



Strategies for the prevention of periodontal disease and its impact on general health: Latin America and the Caribbean Consensus 2024

Abstract

Purpose

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Periodontal diseases are closely related to non-communicable diseases and their prevention depends on their link with healthy lifestyle programs. The purpose of this consensus was to summarize and propose preventive strategies at the community, individual and research levels in Latin America and the Caribbean.

Methodology

A critical review and search strategy was carried out in Pubmed, LILACS and SCIELO on three topics:1) Social determinants, risk factors, and behavioral changes related to PD throughout individuals' life 2) Impact of mechanical and chemical control of plaque for the prevention of gingivitis 3) Impact for prevention of systemic diseases.

Results

Regarding public health policies, no consensus was reported in the region. In some countries, periodontal education strategies have been implemented, mainly for pregnant women and other chronic diseases, but their impact on primary and secondary prevention has been little evaluated. A positive aspect in recent years is the implementation of some public policies, including clinical practice guidelines and care pathways. Based on the latest consensus, multicenter educational research and technologies strategies were found in the region, but their effectiveness needs to be evaluated in clinical studies.

Conclusion

A barrier to the implementation of preventive strategies has to do with the human factor. Therefore, the training of expert periodontists in communication strategies, technologies that allow the empowerment of patients with their periodontal health, and training of professionals from other areas of health who are more aware of the importance of oral health as a healthy lifestyle is required.

Keywords: Periodontal Diseases; Prevention and control, Public Health; Latin America





Introduction

Periodontal diseases (PD) are inflammatory in nature influenced by host factors and dysbiotic biofilm and are closely related to non-communicable diseases (NCDs) and risk factors. By 2030, FDI's vision, and oral health data will be integrated into medical data management systems¹. Therefore, preventive strategies and recommendations must address the effects of both inflammation and infection, as well as identify predisposing and modifying factors for their onset and progression². In 2020, the Latin American (LATAM) and Caribbean periodontal Consensus, organized by the Latin American Oral Health Association (LAOHA), proposed a regional plan for the prevention of PD at both the individual and community levels. At that time, recommendations for preventing PD included a focus not only on the mechanical and chemical control of the biofilm but also on modifiable risk factors within the causal chain throughout the health-disease process^{3,4}.

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In PD, primary prevention refers to a preclinical stage to prevent the onset of the disease by reducing the risk factors of biofilm development and gingival inflammation. Secondary prevention concerns properly managing the disease at an early stage based on timely diagnosis and prompt treatment³. In LATAM and Caribbean countries, where a large part of the population has low and middle income, limited access to health services, and lack of knowledge about diseases and their prevention, the actions taken to reduce the impact of these diseases are especially relevant. Efforts have been made in the region; however, it is necessary to transfer these findings and generate new oral health policies focused on preventive strategies. The purpose of this consensus was to propose community, individual, and research strategies for the prevention of PD and its impact on general health, promoting healthy habits from childhood to the elderly population based on three topics: 1) Social determinants, risk factors, and behavioral changes related to PD throughout individuals' life 2) Impact of mechanical and chemical control of plaque and bleeding for the prevention of gingivitis 3) Impact for prevention of systemic diseases (SD) and conditions related to PD.

Methodology



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A strategy was carried out in Pubmed through MESH terms and in LILACS and SCIELO using DECS terms to identify studies on PD prevention. The search strategy was as follow: ("Hispanic or Latino"[Mesh] OR "Caribbean Hispanic people" [Supplementary Concept]) AND "Periodontal Diseases"[Mesh]) AND "prevention and control" [Subheading].

1. Evidence and recommendations on social determinants, risk factors and behavioral changes regarding PD over the life course of individuals.

1A. Public and private policies evidence on periodontal prevention in Latin America and the Caribbean (Community level)

The WHO Commission on Social Determinants of Health emphasized the importance of socioeconomic, political, and environmental factors of health: the circumstances in which people are born, grow, live, work, and age. The LATAM and Caribbean population is diverse in terms of sociodemographic determinants, economic and social inequality, and exposure to risk factors and systemic conditions. These circumstances determine the behaviors that people adopt and the possibilities of modifying habits. Few community strategies have integrated periodontal prevention according to conditions of inequality, income, educational level, and access to health services.

Community preventive strategies for PD should not be isolated from health programs aimed at establishing healthy lifestyles. Due to its status as a low-grade inflammatory disease, it should be considered, especially in more vulnerable populations. Therefore, community strategies are required from public and private health systems that involve oral health in risk control programs for cardiovascular diseases, metabolic diseases, pregnant women, etc. Additionally, the prevention of PD should be integrated into the promotion and communication strategies for healthy lifestyles, such as the reduction in tobacco consumption, healthy nutrition, physical exercise, sleep improvement, moderate alcohol consumption, and strategies to manage stress⁵ (Fig. 1). Most experts believe that state public and private health policies should be maintained, but they should be improved. Government and private entities, scientific associations and universities should act together to improve the periodontal health and well-being of the population. Strategic alliances with Dental Products Companies are necessary for the Distribution of free or affordable oral hygiene products to underprivileged areas. (R1 and R6).





1B. Role of scientific associations and universities in the primary prevention of periodontal diseases (community/individual level and recommendations for research)

Providing optimal periodontal health represents a challenge for the dental profession, scientific associations, and dental education. The Iberoamerican Federation of Periodontology (FIPP) held a Latin American consensus, using Delphi Methodology, with experts from 16 countries to discuss trends in Periodontics for the year 2030. Regarding public health policies and frequency of prevention and treatment procedures performed in periodontics in the public sector, no consensus was found. "Oral hygiene" achieved a moderate consensus. However, no consensus was reached regarding the use of interproximal brushes. Nevertheless, experts considered that the recommendation of other interdental cleaning devices will increase (71.6%). There was a consensus on the significant systemic connection with PDs and the need for collaborations between doctors and dentists. In contrast, there was no consensus regarding the role of public health in periodontal diseases, which may reflect differences in the participating countries' public health systems. Most experts believe that state public health policies should be maintained, but increasingly see the need to increase prevention activities by the private sector and increase awareness efforts about PDs.

120 A communication strategy on social networks in health professionals reported an increase of more than 90% in: the importance of oral health as a healthy lifestyle, the recognition of risk factors shared with chronic non-communicable diseases and the importance of periodontal care to benefit systemic health.(in press) An Manifesto by LAOHA in conjunction with FIPP promoted the dissemination of content on social networks for health professionals and patients on early signs of PD, self-care, strategies for controlling CRF with other NCDs and the connection with SD ⁶. An online application initiative (perio-awareness) was published to promote awareness about the prevention of PD. The application evaluates 12 parameters ("6 gold and 6 silver Questions") that patients can assess regarding periodontal signs and symptoms. Based on an algorithm, 130 recommendations are given to encourage the search for a professional diagnosis and an appropriate patient/professional interaction. The recommendations provided by this application findings the possible are based the of characteristic parameters/situations/habits in the survey⁵³. (Fig.2)



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1C. Evidence on the preventive impact of controlling risk factors related to periodontal diseases.

The WHO (World Health Organization) has recommended the development of joint preventive strategies for many NCDs due to shared common risk factors (CRFA). However, there is limited evidence in the region regarding this type of approach and the use of personalized medicine⁷. In PD, socio-environmental risk factors such as smoking, alcohol consumption, unbalanced diet, poor hygiene, inadequate access to dental services, stress, and occlusion trauma should be prioritized in health care⁸. The successful outcomes in preventing and reducing tobacco consumption in LATAM and the Caribbean must be analyzed and replicated for the prevention of other conditions and diseases. In the region, educational strategies for pregnant women have been implemented, demonstrating an increase in knowledge, practices, and empowerment to control PD and other risk factors⁹.

The authors summarized a consensus recommendations/call to action on the impact of preventive on social determinants, risk factors and behavioral changes in relation to PD throughout the life of individuals. (Table 1)

2. Evidence and recommendations on the impact of mechanical and chemical control of bacterial plaque and bleeding for the prevention of gingivitis

2A. Evidence on the effectiveness of mechanical and chemical preventive strategies. (Community level)

The primary preventive action at the community level involves health education programs to raise awareness among individuals at different life stages about the necessity and importance of daily oral hygiene care. To achieve this, these programs need to take place in different settings, such as schools and both public and private healthcare services, to reach the widest audience possible. However, the challenge in preventive actions at the population level often relates to access to healthcare services. Implementing effective educational programs to promote oral hygiene practices and providing easy access to dental services are significant challenges. The lack of resources, adequate



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infrastructure, and awareness within communities can limit the effectiveness of preventive interventions.

2B. Evidence on the effectiveness of mechanical and chemical preventive strategies (individual level).

Daily habits play a crucial role in the effective control of supragingival biofilm. Although brushing is considered an essential method, there are still some questions regarding the recommendation of specific characteristics of manual brushes, the use of electric brushes, and the choice of interproximal devices. In a systematic review evaluating mechanical control in individuals undergoing periodontal maintenance, 80% of studies comparing manual and electric toothbrushes found no significant differences between them. However, the authors emphasize the lack of robust evidence due to the limited number of studies¹⁰. Regarding bristle design, toothbrushes with tapered tips showed superior reductions in plaque index and gingival bleeding compared to round-tipped brushes¹¹. As for electric brushes, oscillating-rotating power toothbrushes exhibited a slight difference in plaque control and improvement in gingival health when compared to frequency sonic power toothbrushes¹¹. Additionally, it must be emphasized that more than a technique, strategies must be taught and communicated to patients according to individual characteristics or their stratification according to risk.

A multicenter study on oral health behavior in South American adults showed that 84.2% of subjects brushed their teeth twice a day or more, but only 17.7% reported interproximal cleaning daily¹². Interproximal cleaning devices, especially dental floss, are more effective when combined with manual brushing than manual brushing alone. Evidence for tooth cleaning sticks and oral irrigators is limited and inconsistent¹³, although rubber bristles interdental cleaners were preferred by study participants¹⁴. Prescribing mechanical control items should consider patient skills and preferences, especially in older adults dealing with xerostomia and have low manual ability.

In systematic reviews, it has been reported that complementary antiseptics in mouthwashes and toothpaste provide statistically significant reductions in gingival, bleeding and plaque indices, and the combination of both shows better results¹⁵. Recent studies suggest a reevaluation of oral health prevention and promotion latest research



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200 have focused on the effectiveness of fluoride toothpaste with a multifunctional therapeutic agent Dual Zinc plus Arginine, stannous fluoride-based toothpaste, and sodium bicarbonate dentifrices^{16–18}.

Cetylpyridinium chloride (CPC) and essential oils mouthwash were the most used active ingredients in gingivitis prevention. Overall, they showed improvements in the evaluated clinical parameters¹⁵. When compared to a placebo solution, CPC demonstrates good efficacy for plaque and gingival inflammatory parameters on interproximal surfaces¹⁹. Recently, a multi-component oral care regimen with a zinc formulation (Dual) and CPC + In mouthwash was shown to be effective in reducing gingival inflammation and supragingival biofilm in patients with gingivitis²⁰.

2C. Evidence on the effectiveness of preventive strategies according to the life course of the population (community/individual level and recommendation for research)

The personalized or stratified prevention strategy throughout individuals' lives is unclear in the region, with limited participation from other health professionals. In children and adolescents, the focus of prevention has been on dental caries, and periodontal health is not always considered. In the early life stages, children's limited autonomy emphasizes the active role of parents and caregivers in promoting healthy oral hygiene habits. Studies exploring mechanical methods for school-age children demonstrate positive outcomes with manual, differently shaped, or electric toothbrushes ^{21,22}. Customizing toothbrush handles enhances hygiene standards for Down syndrome children²³. Alternative motivational methods, including musical videos or verbal instructions, have also demonstrated improvements in plaque and gingival indices^{24,25}. The literature remains uncertain about chemical control for preventing gingivitis in this age group.

In adolescence, many individuals in the region undergo orthodontic treatment without supervision for periodontal health, which is a decisive moment for future periodontal health and bone support. A systematic review revealed that orthodontic manual brushes outperformed conventional manual brushes in plaque removal, with no significant difference in gingival bleeding²⁶. Electric toothbrushes, compared to manual ones,



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demonstrated a significant reduction in both plaque and gingival index²⁷. Systematic reviews comparing different mouthwashes for patients with fixed orthodontic appliances revealed similar results, indicating that chlorhexidine was effective in reducing biofilm and signs of gingival inflammation ^{28,29}.

In young adults, only programs for pregnant women have prioritized the diagnosis and prevention of periodontal diseases. One study reported that the consumption of *L. reuteri* lozenges may be a useful complement in the control of pregnancy gingivitis³⁰. In some countries, they take PD in diabetes into account in their clinical practice guidelines for diabetic patients, but they are clear about both the diagnostic procedures (including self-diagnosis) and the clinical management of the disease. It has been suggested that probiotics may provide additional benefits on periodontal and peri-implant parameters in patients with type 2 diabetes³¹.

A systematic review suggests that probiotic supplementation improves clinical parameters, reduces pathobionts and proinflammatory markers in patients with PD. However, there is a lack of evidence on its role in primary prevention and its impact at the community level. Another systematic review showed a slight improvement in the inflammatory clinical parameters of patients under an experimental gingivitis model with the use of probiotics³². As the population survival rate increases, more people will need preventive and even peri-implant periodontal care. The above adds to a greater probability of NCDs in adults and older adults. In the elderly, prosthetics and medical conditions significantly impact prevention strategies. A study characterized the oral health of elderly individuals as precarious, with nearly half requiring assistance for hygiene care. Additionally, challenging access to dental care underscores the importance of preventive measures³³. Investing in health education for family members, caregivers, and nursing staff, along with the presence of a dental surgeon in elderly care institutions or hospitals, and systematic care organization are deemed crucial^{34–36}. The authors summarized a consensus recommendations/call to action on the impact of mechanical and chemical control of plaque and bleeding for the prevention of gingivitis (Table 2).

3. Evidence on the impact of PD preventive strategies for the management of systemic diseases and conditions that are related to periodontal diseases



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There is strong evidence showing that people with periodontitis have an increased risk of dysglycemia and insulin resistance and higher HbA1C levels in patients with periodontitis and diabetes mellitus³⁷. In the Colombian and Brazilian populations, periodontitis was associated with metabolic syndrome (MetS) and glucose intolerance^{38,39}. In a multicenter cohort study in Brazil, an association of PD with subclinical atherosclerosis was established⁴⁰. Likewise, periodontitis showed a relationship between severe periodontitis and Acute Coronary Syndrome, in Colombian and Chilean individuals.

Pregnant women with periodontal disease have shown an increased risk of adverse pregnancy outcomes (APOs), including preterm birth (PTB), low birth weight newborns, preeclampsia, and gestational diabetes mellitus (GDM). In Colombia, a study reported an association between periodontitis severity and pre-eclampsia (OR:3, 95% confidence interval (CI): 1.91-4.87; p <0.001)⁴¹. Another study suggests an association between periodontal pockets and APOs in low-income pregnant women, highlighting factor such as threatened abortion, absence of antenatal care, hypertension, chronic infections, and periodontal diagnosis as important factors associated with APOs⁴². Similarly, in Chile, a study of 870 pregnant women reported an association between gingivitis and PTB, with significant reductions in PTB observed in pregnant women who received periodontal treatment. Likewise, a recent study screening 1,086 pregnant women in Chile shows a high prevalence of periodontitis (73.1%), with a low percentage of healthy periodontium or gingivitis (26.9%)⁴³.

Additional studies also suggest that pregnant women with gestational diabetes mellitus exhibit a worse periodontal condition than healthy pregnancies measured by periodontal probing depth, clinical attachment loss, and bleeding on probing. Furthermore, the periodontal inflamed surface area was higher in GDM pregnancies⁴⁴. Moreover, obesity was also related to periodontitis severity, with relative risk ratio (RRR) of 1.66 (95% CI: 1.05–2.64; p=0.03) and 1.57 (95% CI: 1.09–2.27; p=0.015) for stage III periodontitis compared to periodontal healthy/gingivitis and stage II periodontitis, respectively⁴³. However, these findings are not consistent across all Latin American countries. For instance, a Brazilian study could not demonstrate the association between the severity of periodontal disease and APOs⁴⁵. The differences between the studies could be explained due to ethnic and socioeconomic variations, the prevalence and severity of



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periodontitis, case definitions, population heterogeneity, and different health systems and the monitoring oral health care for pregnant women.

3.A Evidence on the effectiveness of preventive strategies based on the association of periodontal diseases with systemic conditions (community level)

A positive aspect in recent years is the implementation of public policies, including clinical practice guides and comprehensive care routes aimed at pregnant women in LA. There are many beliefs about the safety of dental procedures during pregnancy, a lack of knowledge of the impacts on adverse pregnancy outcomes and oral health, and the need for oral hygiene during pregnancy that discourages access to health services ⁴⁶. However, in LA, the public health ministries of Argentina, Brazil, Colombia, Chile, Ecuador, Peru, and Uruguay, among others, have established primary care programs for pregnant women in their countries, although there is still no evidence of the impact of these programs in the community. Despite the extraordinary efforts of governments to implement these priority primary care programs, access to health programs is limited.

In some countries, chronic patients are a priority in primary prevention, but it was not possible to completely identify the role and detailed care guidelines for the control of periodontal disease by health personnel. However, many people with chronic diseases from different populations do not attend dental visits regularly and have a high prevalence of periodontitis. Medicare service showed a lack of preventive dental care in African Americans/Black and Latin Americans, with lower educational attainment and household income suffering from diabetes, prediabetes, hypertension, and smokers⁴⁷. Several studies were conducted to establish the impact of regular oral hygiene on chronic disease prevention. In a ten-year cohort study from the National Health Insurance System-Health Screening Cohort of Korea, tooth brushing ≥3 times/day showed a protective effect for new-onset diabetes and reduction of HbA1C levels. The use of antiseptic products for plaque control in patients with NCDs and other medical or hospital conditions is controversial. Oral care in hospitalized patients in critical and non-critical





conditions is recommended in the CPG to maintain oral health. Some systematic reviews, including Cochrane reviews, have shown that chlorhexidine reduces the risk of ventilator-associated pneumonia (VAP)^{48,49}. There is controversy about the role of chlorhexidine in the incidence of mortality, and the evidence is weak^{48,50} ⁵¹. The authors summarized a consensus recommendations/call to action on the impact of preventive strategies for the management of systemic diseases and periodontal disease-related conditions. (Table 3)

Research gaps, conclusions and future needs.

Evidence on the prevention of periodontal diseases, qualitative research and behavioral chances remains scarce, both at the individual and community levels. In preventing periodontal diseases, the human factor plays an important role, that is, the physical, psychological and social characteristics that affect human interaction with other people, in this case, the healthy or periodontally compromised patient and health professionals. Another challenge for the region is that each individual or community presents unique social determinants and/or environmental and biological aspects that must be identified for the success of preventive strategies. ⁵² The term situational awareness requires understanding the environment and anticipating variations in the health/disease process, which is why it is necessary to train more empowered professionals trained in behavioral sciences.

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This consensus is a call to action to network between scientific societies, Universities, LAOHA, FDI, WHO/PAHO and the International Association for Dental Research (IADR), public and private entities to develop research projects, unify and disseminate strategies preventive measures and CPG in periodontics and evaluate their clinical impact on oral and systemic health in different populations.

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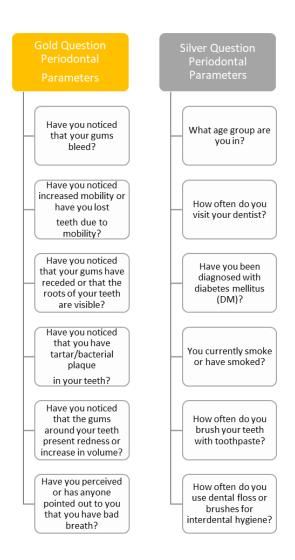
Figure 1 Healthy lifestyle goals with the participation of periodontal health as a goal for the region







Fig. 2 Gold and silver questions from the perio-awareness APP to facilitate patient/dentist empowerment.







Tables

Table.1 Recommendations on social determinants, risk factors and behavioral changes regarding PD over the life course of individuals. Call to Action: Community Level recommendation (CLR) individual level recommendations (ILR) recommendations for research (RR)

| Questions? | Recommendations on social determinants, risk factors and behavioral changes regarding PD over the life course of individuals. | Call to action Level |
|---|--|----------------------|
| What strategy is required to empower the medical profession about the importance of PD prevention? | It is necessary to increase awareness efforts about PD so that health authorities pay more attention to the importance of periodontal health. Develop and Implement (CPG) to advocate for periodontal health across all life stages, emphasizing risk management and lifestyle adherence. | CLR |
| Who should lead the implementation of these preventive strategies at the community and individual levels? | Community level: The participation of leaders in the region who participate in public health policy decisions is required to link periodontal health within risk factor control | CLR ILR |





| | programs and adherence to healthy lifestyles. |
|---|---|
| | Individual level: |
| | The dental office must become an additional setting where patients can learn about healthy lifestyles. |
| | Establish a collaboration network among dental and medical professionals to share knowledge, research findings, and educational resources on periodontal and systemic health interrelations. |
| | Emphasize Personalized Oral Hygiene Education: Stress the importance of tailored oral hygiene instructions in professional development sessions for dental practitioners, catering to the diverse needs of patients including those with special needs. |
| What is the research priority for the region on this topic? | Invest in studies exploring the RR impact of mobile health |
| - | applications, tele-dentistry, and |





social media on oral health awareness and self-care. Focus on assessing how these technologies improve dental care access for marginalized communities.(Perio-

awareness APP Assessment)

Execute comprehensive campaigns across community settings like schools, workplaces, and public spaces, employing both traditional and digital media to highlight the risks and systemic health impacts of PD. Engage local influencers to extend campaign reach and effectiveness.





Table 2. Recommendations on the impact of mechanical and chemical control of bacterial plaque and bleeding for the prevention of gingivitis. Call to Action: Community Level recommendation (CLR) individual level recommendations (ILR) recommendations for research (RR)

| Questions | Evidence and recommendations on the impact of mechanical and chemical control of bacterial plaque and bleeding for the prevention of gingivitis | Action |
|---|---|--------|
| What is the role of university education and scientific associations? | It is essential to implement educational programs and modern communication strategies (APP, social networks) in schools and public/private health services to disseminate information about the importance of mechanical and chemical control of dental biofilm, prebiotics and probiotics at different stages of life and its impact on the quality of life of children during their growth and development. This approach will facilitate community campaigns aimed at promoting healthy oral hygiene habits. Integrate oral health education within schools and community | CLR |





| | initiatives, offering practical demonstrations on effective oral hygiene practices. Organize health fairs providing free dental screenings and educational workshops to emphasize the significance of oral hygiene. | |
|--|--|-----|
| What is the role of private oral product companies in PD prevention? | Ensure access to a variety of toothbrushes, interproximal devices, toothpaste, and mouthwashes in all communities, particularly in more vulnerable populations, through public health policies that involve joining the state with oral products companies. Furthermore, specialized products that demonstrate benefits should be available at low costs in patients with a history of more advanced stages of gingivitis and periodontitis. | CLR |
| What changes in prevention focus are required by dentists? | Transform dental office waiting areas into educational hubs with resources like videos, brochures, and interactive tools promoting mechanical and other adjunctive preventive strategies, such as | ILR |





| | | prebiotics, probiotics and antimicrobial properties of the mouthwashes and dentifrices. | |
|-----------------------------------|---|--|----|
| What is the research priority for | • | It is essential to conduct | RR |
| the region on this topic? | • | research that assesses the efficacy of different prevention methods, across various age groups. Moreover, these studies should incorporate more patient-measured outcomes, focusing on the individual's perception regarding the products. It is necessary to evaluate the effectiveness of different formulations and concentrations of antimicrobial in dentifrices and mouthwashes; probiotics doses and prebiotics use. | |

Table 3 Recommendations on the impact of preventive strategies for the management of systemic diseases and conditions that are related to periodontal diseases. Call to Action: Community Level recommendation (CLR) individual level recommendations (ILR) recommendations for research (RR)

| Questions | Evidence and | Call | to |
|-----------|---------------------------------|--------|----|
| | recommendations on the | Action | |
| | impact of preventive strategies | Level | |





| What is the importance of communication strategies for the multidisciplinary management of systemic diseases and PD? | for the management of systemic diseases and conditions that are related to periodontal diseases Community level: Educational programs aimed at the community on the benefits of attending oral health services during pregnancy. In addition, those women who wish to become pregnant must be identified to anticipate a pregnancy with periodontal disease. Other conditions such as cardiovascular and metabolic disorders require more emphasis on the prevention of PD. | CLR |
|--|--|-----|
| What communication strategies should be implemented by periodontists in the region? | Individual level It is necessary to form a regional group of experts to contact regional and local scientific societies in medicine such as the regional network of the International Diabetes Federation, other medical associations, and health faculties. Build Partnerships with Patient Associations: Work with | ILR |





| | • | patient organizations to spread information about periodontal disease prevention and its connection to systemic health, customizing educational materials for diverse community needs. Train Dental Professionals in Patient Communication: Equip dental professionals with the skills to effectively communicate the connection between oral health and overall wellness and tools promoting healthy lifestyle choices. | |
|---|---|---|----|
| What is the research priority for the region on this topic? | • | Create care models that integrate oral health assessments into routine check-ups for individuals with chronic diseases or during pregnancy. Offer training on the systemic implications of periodontal health to non-dental healthcare providers. It is necessary to promote multicenter research that assesses the role of PD prevention with different | RR |





| approaches (mechanical therapy, antiseptics, foods with prebiotics functions, and probiotics tablets) and its role in the onset or control of systemic conditions. | |
|--|--|
|--|--|