN NURSING HOME RESIDENTS

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**Aim:** the number of elderly people is growing fast. The main oral problems for elderly people are: edentulism, periodontitis, cavities, xerostomia and mucosa lesions. Not self-sufficient elderly patients may not be able to maintain safe oral hygiene conditions. The aim of the study is to collect the oral health data of elderly people living in nursing homes.

**Methods:** 275 people took part in the study, from seven different residential homes. Were considered: the number of teeth and residual roots, the presence of fixture and prostheses, the presence of visible plaque deposits (codified in >50% or <50% of all the examined surfaces), the presence of mucosa lesions and, where possible, the PSR index. Prostheses were categorized according to their width, their type and their support.

**Results:** totally edentulous people are the 42%. The 65% of the elderly has a prosthesis on the upper maxilla, 53% on the lower. The prosthesis mainly used is the complete mobile denture. The 9% of the patients has fixtures. The 9% is totally edentulous and has not any dentures. The 58% of the total has visible deposits of plaque on more than half of the surfaces.

**Conclusions:** we should promote prevention policy and oral health care lifelong. It is necessary to improve oral health of the elderly living in nursing homes. To reach this goal these centers should collaborate with specialists, as dentists and dental hygienists, who can train the caregivers to improve the oral hygiene conditions of the patients and can solve their dental issues.

## METAGENOMIC CHARACTERIZATION OF ORAL AND CARDIAC MICROBIOTA IN CARDIAC SURGERY PATIENT

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**Aim:** (i) evaluate the prevalence of periodontal disease in patients necessitating aortic valve replacement and (ii) investigate the presence of oral pathogens in aortic valve specimens, comparing them to the microorganisms identified in the oral cavity.

**Methods:** 26 patients (15 men and 11 women) were scheduled to undergo cardiac surgery the day before their examinations. Radiographic and periodontal examinations were conducted. Dental plaque or salivary samples were collected, and valve specimens were collected during surgical aortic valve replacement. These specimens were analyzed for pathogen detection through microbiological 16S rRNA gene sequencing. The bacteria found in the plaque samples and valve specimens were correlated with patients' oral and periodontal conditions.

A qualitative comparison was made between the oral and cardiac profiles of the microorganisms detected.

**Results:** 19 patients were assessed for soft tissue conditions, of which 8 were edentulous. Specifically, 12 individuals exhibited moderate periodontitis, while 3 had severe periodontitis. 9 valves were detected to contain oral and periodontopathic bacterial DNA, indicating the presence of these microorganisms in valvular tissue appears to be not coincidental.

**Conclusion:** this study suggests a direct association between the presence of these microorganisms and the increased vascular bed in periodontal pockets. Furthermore, the presence of periodontopathic bacteria in valve tissue appears to nurture the hypothesis that they could play a role in the development of cardiovascular diseases.

## SLUM AND ORAL HEALTH: A PROJECT FOR THE NAIROBI STILL I RISE SCHOOL STUDENTS

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**Aim:** to promote oral health, provide preventive/therapeutic treatments, and obtain relevant data on the oral health status of the children attending the Still I Rise School in Mathare, Nairobi, Kenya.

**Methods:** the research was conducted on a convenience sample of 144 students aged 9-14. Before the visit ( $T_0$ ), demographic and anamnestic data were collected, and a questionnaire regarding oral hygiene and dietary habits was administered, which was again proposed 6 months later ( $T_1$ ). Caries lesions (DMFT and ICDAS), development defects of enamel (m-DDE index), and oral hygiene (OHI-S) data were collected. Preventive and therapeutic care were also provided.

**Results:** about oral hygiene, in 45.80% was good, in 30.50% was sufficient and in 23.60% was poor. 50% of the students were caries-free. Among the other half, 70.80% had caries ICDAS 1-3. Fluorosis was the most common defect of the enamel (50.70%). Professional cleaning and sealants were the most frequently provided preventive therapies, while non-invasive caries therapy was the most performed (97.90%). At  $T_0$ , 56.20% of the students started to brush  $\geq 2$  times/day, increasing to 84.70% at  $T_1$  ( $p < 0.001$ ). The percentage of students consuming sugary foods and drinks everyday also decreased at  $T_1$  ( $p = 0.194$ ).

**Conclusions:** oral health school programs effectively improve oral health, especially in disadvantaged countries.

## ORAL HEALTH STATUS IN BURUNDI SCHOOLCHILDREN POPULATION. A CROSS-SECTIONAL STUDY

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**Aim:** this study describes the oral health status among schoolchildren in Burundi, using the dmft/DMFT index.

**Methods:** the survey was designed as a cross-sectional population-based, following the WHO methodology for oral health surveys. Oral examinations were conducted in school classrooms, using a dental mirror, a probe, and a headlight. The status of dentition was recorded, encompassing decayed (d/D), missing (m/M), and filled (f/F) teeth, with subsequent calculation of the dmft/DMFT index for each participant. Differences between variables were assessed through one-way ANOVA. The analysis was conducted to explore the associations between total caries experience and gender, age groups, living area, and geographical provinces.

**Results:** a total of 1902 children were examined: 1007

(52.94%) six-year-olds and 895 (47.06%) in the older age group (12 years old). Statistically discrepancies have been found, in terms of caries and dmft/DMFT, among age groups, residential areas, and geographical regions (dmft/DMFT d/D subgroup  $p < 0.01$ ), except for DMFT by gender. The ORs estimated by total caries experience showed a protective effect for the 12-year old subjects and those living in southern provinces: OR of 0.52 (95%CI 0.43–0.64) and OR of 0.26 (95%CI 0.21–0.32).

**Conclusions:** dental caries in Burundi remains a major problem affecting the general health and well-being of the population. A comprehensive strategy is needed that includes strengthening oral health infrastructure, advancing oral health education, ensuring accessible dental services and promoting healthier eating habits.

## CONSEQUENCES OF LACK OF ORAL HYGIENE AND PREVENTION

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**Aim:** the aim of this cross-sectional study is to evaluate the importance of oral hygiene as a primary preventive measure for maintaining general health and to assess the prevalence of common oral diseases, including dental caries, gingivitis, and periodontitis, among the population.

**Methods:** participants included individuals of all ages and demographics, recruited from various settings such as dental clinics, community centers, and educational institutions. Oral hygiene practices, including frequency of tooth brushing, use of dental floss, and attendance of dental check-ups, were assessed through structured interviews or surveys. Clinical examinations were conducted to assess the presence of dental caries, gingivitis, and periodontitis. The prevalence of dental caries was determined using the DMFT index. Gingivitis and periodontitis were clinically diagnosed based on established criteria. Descriptive statistics were used to summarize the

prevalence of oral diseases, and inferential statistics may have been employed to assess associations between oral hygiene practices and disease outcomes.

**Results:** dental caries was found to be the most widespread infectious process, gingivitis and periodontitis affected approximately 10–15% of the population. Poor oral hygiene practices, such as infrequent tooth brushing and lack of dental check-ups, were associated with higher prevalence of oral diseases, including dental caries, gingivitis, and periodontitis.

**Conclusions:** this study highlights the critical importance to promote regular dental check-ups and adherence to proper oral hygiene practices are essential for preventing common oral diseases, including dental caries, gingivitis, and periodontitis, and for improving overall oral health and well-being among the population.

## PERIODONTAL INFLAMMATION IN SUBJECTS WITH EARLY STAGES OF ALZHEIMER'S DISEASE AND MCI

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**Aim:** to find a correlation between oral cavity inflammation assessment, calculated with P.I.S.A. Score, and cognitive impairment value assessed with MMSE scale tests, to confirm periodontitis as a risk factor for AD and MCI and provide for proper prevention and treatment standards.

**Methods:** patients with an initial diagnosis of AD and MCI, balanced according to confounding variables (age, gender, diabetes mellitus, alcohol consumption, smoking, cultural level, ethnicity), underwent periodontal probing and subsequent calculation of P.I.S.A. Score (Periodontal Inflamed Surface Area) after cognitive assessment testing by MMSE (Mini-Mental State Examination) scale. Finally, the data were reprocessed to assess

whether a higher index of periodontal inflammation was coupled with a reduced score on the MMSE cognitive test.

**Results:** preliminary data show some degree of correlation between the increased degree of periodontal inflammation following the P.I.S.A. Score, and a lower score obtained from the cognitive test with MMSE scale, with potential uncertainty of the data in patients with less than 8 teeth.

**Conclusions:** a correlation between periodontal inflammation index and clinical cognitive picture of AD seems to exist, with need for further study including AD-related measurable markers, and relative variation of these markers when proper preventive practices and oral hygiene instruction are applied.

## INTEGRATED APPROACHES BETWEEN SLTs AND DENTISTS TO ENHANCE PATIENT CARE

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**Aim:** this study investigates the collaborative dynamics between Speech-Language Therapists (SLTs) and Dentists, highlighting the mutual benefits and challenges of their interactions. The research aims to understand how these professionals can synergize their efforts to improve outcomes for patients with both communicative and oral health issues.

**Methods:** a questionnaire-based study was conducted among 82 Dentists and 70 SLTs. The survey collected data on demographic details, professional practices and the nature of interdisciplinary interactions. Statistical analysis was performed to evaluate the patterns and efficacy of these collaborations.

**Results:**

- 84% of pediatric and orthodontic dentists highlights frequent interactions with SLTs over dysfunctional swallowing and language disorders.

- 37% of SLTs regularly engage with Dentists.
- Both groups acknowledge the benefits of collaboration; however, the frequency and methods of communication vary significantly, with most sharing updates monthly or at the start/end of treatment phases.
- Statistically significant benefits were reported in patient outcomes when collaborative care was implemented effectively.

**Conclusions:** interdisciplinary collaboration between SLTs and Dentists is crucial for addressing the complex needs of patients with orofacial and communicative disorders. While the benefits of such partnerships are well recognized, the study identifies critical areas for improvement, particularly in standardizing communication protocols to maximize patient care efficiency.

## THE CORRELATION OF FIBROMYALGIA ASSESSMENT STATUS WITH OROFACIAL DISORDERS: ACROSS-SECTIONAL STUDY

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**Aim:** this study examines the prevalence and severity of orofacial disorders in patients with Fibromyalgia Syndrome (FMS). The research assesses the correlation with the Fibromyalgia Assessment Status (FAS). The goal is to improve clinical approaches to these patients.

**Methods:** a cross-sectional study was conducted using a structured questionnaire focused on the correlation between FMS and orofacial problems. The research involved 107 rheumatology patients diagnosed with FMS. Statistical analyses, including Spearman's correlation, were utilized to investigate the relationships between FAS scores and various orofacial symptoms.

**Results:**

- 89.7% of patients had facial muscle pain, significantly correlated with FAS scores ( $p < 0.001$ ).

- 60.4% reported gingival bleeding during oral hygiene, which was statistically significant with higher FAS scores ( $p < 0.05$ ).
- 45.3% noticed temporomandibular joint sounds, significantly associated with FAS scores ( $p < 0.001$ ).
- 71% ground their teeth at night and 31.4% during the day, with night grinding significantly correlated with higher FAS scores ( $p < 0.05$ ).
- 98.1% woke up with facial muscle pain or fatigue and suffered from cervical pain. Both data are significantly correlated with higher FAS scores ( $p < 0.001$  for both).

**Conclusions:** the outcomes demonstrate that as the FAS increases, the likelihood of developing orofacial disorders also increases among FMS patients. This highlights the importance of a multidisciplinary treatment approach.

## WHITENING AND ANTI-STAIN EFFICACY OF OROMUCOSAL PREPARATIONS

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**Aim:** evaluation of the whitening efficacy and anti-stain capacity of some oromucosal preparations (gel or mouthwash) based on hydrogen peroxide ( $H_2O_2$ ) 0.1% and 1.8% or chlorhexidine gluconate 0.2% (CHX).

**Methods:** divided 18 permanent human dental elements into two equal portions and randomly assigned 30/36 dental samples to five study groups. Then, teeth have been treated every 12 hours for 6 days with one of the oromucosal preparations (0.5 cm of gel or 10 ml of mouthwash), assigned to as follows: a one group (G): G1 Aa: 1.8 %  $H_2O_2$  gel (BMG0702); G2 Ab: 0.1 %  $H_2O_2$  gel (BMG214IGEL04); G3 Ba: 1.8 %  $H_2O_2$  mouthwash (BMG0703A); G4 Bb: 0,2% CHX mouthwash + ADS; G5 Ca: 0,2% CHX mouthwash.

**Results:** the mouthwash with 1.8%  $H_2O_2$  (G3-BMG0703A) exhibited the highest whitening and anti-staining power, with  $\Delta E$

$>3$  in all treated samples even after two applications ( $T_1$ ) and an average improvement of 13.5 shades from  $T_0$  to  $T_4$ . Additionally, the resolution of stains was observed as early as  $T_1$  in all four samples that had stains at  $T_0$ . Following in whitening and anti-staining efficacy are the gel formulations with 1.8%  $H_2O_2$  (G1-BMG0702) and the gel formulation containing 0.1%  $H_2O_2$  (G2-BMG214IGEL04). The mouthwashes containing 0,2% CHX + ADS (G4) and 0,2% CHX (G5) did not demonstrate whitening or anti-staining capabilities, with tones and stains remaining unchanged from  $T_0$  to  $T_4$ .

**Conclusions:** the mouthwash with 1.8%  $H_2O_2$  (BMG0703A) exhibited greater whitening and anti-staining power compared to other products containing 0,2% CHX, while no whitening or anti-staining capability was observed in G4 and in G5 treated with 0,2% CHX.

## WHITENING AND STAIN REMOVING ACTION OF SOME CHLORHEXIDINE MOUTHWASHES

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**Aim:** evaluate the whitening and stain removing power of some 0.2% Chlorhexidine Gluconate (CHX) mouthwashes.

**Methods:** 18 permanent human dental samples were assigned to one of the three groups considered in the study (Cb, Bb, Ca) and kept in physiological water at 37°C, for 24 hours; each specimen was treated every 12 hours for 6 days with 10 ml of one of the three mouthwashes assigned to following group:

Group Bb, 0,2% CHX mouthwash + ADS.

Group Ca, 0,2% CHX mouthwash.

Group Cb, 0,2% CHX mouthwash + 4-Hexylresorcinol (4-Hx).

**Results:** the group treated with 0,2% CHX + 4-Hx mouthwash (Cb) showed the best whitening and staining effect, with  $\Delta E > 3$

(color difference before and after treatment) in 5/6 of the treated samples and 9 tones of average improvement from  $T_0$  to  $T_4$ . The groups treated with 0,2 % CHX + ADS (Bb) and 0,2% CHX (Ca), did not show whitening ability or stain-removing ability from  $T_0$  to  $T_4$ .

**Conclusions:** this study evaluated the whitening and anti-staining power of some mouthwashes containing 0,2% CHX, finding that only in the Cb group, treated with the mouthwash 0,2% CHX + 4-HX, there was an improvement of 9 shades in the color of the treated samples. Additionally, no new extrinsic stains were observed on the same samples from  $T_0$  to  $T_4$ .

## ECO-FRIENDLY DENTISTRY: COLD EXTRACTION SYSTEM OLIVE WASTEWATER APPLICATIONS IN ORAL HEALTH

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**Aim:** natural products play a crucial role in the discovery of new drugs, especially in addressing the urgent need to identify bioactive compounds that can improve oral health. Applying treatments based on the circular economy approach and the concept of reusing “waste” presents a competitive and innovative option for agro-food and medical companies to reduce cost management and environmental impact. Among the most commonly applied systems for reusing olive mill phenolic fractions wastewaters from the cold extraction system (OPWC), the focus is on extracting bioactive compounds for various medical applications. The aim of this study is to evaluate the effect of OPWC, on *Streptococcus mutans* (*S. mutans*) strain (ATCC 35668).

**Methods:** the total phenolic content extracted from olive-oil

production wastewater was quantified according to our previous experience in the field. The bactericidal activity against biofilm-embedded of OPWC on the growth of *S. mutans* was evaluated using a standard methodology.

**Results:** the bactericidal activity of OPWC against the biofilm-embedded caries pathogen was investigated. The reduction of *S. mutans* in viability was time and dose dependent.

**Conclusions:** eco-friendly dentistry is crucial for reducing the environmental impact of dental practices, towards sustainable solutions. This includes minimizing waste, using environmentally friendly materials, and adopting practices that promote ecological balance. By embracing eco-friendly dentistry, practitioners can contribute to preserving the health of both their patients and the planet.

## IMPACT OF ORAL HEALTH INDICATORS ON BONE MINERAL DENSITY DISORDERS IN OLDER AGE

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**Aim:** to investigate the relationships between different oral health indicators and a set of outcomes linked to bone mineral density disorders in older adults, exploring their multifaceted interplay.

**Methods:** a systematic review of the literature using six different electronic databases was conducted. Minimum age of 60 years was the main inclusion criterion. The study is registered as a priori protocol on PROSPERO (CRD42023403340).

**Results:** five different indicators of poor oral health [number of teeth, periodontal disease, general oral health (dental caries prevalence and dental treatment needs), masticatory function, and occlusal force] were found related to three outcomes linked to bone mineral density disorders (osteoporosis, fractures, and decreased bone mineral density), regardless of the

adopted assessment tools. Two independent researchers assessed the eligibility of 19,362 records against the inclusion criteria and found only 12 fitting the eligibility requirements. The number of teeth was negatively associated with fractures and decreased bone mineral density, while periodontal disease was positively associated with osteoporosis and decreased bone mineral density. Masticatory function was associated only with osteoporosis, while general oral health was associated only with fractures and occlusal force only with bone mineral density.

**Conclusions:** the present findings could help to assess the contribution of each oral health indicator to the development of bone mineral density disorders in older age.

## CORRELATION BETWEEN DIABETES MELLITUS AND ORAL HEALTH

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**Aim:** the main objective of the study is to evaluate the correlation between diabetes mellitus and oral health and its principal manifestations and implications in the oral cavity.

**Methods:** a search was carried out on the following databases: Pubmed, Google scholar and Scopus including articles written in English and published after the year 2013. Articles on studies done on animals or on patients with other pathologies were excluded. The following key words were used in the research: Diabetes Mellitus, Prevention, Periodontal Disease and Oral Manifestations.

**Results:** the results showed a close correlation between diabetes and oral problems such as periodontitis, a gum inflam-

mation that affects the supporting tissues of the tooth; when left untreated it impairs the stability of the tooth elements and lead to their loss. In addition, diabetes caused a reduction in saliva, which plays a vital role in protecting the mouth due to its antibacterial action, leading to a faster proliferation of harmful bacteria in the oral cavity responsible for tooth decay. Filled teeth, a sign of pre-existing carious diseases, were also greater in quantity than the teeth of people without diabetes.

**Conclusions:** in conclusion, the study highlights a general deficit of oral hygiene in diabetic patients. In particular, it relates diabetes mellitus with an increase in caries index, in periodontal pathology, xerostomia and tooth loss.

## BRUXISM AND BOTULINUM INJECTION: CHALLENGES AND INSIGHT

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**Aim:** bruxism, characterized by teeth grinding and clenching, presents management challenges. This study evaluates the efficacy, challenges, and insights of botulinum injections for bruxism.

**Methods:** a systematic review compiled data on botulinum injections' outcomes in bruxism treatment. PubMed, Scopus, and Web of Science were searched for relevant studies, including randomized controlled trials and narrative reviews.

**Results:** studies show varied outcomes in botulinum injections

for bruxism. While some report symptom improvements, others note challenges like treatment response variability and adverse events. Gaps include standardized protocols and long-term data.

**Conclusions:** despite challenges, botulinum injections offer promise for bruxism management. Further research is needed for optimal protocols, safety, and long-term efficacy. Understanding this landscape will aid clinicians and researchers in improving patient care.

## BENEFITS OF ANTIOXIDANT ON ORAL HEALTH. A SYSTEMATIC REVIEW

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**Aim:** in recent years, particular attention has been paid to the correlation between oxidation-reduction mechanisms and human health. In this focused review, we aim to map the scientific literature on oxidative stress related to the oral microbiota and the use of natural antioxidants to counteract it, to evaluate the volume, nature, characteristics and type of studies available to date and to suggest possible gaps that will emerge from the analysis.

**Methods:** a bibliographic search was performed on PubMed, Scopus and Web of Science databases to evaluate the role of natural antioxidants on oral health. The inclusion criteria for the research were: year of publication from 1 January 2013 to 1 March 2023 and english language. A total of 1815 articles were found regarding our topic, of which 18 were selected for qual-

itative analysis.

**Results:** the field of study of nutraceutical has found antioxidant capacity in substances such as vitamins A, B, C, E, coenzyme Q-10, selenium, flavonoids, lipoic acid, carotenoids and lycopene contained in some foods.

**Conclusions:** nutraceuticals aims to improve human health through biochemical interactions. Antioxidants, organic or synthetic, can prevent disease early and work best when present in high concentrations. Further research with larger case studies and cross-sectional studies is needed to clarify the conflicting findings.

Basic research cannot ignore clinical/dental feasibility and the study of the microenvironment is a path towards new discoveries.

## IMPACT OF DRUG THERAPY IN THE DEVELOPMENTAL ASTHMATIC SUBJECT ON SALIVARY CHARACTERISTICS

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**Aim:** children with asthma are exposed not only to the effects of the disease but also to the drugs used to treat it. In fact, antiasthmatic drugs have several modalities in increasing the risk of the occurrence of dental caries. In particular, these have a relatively low pH (5.5), may contain sweeteners such as lactose monohydrate to improve the taste of the drug, or both. Frequent consumption of these inhalers in combination with reduced saliva secretion increases the risk of dental caries.

**Methods:** the study sample will consist of 40 patients, aged 6 to 14 years, divided into two groups: the control group (n 20) consisting of healthy children and the experimental group consisting of children with mild to moderate asthma (n 20). In both groups of participants, DMFT index, plaque index value and

hygiene-dietary habits will be assessed using validated questionnaires. Then the two groups of patients will be invited to undergo salivary testing. Special kits will be used to analyze the flow, viscosity and consistency of uninduced saliva; study the pH of resting saliva; and analyze the amount of induced saliva the patient is able to produce and the buffering capacity of saliva itself.

**Results:** asthmatic patients may be at higher risk of developing carious and periodontal lesions, this highlights the importance for dentists in being vigilant and recognizing the correlation between asthma and oral health problems.

**Conclusions:** early diagnosis, and prevention protocols can help minimize the risk of developing carious disease and reduce the occurrence of more severe clinical scenario.

## PREVENTION OF CARIES IN THE DEVELOPMENTAL AGE: PROJECT IN PRIMARY SCHOOL OF NORTHERN ITALY

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**Aim:** the aim of our study was to investigate prevalence and severity of childhood caries (CC) in a sample of children in Northern Italy and to identify factors that may be related to this condition.

**Methods:** parents of all children were invited to participate filling out a structured self-administered questionnaire, and after having returned the informed consent form an oral examination of the child was performed at school. The questionnaire was used to collect the oral hygiene and food habits of children (KidMed). Next, dental hygienists and nutritionists organized training sessions at school about correct oral hygiene and eating habits (in particular to reduce the sugar consumption). The WHO caries diagnostic criteria for deciduous decayed, missing and filled teeth (dmft) were used to record CC

and the measurement of oral hygiene level was performed using the plaque index (IP).

**Results:** 574 children participated in the study (children aged 6-10 years), with a mean dmft score of 1.2 and IP index of 74%. Only 79% of children have already done a dental visit. Surprisingly 12% use an adult toothbrush and only 66% use a fluoride toothpaste. For food habits, only 8% have a strong adherence of Mediterranean Diet.

**Conclusions:** our results demonstrate that even in Western countries CC represents a significant burden in school children and that most of the known modifiable associated factors regarding feeding practices and oral hygiene are still very spread in the population.

## THE ROLE OF DENTAL HYGIENIST IN THE MANAGEMENT OF ADULT HEMATO-ONCOLOGICAL PATIENT

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**Aim:** the collaboration with the Hematology Dep. of IRCCS San Gerardo dei Tintori in Monza aims to improve the oral health conditions of patients by implementing preventive measures, in order to underline the value of the dental hygienist within the medical team.

**Methods:** the study is conducted on adult patients hospitalized in the Hematology Dep., with signed informed consent. Following a dental assessment, a professional oral hygiene session is performed by the dental hygienist, during which data related to the pathology and ongoing treatment are collected, along with information on oral health conditions and oral hygiene indices. Patients are educated and motivated regarding oral conditions resulting from their health status and thera-

peutic regimen, and are followed up during hospitalization.

**Results:** the collaboration led to a general improvement in the analyzed indices, resulting in a reduction from time  $T_0$  to time  $T_2$  of the plaque index by 0.98 points, while for the bleeding index, a decrease of 30% was observed. Therefore, we can affirm that the obtained results led to a reduction in the risks of complications and an overall improvement in oral health conditions.

**Conclusions:** the multidisciplinary approach in the treatment of hematologic patients represents an essential strategy to ensure comprehensive and targeted care.

Collaboration among healthcare professionals is fundamental to improve the quality of life of patients, reduce oral complications, and promote a more effective healing process.

## CLINICAL AND MICROBIOLOGICAL EVALUATION OF THE ORAL CAVITY IN IN-PATIENTS WITH DYSPHAGIA

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**Aim:** the purpose of this preliminary study is to investigate the effect of enteral feeding with NG tube on oral microbial health and population in hospitalized patients with post-stroke dysphagia.

**Methods:** 30 patients from Neurology and Stoke unit divisions were included with random sampling. The sample was divided into two groups: "case," with enteral feeding; and "control," with independent feeding. Each patient underwent oral health evaluation with Oral Health Assessment Tool (OHAT), and quantitative microbiological cultural examination with oral swab. The parameters investigated were assessed at the time of admission and after 6 days. The results obtained were compared with anamnestic and prognostic data. Descriptive statistics of the variables considered were calculated with significance of  $p < 0.05$ .

**Results:** the results obtained show a deterioration in oral health in both groups, marked in patients with high values according to the National Institutes of health Stroke Scale (NIH-SS). It was also observed that the microbiological population experienced important changes in NG tube patients; an increase in fungi, Gram-negative anaerobes and Enterobacteriaceae, microorganisms that are potentially pathogenic and often related to pulmonary infections, was found.

**Conclusions:** stroke patients with dysphagia have poor oral hygiene resulting in higher risks of developing pathogenic oral bacteria associated with nosocomial and respiratory infections. Oral health management in patients with dysphagia should receive more attention during hospitalization.

## THE HEAL ITALIA PROJECT: THE UNIVERSITY OF FOGGIA SPOKES 1, 4 AND 7 EXPERIENCE

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**Aim:** the Health Extended Alliance for Innovative Therapies, Advanced Lab-research, and Integrated Approaches of Precision Medicine (HEAL Italia) project was organized into 8 thematic biomedical research Spokes that generate a workflow from data acquisition and model development, to precision diagnostics, innovative therapies and prevention strategies, to finally generate a clinical tool based on new devices and technologies. The Spokes, strongly interconnected, direct their results towards different pathologies, such as cancer, cardiovascular, metabolic and rare diseases, with the long-term vision of satisfying every person's right to receive effective health services in a personalized and sustainable way, for the benefit of the entire community.

**Methods:** by implementing healthcare tools into clinical practice supported by integrated digital data analysis, including

bioimaging, omics and medical device-derived data, performed using computational tools such as Artificial Intelligence (AI) and network medicine, the Spoke 1, Spoke 4 and Spoke 7 were involved to provide new diagnostic pathways and non-invasive devices for early diagnosis and screening for mono- and polygenic diseases and cancer.

**Results:** the convergence of AI and biomarkers represents a formidable tool in healthcare transformation. AI can identify omics variations, offering the potential to uncover novel disease biomarkers or enhance our understanding of disease mechanisms.

**Conclusions:** ongoing research, collaboration between Spokes and healthcare professionals, and a thoughtful approach to ethical considerations are crucial for connecting the full potential of these technologies.

## MY-DENTY-KIT - ORAL HYGIENE IN PRISON

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**Aim:** right to health of prisoners follows two fundamental principles: the right to maintain good health and the right to treatment. My Denty Kit™ is a Third Mission project that intends to start a path of prevention of oral health in prisons, often overlooked aspect. According to Italian scientific research, in fact, pathologies of the gastrointestinal system and of the dental system, constitute one of the main causes of illness for detained people. Inmates' oral health problems depend, consistently with risk factors for general health and the lack of daily oral hygiene tools. The aim of the project is the creation of an oral health prevention campaign with the delivery of oral hygiene kits and explanatory booklets for daily oral care for the well-being of prisons in the Lazio Region.

**Methods:** for the creation of the My-Denty-Kit, cooperatives/

associations relating to prison life and the Oral Care sector industries were involved. The kit consists of a toothbrush, toothpaste and an information brochure with all the explanatory photographs of the brushing phases, explained in four languages.

**Results:** a first quantity of 2,500 health aids and multilingual educational brochures was delivered by the Sapienza team to the "New Complex" of the Rebibbia penitentiary in Rome to be distributed to detained people.

**Conclusions:** Sapienza confirms its commitment to promoting activities dedicated to the well-being and health of people living in a prison situation as well as to promote access to high-level training courses, from an inclusive and Third Mission perspective".

## INCIDENCE OF BACTEREMIA AFTER DENTAL SCALING AND TOOTH BRUSHING RELATED WITH ORAL HYGIENE

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**Aim:** as most invasive dental procedures, also daily oral hygiene activities can lead to bacteremia, that is generally transient and uneventful in healthy patients, but, in at-risk patients, it might cause systemic infective complications. This study aims at assessing whether poor oral hygiene (OH) level increases the incidence of bacteremia after dental scaling and tooth brushing.

**Methods:** for each patient clinical history and periodontal indexes were recorded; patients were divided into 2 groups (poor oral hygiene versus excellent oral hygiene), according to their plaque index score (PI). Each patient performed tooth brushing at the dental chair; after 7 days, the poor OH group received dental scaling and after further 7 days, the same group performed again tooth brushing after having received oral hygiene instructions. At each visit, blood samples were collected at different time points (at baseline until 20 minutes from each procedure – tooth brushing and dental scaling). Sa-

liva dental plaque were also collected. Microbiological analyses by PCR were applied to detect periodontal pathogens in samples (16S rRNA gene).

**Results:** 30 patients (14 male, 16 female, mean age 38.4 years [SD = 18,8], 30% smokers) were enrolled. The incidence of bacteremia after tooth brushing increased over time, resulting higher in the poor OH group; higher incidence of bacteremia was also recorded in the poor OH group after dental scaling rather than after brushing, while lower incidence of bacteremia was observed after dental scaling and oral hygiene instructions. Similar proportions of periodontal bacteria were found in blood, saliva and dental plaque.

**Conclusions:** bacteremia induced by tooth brushing was significantly higher in patients with a poorer level of oral hygiene. This could support the role of oral hygiene in reducing bacteremia after dental procedure.

## EFFECTIVENESS OF THREE ORAL HYGIENE EDUCATIONAL METHODS: A RANDOMIZED CLINICAL TRIAL

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**Aim:** the objective of the study was to compare three different home oral hygiene education methods in order to identify the most effective one by the patient.

**Methods:** 16 patients (12 males and 4 females, age ranged from 18 to 50 years) were randomly divided into 3 groups: Group 1: home oral hygiene instructions with the only aid of a 3D virtual demonstration model (typodont); Group 2: the operator directly instructed the patient by indicating a precise technique, Group 3: the operator guided the patient to overcome the deficits of toothbrush support and reaching the gum line of all areas by mimicking manual gestures and facial expressions without the aid of models and toothbrushes. The inclusion criteria were gingivitis or periodontitis (I-III stadium), Full Mouth Bleeding Score (FMBS) and Full Mouth Plaque Score (FMPS)

≥40-50%. A medical record was compiled identifying the degree of inflammation through the evaluation of the Full Mouth Plaque Score (FMPS), Full Mouth Bleeding Score (FMBS) and Papillary Bleeding Index (PBI). These data were collected at baseline ( $T_0$ ), 14 days ( $T_1$ ) and 4 months ( $T_2$ ) after the first appointment.

**Results:** an improvement of PBI, FMBS and FMPS indexes was noted from  $T_0$  to  $T_1$ , while at  $T_2$  there was a worsening of FMBS and FMPS compared to  $T_1$ , but not to  $T_0$ . PBI improved in all three observations.

**Conclusions:** no statistically significant differences were detected between the three different hygiene techniques, so the operator could define a more personalized approach as preferable, definable as “Guided Oral Hygiene Instruction” (GOHI).

## COMPARISON BETWEEN OZONIZED GELS AND CHLORHEXIDINE IN NON-SURGICAL PERIODONTAL TREATMENT

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**Aim:** to evaluate the efficacy of newly introduced ozonated gels compared with conventional chlorhexidine-based gels in the management of periodontal patients during home therapy.

**Methods:** 30 patients with bilateral periodontal disease (severity I, complexity II) took part in the study. After non-surgical mechanical periodontal treatment, the teeth were randomly divided into two groups (split-mouth study design): teeth in the Control group were treated with a traditional chlorhexidine-based gel for 2 weeks after the first visit, while teeth in the Test group were similarly treated with ozone-based gel. After the baseline evaluation, follow-up included evaluations at 1, 2, and 6 months.

Clinical indices considered were clinical adhesion loss (CAL), probing pocket depth (PPD), bleeding on probing (BoP), plaque control record (PCR), recession (R), and tooth mobility (TM).

**Results:** for CAL, PPD, BoP, and PCR, significant within-group differences were found for both groups ( $p < 0.05$ ), in contrast to intergroup differences ( $p > 0.05$ ). For R and TM, no significant differences were found.

**Conclusions:** non-surgical mechanical periodontal debridement with the additional use of ozone, and chlorhexidine is an effective outcome in periodontal treatment. Ozone could be suggested as an alternative to chlorhexidine.

## THE EFFECTIVENESS OF VISUAL AIDS IN IMPROVING ORAL HYGIENE IN PATIENTS WITH ASD

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**Aim:** this study aims to evaluate the effectiveness of visual aids in improving oral hygiene levels in patients with ASD.

**Methods:** 66 children with ASD (mean age  $9.3 \pm 2.4$ ) attending the Dental Clinic of the University of Milan were enrolled to participate in the study. Personal data and oral hygiene habits were collected during the first dental visit ( $T_0$ ). The Debris Index Scale (DI-S), Calculus index Scale (CI-S), and Oral Hygiene Index Scale (OHI-S) were also assessed. Finally, professional oral hygiene was performed. Patients were then randomly divided into two groups (study group  $n = 35$ ; control group  $n = 31$ ): in the study group, patients and their parents were instructed in correct oral hygiene procedures and were provided with visual aids to use at home; in the control group, only oral hygiene instructions were provided. After one month ( $T_1$ ), the

patient's oral hygiene was again assessed, and the child and parents were motivated a second time to perform oral hygiene correctly at home. After three months ( $T_2$ ), a final oral hygiene assessment was performed.

**Results:** at  $T_2$ , a higher prevalence of children brushing their teeth at least twice was found in the study group ( $p = 0.014$ ), as well as a significant difference in clinical parameters between groups ( $p = 0.002$  for DI-S;  $p < 0.001$  for CI-S and OHI-S). Furthermore, each estimated parameter improved significantly from  $T_0$  to  $T_2$  more in the study group than in the control group. ( $p = 0.005$  for CI-S;  $p = 0.023$  for DI-S;  $p = 0.006$  for OHI-S).

**Conclusions:** Visual aids effectively improve oral hygiene in patients with ASD.

## RCT OF AN ANTIPLAQUE EFFICACY OF NEW FORMULATION OF FATTY ACIDS-BASED MOUTHRINSE

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**Aim:** the market offers many plaque-controlling mouthrinse options, but recent research reveals fatty acids' antimicrobial potential. Despite limited evidence on their antiplaque effects, fatty acids are intriguing for oral care innovation.

**Methods:** this non-inferiority randomized clinical trial assessed the antiplaque efficacy of a fatty acids-based compared to stannous fluoride mouthrinse in experimental gingivitis induced by 14 days of oral hygiene cessation. Participants used assigned treatments twice daily for 14 days. Full Mouth Plaque and Bleeding Scores served as primary outcomes. Statistical analyses encompassed parametric and non-parametric methods, as well as logistic regression models.

**Results:** thirty-one volunteers completed the trial, split between FAG and SF groups. Experimental gingivitis increased

in both groups, with rates of 60.0% and 50.0% for FAG and SF respectively. Post-trial, FMPS and FMBS rose in both groups, but non-inferiority of FAG to SF was confirmed. No significant FMPS/FMBS differences were observed overtime, and there were also no significant differences in gingivitis rates throughout the trial. Crude and adjusted models, reiterated the lack of significant association between outcomes and treatments. The adjusted odds ratio was 0.71 ( $P = 0.662$ ).

**Conclusions:** this study establishes the non-inferiority of fatty acids-based relative to stannous fluoride mouthrinse in an experimental gingivitis model. Fatty acids offer promising avenues for oral care enhancement, necessitating further investigation and validation in broader real-life scenarios.

## ULF-TENS RELIEVES DISCOMFORT DURING NON-SURGICAL PERIODONTAL TREATMENT

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**Aim:** non-surgical periodontal treatment, consisting of scaling and root-planning, has an important role in maintaining and improving oral health. However, it can be an invasive treatment, causing discomfort and pain in some patients. The association with discomfort can prevent patients from seeking dental treatment, adversely impacting their oral health.

**Methods:** the authors applied an Ultra-Low Frequency (ULF) Transcutaneous Electrical Nerve Stimulation (TENS) to 20 patients who underwent non-surgical periodontal treatments and quantified their pain and discomfort when treatment was delivered with and without ULF TENS. Having conducted studies on the efficacy of ULF TENS in the treatment of TMD patients in the past, the au-

thors investigated its effect on 20 randomly selected adult hygiene patients when subjected to 2 experimental conditions (with TENS and without TENS). This study was organized as a crossover controlled randomised split mouth study to quantify the patients' pain and discomfort with and without the application of TENS.

**Results:** after quantifying maximum voluntary opening, pain intensity and comfort with and without TENS, the authors found statistically significant reduction in pain and discomfort when ULF TENS was applied.

**Conclusions:** the results of this study demonstrated the effectiveness of ULF TENS in alleviating the potential pain associated with scaling and root-planning during a hygiene treatment.

## TASTE AND FOOD PREFERENCES USING SIX TOOTHPASTES: A RANDOMIZED CONTROLLED STUDY

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**Aim:** we report the results of a randomized controlled clinical study aimed at evaluating possible changes in healthy individuals using six toothpastes with different active ingredients and functions.

**Methods:** 120 healthy blinded volunteers were randomly assigned into 6 groups and given toothpastes with different actions for 30 days: A anti-halitosis, B multi-action, C antimicrobial, D desensitizing, E depigmenting, F demineralizing. Taste perception was evaluated at different time-points, recording the recognition of each flavor and its intensity. On days 7 and 30, subjective changes in food preferences and liking were recorded using specific questionnaires.

**Results:** the results showed that different toothpastes influenced the perception of taste, with significant increase in the

perception of salty and sweet after first brushing (A, C, D and E for salty; B, C, D, E for sweet), and after repeated use (A and E for salty, A and F for sweet). Only toothpaste C showed a significant change in bitter taste in the first use. The intensity of the sour flavor was not significantly influenced. Toothpaste B caused a reduction in taste recognition at all time points. Toothpastes B, C, E, and F caused changes in food preferences, mainly increasing liking of carbohydrates over protein-based nutrients.

**Conclusions:** the study showed significant correlations between the use of commercial toothpastes and taste alterations. Further investigation is needed, and such studies are warranted to provide personalized treatments for both professionals and consumers.

## SEALS: AS A PREVENTION TOOL

Bettoli L

**Aim:** sealing is a prevention method and its purpose consists in the mechanical closure of grooves and dimples, preventing bacteria from settling. The aim of the research is to verify that the seals have decreased the incidence of tooth decay.

**Methods:** a retrospective study was carried out, consisting of reading patients' medical records and analysing specific parameters (age, whether seals were carried out and when, hygiene at the first visit, whether they carried out constant check-ups, whether fillings or touch-ups were carried out, hygiene at the last check-up carried out in 2022).

**Results:** patients who do not perform seals have at least one cavity, while in patients who do not have seals, only 10 of them have had caries. In the last 10 years, more seals have

been carried out, indicating that the concept of prevention has expanded. Comparing the hygiene at the first visit and that at the last check-up, an important improvement can be seen. Excellent prevention has been carried out on paediatric patients, while there is still room for improvement in adults. Patients with seals respond positively to regular check-ups, while for patients without seals, their importance should be reinforced.

**Conclusions:** from the study carried out, there is a one-to-one correspondence between seals and the prevention of caries, without forgetting that the patient must carry out constant checks and have proper home hygiene. Data show that seals reduce the incidence of carious lesion.

## AN HOLISTIC APPROACH IN DENTISTRY FOR PATIENTS WITH SPECIAL NEEDS

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**Aim:** Special needs patients (SNP) may present many pathologies and systemic alterations. The aim of the study is to show the case studies of the Odontostomatology Clinic of San Gerardo Hospital in Monza of the last 12 months.

**Methods:** a retrospective analysis of the case studies of the Special Needs department has been made. The holistic approach to SNP requires the synergy with the hygienist and the comparison with other professional figures. Collaboration between different hospital figures is crucial for the management of complications. The medical evaluation estimates the disability condition and compliance; subsequently, patients are directed to specific therapeutic paths, in the clinic or Operating Room (in which patients are treated in a single OR session).

**Results:** in the last 12 months the study's case series observed: outpatient treatment for 340 subjects, narcosis for 30. The most common pathologies encountered were tooth decay, periodontitis, malocclusion, tooth inclusion, mucosal lesion, dysodontiasis. Furthermore, some patients benefit from preventive treatment of soft tissue trauma, while Intensive Care patients show alterations in the oral microbiome.

**Conclusions:** the holistic approach allows the SNP to receive an adequate treatment of ongoing pathologies and prevention of relapses, due to the increasing availability of the operating room and the improving relationship with the hygienist. The ultimate objective for the SNP is to obtain a stable oral cavity, relatively free from disorders nor pathologies, suitable for functional processes.

## ASSOCIATION BETWEEN ORTHODONTIC THERAPY AND ORTHOGNATHIC SURGERY: IMPACT ON ORAL HEALTH

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**Aim:** the aim of the following systematic review is to analyze, using the available literature, the impact on oral health and hygiene of multibracket orthodontic therapy or aligners associated with orthognathic surgery.

**Methods:** 133 studies were analyzed, taken from PubMed and Cochrane Library, using a combination of keywords such as: Orthognathic Surgery with Plaque Index, Plaque Score, Periodontal Status, Bleeding on Probing, Oral Hygiene. 4 studies were selected including them based on relevance and presence of the parameters of Plaque Index (PI), bleeding on probing (BoP) and quantity of post-surgery plaque (PP). Furthermore, the studies were subjected to qualitative evaluation.

**Results:** the studies (qualitatively medium level) evaluated the IP for multibrackets and aligner therapies: pre-surgery ( $T_0$ ) and

at 1 and 6 weeks post-surgery ( $T_1$  and  $T_2$  respectively). An increase in BoP and IP is observed in  $T_1$  and  $T_2$ , a greater PP in the central incisors, an increase in IP in  $T_1$ , a decrease from  $T_1$  to  $T_2$  for aligners, on the contrary compared to  $T_1$  and  $T_2$  in multibrackets therapy.

**Conclusions:** from the present study, orthodontic therapy associated with orthognathic surgery are characterized by a worsening of the level of oral hygiene in the post-surgical phases, correlated to a post-operative difficulty in carrying out home hygiene procedures. The aligners seem to allow maintaining a better level of oral hygiene in all phases of treatment. It would be appropriate to apply closer monitoring of oral hygiene in the post-operative phases, especially in patients treated with multibrackets devices.

## EFFECTIVENESS OF A CLEANSING GEL IN THE HOME HYGIENE OF TRANSPARENT ALIGNERS

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**Aim:** recently there has been an ever-increasing demand for therapies with transparent aligners, which offer the patient an excellent aesthetic solution and comfort.

The aim of this study is to investigate the effectiveness of different methods of home cleansing of aligners, in particular the use of a cleansing gel.

**Methods:** 10 patients, with an average age of 23 years in orthodontic therapy, were instructed to clean the aligner at home with three different methods: Toothpaste (DE), Effervescent tablets (CE), Geldis® Daily Cleanser (Milan, IT) (GG).

The initial plaque index (PI) and bleeding values on probing (BoP) values were measured (T<sub>0</sub>-average IP 30%, BoP 10%) and for each cleansing method. Bacterial plaque (API) and

aligner opacity (AOI) levels were measured with grades 0 to 3 with grades 0 to 2, respectively.

**Results:** the results obtained demonstrate that there is a significant difference between the three methods of cleansing the aligners and the best result was obtained with the use of the gel (mode - grade 0 API, grade 0 AOI). In terms of oral hygiene, patients who used the gel showed significantly reduced plaque index values (average - 9%) and bleeding (average - 3%).

**Conclusions:** from this study, it is clear that, the use of the gel combined with the mechanical action of the toothbrush as a method of cleansing transparent masks allows the maintenance of a better level of oral hygiene and gingival health for the patient.

## ORAL HEALTH AND NUTRITION: SURVEY ON PREGNANT WOMEN'S AND NEW MOTHERS' AWARENESS

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**Aim:** to evaluate the awareness and behaviors of pregnant women and new mothers about their own and their newborns' oral health and nutrition. Secondary: to provide an informative brochure created by the authors.

**Methods:** this cross-sectional study was based on an anonymous questionnaire of 20 questions divided into 3 domains: demographic and occupational data, oral health and nutrition submitted to pregnant women and new mothers aged 18-49 years attending the Institute for Maternal and Children Health-IRCCS Burlo Garofolo, Trieste. Non-Italian-speaking women were excluded. Descriptive data analysis was performed.

**Results:** 200 women (100 pregnant, 100 new mothers) were included. 68% of participants were aged 25-35 years, 52% had a high educational level (degree) and 90% were Italians.

63% of pregnant women and 58% of new mothers responded to have undergone a dental visit during pregnancy. 31% of pregnant women were aware of oral physiological changes that might occur during pregnancy and collected information on their own. More than 70% of women did not know that dental caries was an infectious transmissible disease. 56% vs 52% of pregnant women vs new mothers respectively, did not know how to perform oral hygiene in the newborn. 99% of participants stated they would have been interested in deepening their knowledge about their own and their child's oral hygiene and nutrition in pre-natal courses.

**Conclusions:** educational programs for future mothers on oral health and nutrition and multidisciplinary programs involving pregnant women's and newborns' caregivers are needed.

## CLINICAL COMPARISON OF DENTAL PROFESSIONALS' APPROACHES TO SEALANT MANAGEMENT

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**Aim:** pits and fissure sealing are well-established preventive methods. We aim to survey the approach the sealant management among Italian dentists and dental hygienists.

**Methods:** an electronic survey (Qualtrics) was sent to dental hygienists and dentists, after approval of the Bioethical Committee. The survey was anonymous and voluntary, and consisted of 18 questions divided into 4 domains: 1) Demography; 2) Preventive attitudes; 3) Sealing approach; 4) Post-treatment management.

**Results:** respondents covered all Italian regions (N = 278), highly involved in preventive measures (99%). General dentists (48%), pedodontists (24%) and dental hygienists (28%) perform tooth sealing of molars, while 6% seals also premolars,

and 1% palatal surface of incisors, according to the patients' caries risk (35%) and mostly when the tooth is totally erupted (80%). Sealing is performed mainly after tooth polishing (99%) with toothbrush (65%), sandblasting (14%), or other methods. Although resin sealants are the most used materials (69%), 41% of respondents do not use rubber dam mainly due to patients' acceptance difficulties (68%) nor a bonding system (36%). Occlusal check is usually performed (87%), and 57% of the interviewed had to repair previous sealing.

**Conclusions:** although tooth sealants can be performed by dental hygienists, it seems it mainly remains a task of dentists. Indeed, different clinical approaches were observed, calling for further investigations.

## ANALYSIS OF OHIP-14 IN PATIENTS WITH PERIODONTITIS

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**Aim:** this study aimed to analyze the quality of life in relation to oral health through the Italian version of the Oral Health Impact Profile questionnaire in reduced form (OHIP -14) in patients with periodontitis.

**Methods:** out of the 44 patients enrolled, 22 had stage III periodontitis and 22 were healthy controls. In the study patients with the following characteristics were included: age (>18 years old), self-sufficiency, and without disabling diseases. Patients with cognitive impairment (unable to complete the questionnaire) and systemic disease were excluded from the study. The quality of life in relation to oral health was evaluated through an anonymous online form of the OHIP-14 questionnaire. A descriptive analysis of the data was performed.

**Results:** patients with periodontitis showed a higher overall

OHIP-14 score than the control group. Moreover, the Periodontitis group reported higher scores in parameters concerning nervousness, difficulty in feeding, and discomfort pains, while similar scores were observed regarding problems in pronouncing words, unsatisfactory diet, and difficulty performing usual work. In addition, subjects over 60 years old reported higher OHIP-14 scores in the periodontitis group compared to younger patients. However, no such differences were observed in the control group.

**Conclusions:** the results of the study show that oral health is a highly significant factor affecting quality of life. Consequences related to periodontitis may lead to general discomfort, which in the long term may affect the quality of life with a psychological impact.

## SOCIAL PROJECT: ORAL HEALTH IN THE BIRTH PATHWAY

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**Aim:** pregnancy represents the main time for the establishment of healthy behaviors. The social project is aimed to inform pregnant women about their own and their unborn child's oral health.

**Methods:** the social project, aimed at pregnant women, consisted of: pre-meeting questionnaire, educational intervention (online about 1 hour) and post-meeting questionnaire. The questionnaire was divided into areas: oral health maintenance, oral hygiene tools, oral cavity changes in pregnancy, oral hygiene in the child, and information received/researched.

**Results:** forty-nine women were enrolled, 83.3% (n.41) participated in the questionnaire. The data show that 53.8% (n.21) are aware of oral changes in the gestational period. 59% (n.23) know that you should brush your teeth three times a day,

66.7% (n.26) know that professional oral hygiene in pregnancy can be done. 38.5% (n.15) claim that fluoride is harmful. 35.9% (n.14) know that newborn oral hygiene should begin at birth and that the child should be brought to the office for the first time between 18 and 24 months. Finally, 23.1% (n.9) of women have received information regarding oral health from a health professional and 10.3% (n.4) have searched for information on the Internet and social media.

**Conclusions:** oral health knowledge during pregnancy is acquired by the majority of women. The social project shows that there is a need to increase knowledge about the newborn and the information provided by health professionals during pregnancy. Women after the meeting showed that they have learnt the information provided.

## ANXIETY, PAIN AND MEDICAL EMERGENCY MANAGEMENT: KAP AMONG ITALIAN DENTAL STUDENTS

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**Aim:** to assess the current state of Italian dental students' knowledge, attitude, and practice regarding emergency management, anxiety, and pain.

**Methods:** a Google form questionnaire, comprised questions regarding demographic data and 22 questions about knowledge attitude and practice relating to the treatment of anxiety, pain, and medical emergencies management, was administered to Italian Dental Students of the last biennium of study. Knowledge and Attitude questions had five answer options with total score range 0-12 and 0-32 respectively. Practice section total score ranged from 0 to 4.

**Results:** in total, 232 questionnaires were acceptable with an average of 6.11 questionnaires per university site.

**Knowledge section:** the average score was  $3.51 \pm 1.79$  points without geographical differences (Anova: 0.476).

About *Anxiety Domain*, the mean total score was  $0.54 \pm 0.66$  points. A geographical difference (Anova: 0.049) was observed: the North ( $0.41 \pm 0.59$ ) and the South ( $0.65 \pm 0.67$ ). About *Pain Domain*, mean result was  $1.31 \pm 0.98$  points. About *Medical Emergency Domain*, mean result was  $1.65 \pm 1.01$  points. No Geographical differences were found in Pain (Anova: 0.743) and emergency (0.522) domains.

**Attitude section:** the mean total score was  $17.45 \pm 3.68$  without geographical differences (Anova: 0.396).

**Practice section:** 53.45% of students have never taken courses for anxiety. About emergencies, 25.43% have never attended any BLS courses. No geographical differences were found (Anova: 0.267).

**Conclusions:** there is a need to train skills in emergency management, anxiety, and pain.

## PERIODONTITIS AND PYORRHEA: TWO SIDES OF THE SAME COIN?

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**Aim:** to investigate patients' knowledge of periodontal disease, its clinical signs and risk factors.

**Methods:** an observational survey was conducted on 220 patients (100 males and 120 females) who accessed for their first visit in the Oral department of the public hospital Policlinico Umberto I of Rome. All the recruited patients signed an informed consent form before answering the questionnaire. This procedure was carried out in the first dental visit with an operator-patient interview method, followed by the collection of anamnestic data and the intra- and extra-oral visit. Only subjects who showed difficulty in fully understanding the meaning of the questions and subjects under the age of 18 were excluded from the survey.

**Results:** 50% of patients said they knew what "Periodontitis" was. 64,54 % of patients said they knew what "Pyorrhea" was. 27.72% of patients said they knew what pyorrhea was, but did

not know what periodontitis was. 46 out of 220 patients defined periodontitis as "inflammation of the gums" and defined pyorrhea as "the most severe form of oral disease in which bone resorption and tooth loss occurs". 29% of patients noticed gingival recession and did not undergo a dental examination for this reason, over 55% of patients observed heavy bleeding while brushing their teeth and did not visit the dentist, moreover 66 patients with periodontal disease did not know they had it.

**Conclusions:** based on the answers received, a lack of information on periodontal disease emerges. Informing patients is the first move to prevent periodontitis and its dramatic consequences. These 220 visits were a great opportunity for us to raise awareness among our patients about their oral health status and to understand that further efforts will be necessary from the entire dental community to fill these gaps.